CLEAN WATER • DRINKING WATER • STRONG COMMUNITIES

WATERKEEPER®

WATERKEEPER

DRINK

Summer 2008 $5.95

100% PCR Paper

Volume 5, Number 1

Summer 2008

the curbside collection

TRASH BLOWS

CERRELLA Loaded with trashy features like post-consumer recycled PET canvas upper and recycled rubber outsoles. Look good, feel good, in Curbside.

GO DO BE Teva

TEVA.COM

WATERKEEPER

WATERKEEPER® ALLIANCE

Volume 5 Number 1, Summer 2008

IN EVERY ISSUE

COVER FEATURE

NEWS AND ENTERTAINMENT


We all need clean water to survive.
Be brave. Join me, my father and all our John Paul Mitchell Systems family to help protect our world, our waterways, our people and every living creature. - J.A. DeJoria, Age 10, with non poisonous bull snake
Peace, love and happiness,
John Paul DeJoria, CEO, and the entire John Paul Mitchell Systems family,
supporters of Waterkeeper Alliance
PAUL MITCHELL®
www.paulmitchell.com. Only in salons and Paul Mitchell schools.

Letter from the Chairman

Robert F. Kennedy, Jr.

We know that nations that "decarbonize" their economies reap immediate rewards.

The Next President's First Task — A Manifesto

Last November, Lord (David) Puttnam debated before Parliament an important bill to tackle global warming. Addressing industry and government warnings that we must proceed slowly to avoid economic ruin, Lord Puttnam recalled that precisely 200 years ago Parliament heard identical caveats during the debate over abolition of the slave trade. At that time slave commerce represented one-fourth of Britain's G.D.P. and provided its primary source of cheap, abundant energy. Vested interests warned that financial apocalypse would succeed its prohibition.

That debate lasted roughly a year, and Parliament, in the end, made the moral choice, abolishing the trade outright. Instead of collapsing, as slavery's proponents had predicted, Britain's economy accelerated. Slavery's abolition exposed the debilitating inefficiencies associated with zero-cost labor; slavery had been a ball and chain not only for the slaves but also for the British economy, hobbling productivity and stifling growth. Now creativity and productivity surged. Entrepreneurs seeking new sources of energy launched the Industrial Revolution and inaugurated the greatest era of wealth production in human history.

Today, we don't need to abolish carbon as an energy source in order to see its inefficiencies starkly, or to understand that this addiction is the principal drag on American capitalism. The evidence is before our eyes. The practice of borrowing a billion dollars each day to buy foreign oil has caused the American dollar to implode. More than a trillion dollars in annual subsidies to coal and oil producers has beggared a nation that four decades ago owned half the globe's wealth. Carbon dependence has eroded our economic power, destroyed our moral authority, diminished our international influence and prestige, endangered our national security, and damaged our health and landscapes. It is subverting everything we value.

We know that nations that "decarbonize" their economies reap immediate rewards. Sweden announced in 2006 the phase out of all fossil fuels (and nuclear energy) by 2020. In 1991 the Swedes enacted a carbon tax—now up to $150 a ton—closed two nuclear reactors, and still dropped greenhouse emissions to 5 tons per person, compared to the U.S. per-capita rate of 20 tons. Thousands of entrepreneurs rushed to develop new ways of generating energy from wind, the sun, and the tides, and from woodchips, agricultural waste, and garbage. Growth rates climbed to upwards of three times those of the U.S. The heavily taxed Swedish economy is now the world's eighth richest by G.D.P.

Iceland was 80 percent dependent on imported coal and oil in the 1970s and was among the poorest economies in Europe. Today, Iceland is 100 percent energy-independent, with 90 percent of the nation's homes heated by geothermal and its remaining electrical needs met by hydro. The International Monetary Fund now ranks Iceland the fourth most affluent nation on earth. Geothermal and hydro produce so much cheap power that Iceland has become one of the world's top energy exporters. (Iceland exports its surplus energy in the form of smelted aluminum.) The country, which previously had to beg for corporate investment, now has companies lined up to relocate there to take advantage of its low-cost clean energy.

It should come as no surprise that California, America's most energy-efficient state, also possesses its strongest economy.

The United States has far greater domestic energy resources than Iceland or Sweden does. We sit atop the second-largest geothermal resources in the world. The American Midwest is the Saudi Arabia of wind; indeed, North Dakota, Kansas, and Texas alone produce enough harnessable wind to meet all of the nation's electricity demand. As for solar, according to a study in *Scientific American,* photo-voltaic and solar-thermal installations across just 19 percent of the most barren desert land in the Southwest could supply nearly all of our nation's electricity needs without any rooftop installation, even assuming every American owned a plug-in hybrid. This is, incidentally, a much smaller footprint than would be required by the equivalent power from coal.

In America, several obstacles impede the kind of entrepreneurial revolutions that brought prosperity to Sweden and Iceland. First, that trillion dollars in annual coal-and-oil subsidies gives the carbon industry a decisive market advantage and creates a formidable barrier to renewables. Second, an overstressed and inefficient national electrical grid can't accommodate new kinds of power. Third, a byzantine array of local rules impede access by innovators to national markets. And fourth, state and federal governments have failed to develop efficiency standards and long-promised market incentives for green buildings and machines.

There are four things the new president should immediately do to hasten the approaching boom in energy innovation. A carbon cap-and-trade system designed to put downward pressure on carbon emissions is quite simply a no-brainer. Already endorsed by Senators McCain, Clinton, and Obama, such a system would measure national carbon emissions and create a market to auction emissions credits. The supply of credits is then reduced each year to meet pre-determined carbon-reduction targets. As supply tightens, credit value increases, providing rich monetary rewards for innovators who reduce carbon. Since it is precisely targeted, cap-and-trade is

more effective than a carbon tax. It is also more palatable to politicians, who despise taxes and love markets. Industry likes the system's clear goals. This market-based approach has a proven track record.

The next president must push to revamp the nation's antiquated high-voltage power-transmission system so that it can deliver solar, wind, geothermal, and other renewable energy across the country. Right now, a Texas wind-farm manager who wants to get his electrons to market faces two huge impediments. First, our regional power grids are overstressed and misaligned. The biggest renewable-energy opportunities—for instance, Southwest solar and Midwest wind—are outside the grids' reach. Furthermore, traveling via alternating-current (A.C.) lines, too much of that wind farmer's energy would dissipate before it crossed the country. The nation urgently needs more investment in its backbone transmission grid, including new direct-current (D.C.) power lines for efficient long-haul transmission. Even more important, we need to build in "smart" features, including storage points and computerized management overlays, allowing the new grid to intelligently deploy the energy along the way. This backbone would operate at the speed of light and incorporate sophisticated new battery and storage technologies to store solar energy for use at night and to deploy wind energy during the doldrums. Construction of this new grid will create a marketplace where utilities, established businesses, and entrepreneurs can sell energy and efficiency.

The other obstacle is the web of arcane and conflicting state rules that currently restrict access to the grid. The federal government needs to work with state authorities to open up the grids, allowing clean-energy innovators to fairly compete for investment, space, and customers. We need open markets where hundreds of local and national power producers can scramble to deliver economic and environmental solutions at the lowest possible price. The energy sector, in other words, needs an initiative analogous to the 1996 Telecommunications Act, which required open access to all the nation's telephone lines. Marketplace competition among national and local phone companies instantly precipitated the historic explosion in telecom activity.

Construction of efficient and open-transmission marketplaces and green-power-plant infrastructure would require about a trillion dollars over the next 15 years. For roughly a third of the projected cost of the Iraq war we could wean the country from carbon. And the good news is that the government doesn't actually have to pay for all of this. If the president works with governors to lift constraints and encourage investment, utilities and private entrepreneurs will quickly step in to revitalize the grid and recover their investment through royalties collected for transporting green electrons. One investor anxious to fill this breach is Stephan Dolezalek, a managing director of VantagePoint Venture Partners, one of the world's largest green-tech venture-capital firms. Dolezalek scoffs at claims that a carbon-free economy is still decades away. "With the right market drivers and an open-access marketplace, we can completely decarbonize our electric system within years," says Dolezalek. He analogizes the grid initiative to the federal Arpanet high-speed Internet backbone that accelerated the P.C. revolution and the information-technology boom in the 1990s. "In 1987, there were less than 500 networks," he recalls. "By 1995, there were 50,000. By 1996, there were 150,000. The energy sector has the potential to evolve forward more quickly than most people can grasp today. We're going to see those same quick responses in the renewable-energy sector. As soon as the national marketplace is up, the curves will go vertical."

Energy expert and former C.I.A. director R. James Woolsey predicts: "With rational market incentives and a smart backbone, you'll see capital and entrepreneurs flooding this field with lightning speed." Ten percent of venture-capital dollars is already deployed in the clean-tech sector, and the world's biggest companies are crowding the space with capital and scrambling for position. Says Dolezalek, "The Internet boom caused information flow to increase exponentially, but the price per bit dropped to almost zero. The same thing can happen with energy. Remember, the electrons are hitting the earth for free. We just need to erect the infrastructure to harvest and deliver them to the consumers." Solar and wind plants are far quicker to deploy than conventional power plants because of their simple design and lower environmental-impact concerns. The plants have modest maintenance and operation costs. There are no costly mining, refining, and transportation costs or the catastrophically expensive environmental and military penalties associated with carbon.

"We have the ability to make clean energy both abundant and cheap," says Dolezalek. Accessible markets will give every American the opportunity to become an energy entrepreneur. Homes and businesses will become power plants as individuals cash in by installing solar panels and wind turbines on their buildings, and selling the stored energy in their plug-in hybrids back to the grid at peak hours. "As capital and entrepreneurs rush into this space, the pace of change will accelerate exponentially. As energy production goes up, you could see the price per unit drop to practically nothing."

The president's final priority must be to connect a much smarter power grid to vastly more efficient buildings and machines. We have barely scratched the surface here. Washington is a decade behind its obligation, first set by Ronald Reagan, to set cost-minimizing efficiency standards for all major appliances. With the conspicuous exception of Arnold Schwarzenegger's California, the states aren't doing much better. And Congress keeps setting ludicrously tight expiration dates for its energy-efficiency tax credits, frustrating both planning and investment. The new president must take all of this in hand at once.

We need to create open national markets where individuals who devise new ways to produce or conserve power can quickly profit from their innovations. Open, efficient markets will unleash America's entrepreneurial energies to solve our most urgent national problems—global warming, national security, our staggering debt, and a stagnant economy. Everyone will profit from the green gold rush. By kicking its carbon addiction, America will increase its national wealth and generate millions of jobs that can't be outsourced. We will create a decentralized and highly distributable grid that is far more resilient and safe for our country; a terrorist might knock out a power plant, but never a million homes. We will cut annual trade and budget deficits by hundreds of billions and improve public health and farm production. And for the first time in half a century we will live free from Middle Eastern wars and entanglements with petty tyrants who despise democracy and are hated by their own people. **W**

A version of "The Next President's First Task" appears in the May 2008 issue of Vanity Fair.

ON THE COVER

The water cycle includes human use and the elaborate plumbing systems that bring water to us. Photo: Giles Ashford.

Globally, the paper industry is the single largest industrial consumer of water and the third greatest emitter of greenhouse gases.

Getting the Paper Right!

Waterkeeper magazine is printed on 100% post-consumer recycled paper generated with wind power. We hope that other publications will join us in committing to protect our environment and building the market for environmentally sustainable products. The environmental savings from this switch are enormous:

- **792** trees preserved for the future
- **2,292** lbs. waterborne waste not created
- **337,370** gallons wastewater flow saved
- **37,327** lbs. solid waste not generated
- **73,499** lbs. net greenhouse gases prevented
- **562,584,400** BTUs energy not consumed

Savings from the use of emission-free wind-generated electricity:

- **38,186** lbs. air emissions not generated
- **17** barrels crude oil unused

In other words, savings from the use of wind-generated electricity are equivalent to:

not driving **9,142** miles
OR
planting **1,095** trees

Waterkeeper is printed on FSC-certified Mohawk Options 100% post-consumer recycled paper which is manufactured with Green-e certified wind electricity. This paper is certified by Green Seal and by Smartwood for FSC standards which promote environmentally appropriate, socially beneficial and economically viable management of the world's forests.

CO_2 Waterkeeper and Mohawk paper are proud to announce that using wind power and offsets we have achieved carbon neutral paper production.

WATERKEEPER®
M A G A Z I N E

WATERKEEPER® ALLIANCE

50 S. Buckhout St., Ste. 302, Irvington, NY 10533
www.WATERKEEPER.org
The official magazine of Waterkeeper Alliance

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

Kristine Stratton Managing Editor
Michelle Jacoby Editor
Eddie Scher Editorial Consultant
Giles Ashford Creative Consultant
Anne Costner Advertising
Bandana Malik Assistant Editor
Richard J. Dove Photo Editor
Switch Studio Art Direction
Amy Lamp Designer

Waterkeeper is printed on Forest Stewardship Council (FSC) certified Mohawk Options 100% post-consumer recycled paper which is manufactured with wind electricity.

Printed in USA • Peake DeLancey Printers, LLC

OtterBox
Protects Everything

well almost everything

OtterBox provides protection for technology & valuables. From fully rugged crushproof, waterproof cases to semi-rugged everyday cases. We offer cases for smartphones, PDA's, UMPC's, PC's, iPods and more.

Get 10% off your online purchase and **10% of the purchase price** will be donated back to the Waterkeeper® Alliance to help keep waters clean for everyone.

Save 10% on online orders
Code: **WaterOtter** at checkout
Valid through April 1st 2009

Apple • BlackBerry • HP • Dell • Samsung • Symbol • Palm • PC

www.otterbox.com

OtterBox

WATERKEEPER® ALLIANCE
supporter

Who is Waterkeeper Alliance?

Waterkeepers are investigators, scientists, educators, lawyers and advocates. We take responsibility for protecting your waterways — enforcing environmental laws and standing up for your right to clean water.

Waterkeeper Alliance is a powerful coalition of more than 180 local Waterkeeper Programs — Riverkeeper, Baykeeper, Coastkeeper and other grassroots Waterkeeper organizations connected into a unified international force for environmental protection.

WATERKEEPER® ALLIANCE

Joe Cook, your Coosa Riverkeeper, monitors water quality on the Coosa River in Rome, Ga.

Join Waterkeeper Alliance—Get WATERKEEPER

Everyone has the right to clean water. It is the action of supporting members like you that ensures our future and our fight for clean water and strong communities. Join Waterkeeper Alliance and get **WATERKEEPER** for one year.

Go to **www.WATERKEEPER.org** and click on Donate Now to join as a supporting member. You can also join by mail. Send your check, payable to Waterkeeper Alliance, to **WATERKEEPER** membership, 50 S. Buckhout St., Ste 302, Irvington, NY 10533 or contact us at info1@waterkeeper.org.

Thanks for your support!

Waterkeeper Alliance is a 501(c)(3) non-profit organization. Your $50 contribution or more entitles you to receive a one year subscription to **WATERKEEPER** magazine, which has an annual subscription value of $12. The balance of your contribution is tax deductible to the extent allowed by law.

Riverkeeper, Tribes and Fishermen put Klamath Center Stage at Shareholders' Meeting

Klamath Riverkeeper, tribal leaders, fishermen and conservationists returned home to California and Oregon on May 3, after disrupting Warren Buffett's Berkshire Hathaway annual shareholders' meeting in Omaha, Neb. Buffett is the owner of PacifiCorp, the company that operates the fish-killing dams on the Klamath. Tribes, fishermen and advocates asked sharply pointed questions to Buffett about why he refuses to agree to sign a dam removal agreement, effectively making the Klamath River the largest single issue addressed at the meeting.

A number of shareholders expressed support for dam removal advocates. "I want to thank the people who spoke at the meeting for educating the shareholders about the problems with the Klamath River dams," said Joan Mersch, a shareholder from Menlo Park, Calif. "I think more people need to be educated about this issue. I appreciate what you're doing."

Now action is needed by Buffett and the shareholders to sign an agreement to remove the dams.

Native women hold a banner and send a loud, clear message to Warren Buffett outside of Borsheims jewelry and department store during a cocktail party for shareholders.

Klamath Dam Removal Advocates Win Major Victory in Dams Toxics Case

On March 20, Klamath Riverkeeper won a major concession from the Environmental Protection Agency on toxic algae created by PacifiCorp's reservoirs on the Klamath River. In the wake of litigation filed by Klamath Riverkeeper, the agency reconsidered its decision to not designate the Klamath River as impaired by the toxic algae. The reservoirs created by PacifiCorp's dams are the origin of the blooms of the toxic blue green algae microcystis aeruginosa, a liver toxin and known tumor promoter.

EPA's announcement comes at a critical time. PacifiCorp's dams are in the final stages of a federally mandated relicensing process. In order to get a new dam license, PacifiCorp must get a clean water certification from California and Oregon. The listing of the river as impaired by toxic algae could jeopardize PacifiCorp's clean water certification and dam relicensing. Last year, releases of toxic algae from the reservoirs turned the river neon green during peak Klamath River fishing season and Native Tribes' ceremonies, creating a major blow to the remote Klamath's rural economy.

Utah Hydroelectric Project Halted

Plans to construct a Utah's Hook Canyon Pumped Storage Hydroelectric Project at Bear Lake have been nixed after the Federal Energy Regulatory Commission issued a letter in April denying the right to occupy Utah's state park lands.

"This is the official death letter for the Hook Canyon project," declared Jeff Salt, Executive Director and Lakekeeper for Great Salt Lakekeeper. "This determination demonstrates the power and efficacy of environmental democracy."


STORMWATER RUNOFF IS ONE OF THE LEADING CAUSES OF WATER POLLUTION
ABTECH INDUSTRIES STRIVES TO MAKE THIS WORLD A BETTER PLACE FOR GENERATIONS TO COME. WITH THE SMART SPONGE TECHNOLOGY, STORMWATER RUNOFF POLLUTION IS BEING TREATED IN AN UNPRECEDENTED WAY WHILE HAVING A GLOBAL IMPACT ON WATER QUALITY AROUND THE WORLD. TO FIND OUT MORE ABOUT ABTECH INDUSTRIES AND OUR MISSION TO CLEAN UP THE WATER SUPPLY CONTACT US AT 1.800.545.8999 OR VISIT www.abtechindustries.com.

Ripples

CALIFORNIA COASTKEEPER ALLIANCE

Southern California

Giant Kelp Restoration

Giant kelp forests, which provide habitat for approximately 800 species of marine life, once grew thickly off the Southern California coast. But over-harvesting and other threats have degraded these forests by nearly 80 percent over the past 100 years. California Coastkeeper Alliance and Southern California Waterkeepers recently completed a six-year long Giant Kelp Restoration Project to restore these historic kelp forests. Coastkeeper and Waterkeepers trained hundreds of volunteer divers, restored 18,500 square meters of kelp and educated more than 700,000 southern California schoolchildren about the kelp forests.

18,500 SQUARE METERS OF KELP RESTORED

Shoes: another inconvenient truth.

Wearing them on hard surfaces can destroy your most precious resource. Your spine. But it's not too late. You can still make a choice that will save your back. A choice that will tone your muscles. A choice that will burn extra calories and protect your joints. A choice that will preserve your body for the coming generations.

theantishoe.com

MBT®

The anti-shoe.

MTV features Waterkeepers

Black Warrior Riverkeeper founder David Whiteside produced two videos for MTV on Turkey Creekkeeper's efforts to address recovery needs on the hurricane-ravaged Gulf Coast, and on Atchafalaya Basinkeeper's and Black Warrior Riverkeeper's fight to stop illegal cypress logging in Louisiana. Visit www.blackwarriorriver.org/Waterkeeper_videos.html to see!

All aboard the Katrina-Ritaville Express, a FEMA relief trailer turned museum for hurricane recovery awareness.

TURKEY CREEKKEEPER

WATCH THE VIDEOS!

- www.blackwarriorriver.org/Waterkeeper_videos.htm
- Search for *Ganymede the Waterkeeper* on YouTube.com

STARLIGHT RUNNER

Waterkeeper and Starlight Runner Release Ganymede Film

Polluters of our waterways, beware! This May, Waterkeeper Alliance and Starlight Runner Entertainment released the new animated film *Ganymede the Waterkeeper*. The film stars Waterkeeper Celeste Swan who encounters a hideous industrial monster while testing her waterway. Superhero Ganymede emerges from the water to vanquish the beast. But Swan knows it takes smart, fearless advocacy to strike the heart of the pollution problem. Search for *Ganymede the Waterkeeper* on YouTube.com and tell your friends!

HONORS

Waterkeeper Alliance Receives USC Award

On Earth Day, the University of Southern California honored Waterkeeper Alliance with their first Sustainability Champion Award. Waterkeeper Alliance was recognized for their "steadfast activism and successful litigation against the nation's most egregious polluters."

Kansas Riverkeeper Wins Award

Laura Calwell, Kansas Riverkeeper, received the 2008 Stream Monitor of the Year award from the Kansas Wildlife Federation for her hard work in defending Kansas streams.

Black Warrior Riverkeeper Named Honorary Citizen

Warrior, Alabama's mayor, police chief and fire chief all recognized Nelson Brooke, the Black Warrior Riverkeeper, as an Honorary Warrior Citizen for his tireless fight in protecting the river for the citizens of Warrior.

SPRING CLEANING

$600 found at Neuse River Clean Up

More than 260 volunteers gathered for the Neuse River Spring Clean Up, covering 70 miles of the Neuse River and Crabtree Creek. The experience was particularly rewarding for one volunteer who found $600 in a trashed beer bottle!

South Riverkeeper Stream Cleanups

In April, South Riverkeeper and 60 volunteers removed nearly 500 tires from an old illegal tire dump and hauled large debris half a mile through the woods to clean up Maryland's local streams.

French Broad Riverkeeper Adopt-A-Stream

French Broad Riverkeeper's Adopt-A-Stream program beat records in March. More than 150 volunteers removed 201 bags of trash and 50 tires from the French Broad River and its tributaries, an all-time high.

Clean Rivers Day volunteers remove trash from the shores of the Blackwater and Nottoway Rivers.

Blackwater Nottoway Clean Rivers Day

This spring, 110 volunteers gathered with Blackwater Nottoway Riverkeeper for Clean Rivers Day, pulling a whopping 3.28 tons of trash and debris from the two Virginia rivers.

Buffalo Niagara Spring Shoreline Sweep

Buffalo Niagara Riverkeeper organized a Spring Shoreline Sweep to celebrate Earth Day weekend in April. About 1,000 volunteers pitched in at 31 sites in Western New York.


SAN DIEGO COASTKEEPER

San Diego Coastkeeper Bruce Reznik welcomes Senator Barbara Boxer.

Sen. Boxer, Coastkeeper Protect Our Oceans

United States Senator Barbara Boxer joined San Diego Coastkeeper at a reception in March to support their marine conservation program. Coastkeeper highlighted their efforts to protect the ocean ecosystem through the creation of marine protected areas. Senator Boxer, who was honored with an Environmental Champion Award at the event, spoke about federal efforts to protect the coast and lauded Coastkeeper's work. The event was sponsored by the League of Conservation Voters San Diego and the San Diego-Imperial Counties Labor Council.

Landmark Victory for Farm Area Residents

On April 25, a federal district court judge denied a petition challenging mandatory pesticide emission reductions in Ventura County, Calif. Pesticides rank among the largest contributors to California's toxic air quality. Two years ago, a lawsuit brought by Ventura Coastkeeper and Wishtoyo Foundation, in coalition with community-based environmental justice groups, forced five California counties to comply with an order to reduce smog-forming pesticide emissions by 20 percent. But the Ventura County Agricultural Commissioner later filed a petition with the court claiming that the reductions would result in more environmental harm by converting agricultural land to urban and industrial use. The court denied the Commissioner's claim and maintained that the 20 percent reductions shall remain in effect. This is a landmark victory for residents of farm areas that endure yearly toxic emissions from aerial pesticide applications.

Wabash Riverkeeper Testifies

Wabash Riverkeeper Rae Schnapp testified before the Indiana General Assembly in support of legislation that would provide environmental and health officials information on how manure is spread on Indiana's factory farms. The Indiana Department of Agriculture is promoting factory farms as a tool for economic development, but environmental and social costs are being ignored. Manure often contains excess phosphorus and disease organisms that can pollute streams. Phosphorus from Midwestern agriculture has contributed to a Dead Zone in the Gulf of Mexico.

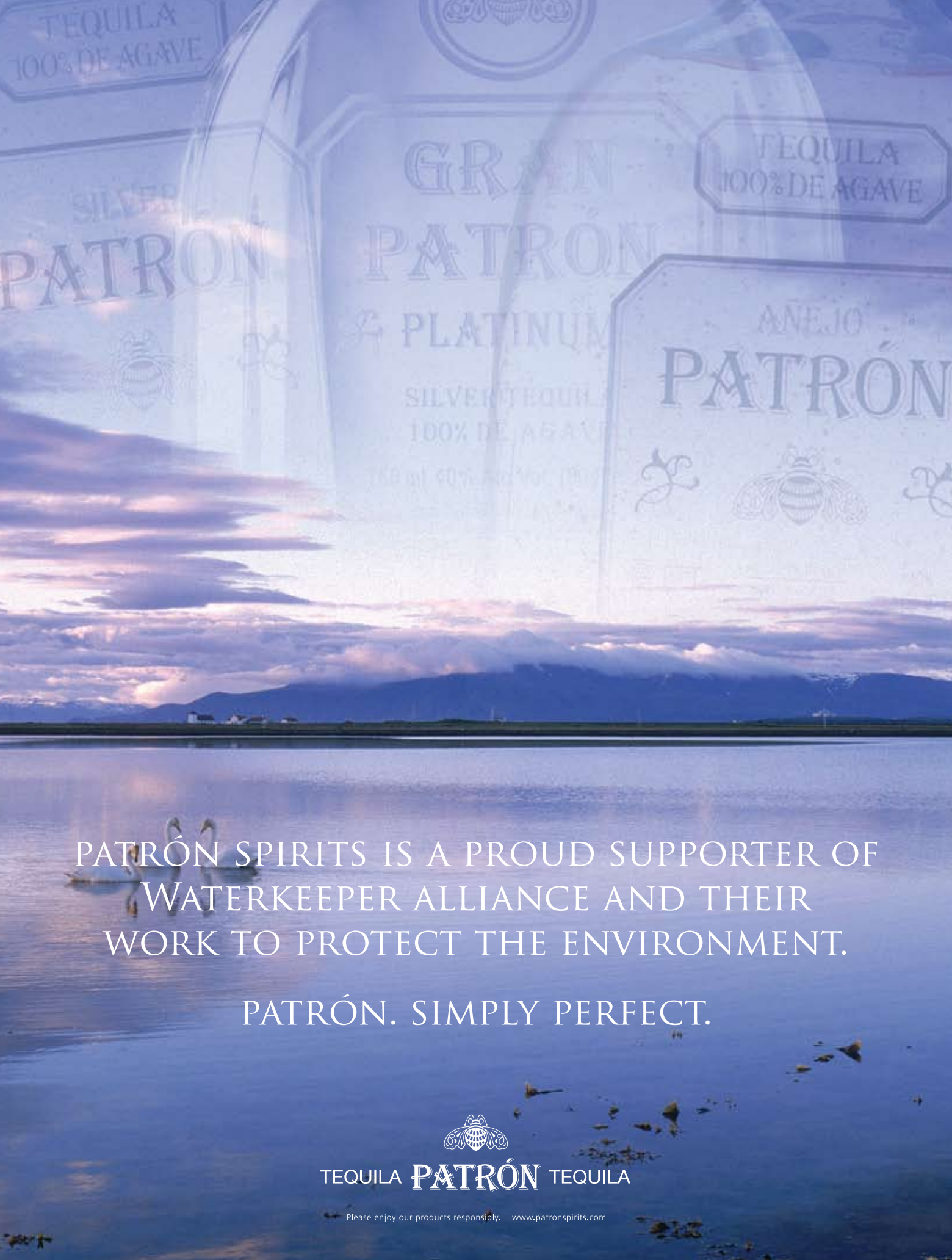
Construction RUNOFF

Runoff from construction sites is one of the leading causes of water pollution nationwide.

This runoff carries dirt, debris and chemicals into our waterways, endangering the health of our communities and our environment. But Waterkeepers are putting an end to this. In Georgia, Upper Chattahoochee Riverkeeper took action to force developer Winmark Homes to restore a stream and pay $48,000 after the company drained and filled 1,800 feet of a stream and violated stormwater laws. In Maryland, South Riverkeeper forced Greenberg Gibbons Commercial Corp. and the Annapolis Towne Center to pay $120,000 to remedy Church Creek after the developer failed to protect the creek from construction runoff.


DAVID WALLACE

A sediment plume flowing from the Annapolis Towne Center swallows Church Creek and the South River after a storm. November 2007.


TEQUILA
100% DE AGAVE
SILVER
PATRÓN
GRAN
PATRÓN
PLATINUM
TEQUILA
100% DE AGAVE
AÑEJO
PATRÓN
PATRÓN SPIRITS IS A PROUD SUPPORTER OF
WATERKEEPER ALLIANCE AND THEIR
WORK TO PROTECT THE ENVIRONMENT.
PATRÓN. SIMPLY PERFECT.
TEQUILA PATRÓN TEQUILA
Please enjoy our products responsibly. www.patronspirits.com

An Ecological Marvel Protected

In the past year alone, the population of Red Knots has declined 15 percent and is in real danger of becoming extinct as soon as 2010.

Horseshoe crabs serve an irreplaceable role in the ecological web of life. For more than a century, however, overharvesting of horseshoe crab eggs has put crab populations in great jeopardy, along with migratory birds that depend on the eggs for food and nourishment.

Now, after two decades, Delaware Riverkeeper, American Littoral Society, New Jersey Audubon Society, Delaware Chapter of the Audubon Society and others succeeded in receiving protections for the horseshoe crab and the birds that depend on them. On March 25, New Jersey Governor Jon Corzine signed into law a moratorium on the harvesting of horseshoe crabs for bait until migratory birds populations are restored.

Each spring, migratory birds fly 3,000 to 4,000 miles non-stop from Central and South America to the shores of Delaware Bay where they gorge themselves on the energy rich horseshoe crab eggs. They then fly another 3,000 miles to their breeding grounds in the arctic. This precise ecological timing — the arrival of the birds timed to coincide with the spawning of the crabs — results in a spectacular display. Hundreds of thousands of migrating shorebirds can be seen on the bay shore at one time.

Unfortunately, for more than a century, the crabs were overharvested for use as fertilizer. From the 1970s on, horseshoe crabs were used as bait for eel and conch, inevitably causing the horseshoe crab population to decline. While some data shows that there are still enough eggs to sustain the crab population, studies show that since 1985 there has been a 75 percent decline in this Red Knot population. In the past year alone, the population of Red Knots has declined 15 percent and is in real danger of becoming extinct as soon as 2010. Evidence also shows that other birds have stepped on the same path as the Red Knot as a result of the decline in the availability of the horseshoe crab eggs, including the Semi Palmated Sandpiper and the Ruddy Turnstone.

In an effort to save the crabs and the birds and this dramatic ecological marvel between them, the Delaware Riverkeeper has been working for decades to secure a moratorium on the bait harvest of the horseshoe crab. On March 17, the New Jersey Senate unanimously passed a moratorium on the harvesting of horseshoe crabs after government reports indicated that the Red Knot was in peril, and a large out-pour of concerned citizens called and emailed in support of the moratorium. The following week, Governor Jon Corzine signed the moratorium into law, placing a $10,000 to $25,000 fine on the harvesting of horseshoe crabs for bait.

The threat to the Red Knot is still imminent, as is the threat to the other migratory birds that rely on the horseshoe crabs of Delaware Bay. But with this new legislation, there is hope that the birds will receive the nutrition they need to survive, hope that the horseshoe crabs can once again rebound, and a chance that one day soon the Red Knot will again thrive so they can continue to grace our shores with their magnificent spring arrival. W

Russia:
Water – Great Wealth and Great Problems

By Maxim Shingarkin
Environmental Program Director, Waterkeepers Russia

Russia is a great water power. But her water problems are also great — all the more so because they have gone unsolved for decades. Statistics are impartial and their verdict on the quality of water in various regions of Russia is frightening in its consistency: "polluted," "heavily polluted," "very dirty"...

Russia is bound by two oceans — the Pacific and Arctic — and has access to the Atlantic Ocean through the Baltic and Black seas. Numerous world-renowned rivers that can rightly be called "great" flow through the country: the Volga, Ob, Yenisei and Amur. The basins of Russia's great rivers encompass more than 11 million square kilometers (65 percent) of the country's total area. Lake Baikal glistens like the purest pearl amidst Russia's bounty.

Russia's water wealth constitutes one-fifth of the world's fresh water supply. At the present time, specialists cite the quality of Russia's water resources as one of its most urgent problems. Our country uses less than 2 percent of its water resources, yet the overwhelming majority of its water bodies are polluted.

This problem is acknowledged on the highest government levels. The quality of water — both the tap water that flows out of Russians' faucets at home and the water that represents the country's natural wealth — is increasingly a key topic of speeches by leading politicians. During a discussion of environmental safety at the Jan. 28 session of the Security Council (of the Russian Federation), it was noted, "about 40 percent of surface sources and 17 percent of underground sources of drinking water do not meet public health standards and norms..."

Russia's great rivers near major metropolitan areas are suffering the fastest rates of pollution. Because major cities lack treatment facilities, hundreds of millions [sic] of untreated brown water run off into the rivers each year.

Major industrial enterprises that operate on the predatory principle of maximizing profits — even at the price of environmental disaster — play a "leading," but far from honorable role, among polluters. That is the situation, for example, on Lake Samotlor in

РОССИЯ: ВОДА – ВЕЛИКОЕ БОГАТСТВО И ВЕЛИКИЕ ПРОБЛЕМЫ

Россия - великая водная держава. Но и проблемы ее водных объектов велики, тем более что они не решаются десятилетиями. Статистика беспристрастна, и ее вердикты качеству воды в различных регионах России пугают своим однообразием: «загрязнена», «повышенное загрязнение», «очень грязная»...

Россия омывается двумя океанами – Тихим и Северно-Ледовитым, и имеет выход в Атлантический океан через Балтику и Черное море. По территории страны протекает множество всемирно известных рек, которые с полным правом можно именовать «великими»: Волга, Обь, Енисей, Амур. Великие реки России своими бассейнами охватывают свыше 11 млн. кв. км (65%) от общей территории государства. Чистейшей жемчужиной среди богатств России блистает озеро Байкал.

Водное богатство России составляет пятую часть мировых запасов пресной воды. В это же время качество водных ресурсов России специалисты называют одной из наиболее острых проблем. Наша страна использует менее 2% своих водных запасов, в то время как подавляющее количество водных объектов загрязнено...

Проблема эта осознается на самом высоком государственном уровне: качество воды, как той что течет из кранов в домах россиян, так и той, что составляет природное богатство страны, все чаще становится ключевой темой выступлений ведущих политиков. На заседании Совета Безопасности по вопросу обеспечения экологической безопасности России 29 января 2008 г. было отмечено, что «не отвечают санитарным правилам и нормам порядка 40% поверхностных и 17% подземных источников питьевого водоснабжения...».

A critical environmental situation related to oil pollution of ground and surface water has developed near the legendary Lake Samotlor in Siberia, where the international company TNK-BP is extracting oil. By some estimates, the contaminated area is greater than 3,000 ha. A distinct feature of this industrial pollution is its long-term effect on the region, a result of TNK-BP's insignificant and untimely remediation measures. Environmentalists' long-standing claims against the company's Russian management for violation of environmental standards have yielded no results: nothing is being done and the scale of the pollution increases from one year to the next. Regulatory agencies abet this situation, by giving their "tacit consent." Perhaps the only effective method of influencing the polluter here is for the international environmental community to appeal to the British company BP, by pointing out the flagrant disregard of BP's Russian partner for environmental requirements.

Наиболее высокими темпами загрязнение великих российских рек идёт вокруг мегаполисов. Отсутствие очистных сооружений в крупных городах приводит к тому, что ежегодно в реки сбрасываются сотни миллионов неочищенных стоков.

«Ведущая», но далеко не почетная роль среди загрязнителей принадлежит крупным промышленным предприятиям, работающим по хищническому принципу извлечения максимальной прибыли – пусть даже ценой экологической катастрофы. Такова ситуация, к примеру на озере Самотлор в Западной Сибири, где ведет нефтедобычу международная компания ТНК-ВР.

Две российские реки полностью поражены радиацией, так как вынуждены «обслуживать» оборонные предприятия, нарабатывающие

Комментарий к фото

В районе легендарного сибирского озера Самотлор, где сегодня добывает нефть международная компания ТНК-ВР, сложилась критическая экологическая ситуация, связанная с загрязнением нефтью грунтовых и поверхностных вод. По оценкам, общая площадь загрязнения превышает 3000 га. Особенностью данного техногенного загрязнения является его долговременный характер, связанный с незначительностью и несвоевременностью реабилитационных мероприятий, проводимых компанией ТНК-ВР. Многолетние претензии экологов к российскому руководству компании по фактам нарушения экологических норм не дают результатов: меры не предпринимаются и масштабы загрязнения увеличиваются год от года. Надзорные органы попустительствуют этой ситуации, демонстрируя «молчаливое согласие». Едва ли не единственным эффективным способом воздействия на загрязнителя здесь представляется обращение международного экологического сообщества к британской компании ВР с указанием на вопиющие факты игнорирования экологических требований их российскими партнерами.

WATERKEEPERS RUSSIA

The Techa River in the southern Urals Mountains is contaminated by radiation.

Western Siberia, where the international company TNK-BP is extracting oil.

Also, two Russian rivers have been completely contaminated with radiation because they were forced to "serve" defense industries that produce weapons-grade plutonium. The toxic discharges of the mining and chemical facility at Zheleznogorsk (Krasnoyarsk 26) have poisoned the waters of the great "Father Yenisei" for 3,000 kilometers downstream. The contaminated waters of the Techa River, which has suffered for many decades from the operation of the Mayak Production Association (Chelyabinsk Oblast), Russia's largest nuclear plant, flow first into the Iset and then into the Tobol, Irtysh and Ob rivers. This radioactive chain extends for more than 5,000 kilometers. These figures are no exaggeration. The immense scale of this pollution stems from the fact that the offending industries are at the rivers' headwaters. This is a tragic "national trait" for Russia.

Low water quality is first and foremost a social problem, for it holds hostage a large part of the population. The government has a policy on water resources management for drinking water sources that is aimed at the environmentally balanced, sustained development of water services, and the protection and remediation of water bodies. But this policy is not formed on its own. Two key factors have influenced its development in Russia.

First are the problems directly inherited from the USSR, Russia's legacy of its socialist past. They include the radioactive contamination of Russia's rivers mentioned above; the system of dams on the Volga that disrupts the natural reproduction of the fish population (following the construction of the Volga Hydroelectric Station, the spawning area for Russian osetra sturgeon shrank by 80 percent); the thousands of sunken ships in the Volga's waters; and obsolete industrial enterprises that do not meet environmental requirements. These are the scourges of the majority of Russia's water bodies.

Second, the conflicts of "young Russian capitalism." On one hand, the movement has to deal with its socialist "dowry" and on the other, is striving for economic profit, ignoring its own long-term interests. Russian companies that belong to oligarchs are simply off limits to official criticism when it comes to complying with environmental law. The code of en-

оружейный плутоний. Ядовитыми сбросами Горно-химического комбината на протяжении 3000 километров по течению ниже города Железногорска (Красноярска-26) отравлены воды великого «Енисея-батюшки». А из реки Теча, многие десятилетия страдающей от деятельности крупнейшего ядерного предприятия России ПО «Маяк» (Челябинская область), зараженные воды попадают сначала в реку Исеть, затем в Тобол, Иртыш, Обь... Протяженность этой радиоактивной цепи в общей сложности превышает 5000 километров. И эти цифры – не преувеличение. Колоссальные масштабы загрязнений определяются тем, что предприятия-виновники расположены в верховьях течения рек. Это – печальная «национальная особенность» для России.

Низкое качество воды – это, в первую очередь, социальная проблема, ведь в заложниках у нее оказывается большая часть населения. Существует государственная политика в области управления водными ресурсами – источниками питьевой воды, направленная на экологически сбалансированное устойчивое развитие водного хозяйства и сохранение и восстановление природных водных объектов. Но политика эта не складывается сама по себе. На формирование ее в России влияют два ключевых фактора.

Во-первых, это прямое наследие СССР – проблемы, доставшиеся современной России от социалистического прошлого. Это и радиоактивное загрязнение российских рек, о которым уже было упомянуто. И система плотин на реке Волге, нарушающая естественное воспроизводство рыбной популяции (после постройки Волжской ГЭС площадь нерестилищ русского осетра сократилась на 80%!). И тысячи затопленных судов в акватории той же Волги. И устаревшие промышленные предприятия, не отвечающие экологическим требованиям – бич большинства водных объектов России.

Во-вторых, «юный российский капитализм», с одной стороны, вынужденный разбираться с социалистическим «приданым», а с другой – стремящийся к извлечению сиюминутной экономической прибыли, пренебрегая долгосрочными интересами. Российские компании, принадлежащие олигархам, попросту находятся вне зоны официальной критики в части соблюдения требований природоохранного законодательства. Кодекс экологически ответственного поведения, соответствующий общественным требованиям демократических государств, не распространяется на компании, «встроенные» в систему государственной поддержки и обладающие «неприкосновенностью».

Все это необходимо учитывать, выбирая инструменты и методы защиты

vironmentally responsible behavior, conforming to the social norms of democratic countries, does not apply to companies that have been integrated into the system of government support and enjoy (regulatory) immunity.

All this must be taken into account when selecting tools and methods for protecting the environment and influencing polluters. When supporting government environmental initiatives, Russian authorities must show that only the state — by taking clear, principled and steadfast ecological positions — can have any weight in the eyes of the international community of developed countries. This is not just a matter of image and reputation but consequently of the development of harmonious and favorable economic and political relationships between Russia and its partner countries.

Public organizations must point out to the major Russian industrial companies, including those doing business outside Russia, that environmental recklessness is not only unacceptable but also has consequences for their reputation. Waterkeepers Russia intends to contact the business partners of known polluters and, by presenting facts of the polluters' irresponsible attitude toward the environment (especially water), encourage them to avoid contact with the offenders.

One peculiarity for the monitoring of Russia's industrial enterprises is that additional inspections of compliance with environmental law can be initiated only at the request of private citizens. By taking advantage of this tool, Waterkeepers Russia intends to draw the attention of government agencies to the fact that polluting enterprises are breaking the law and to enforce environmental laws by appealing to the courts.

Today, the foundation is suing Energiya Aerospace Corp. for wholesale pollution of Dulev Creek with petroleum products in the town of Korolev outside of Moscow. The claim against the company, which regularly violates environmental laws, is 1.7 billion rubles (more than US$ 70 million).

Waterkeepers Russia is launching activities on the Vyatka River and in the near future will launch the programs on the Baikal, Caspian, Baltic, Volga and other major Russian water bodies.

Waterkeepers Russia is also receiving a multitude of appeals from ordinary Russians who are concerned about water pollution. There is a lot of work ahead! **W**

Russian Waterkeepers hold a press conference in Moscow on a suit against the space-rocket corporation Energy, after 500 tons of oil from one of Energy's boiler-houses flooded the Dulev Stream for 10 kilometers. From left to right are Maxim Shingarkin (Ecology Director), Lyudmila Mitvol (Chairman of the Presidium), Mikhail Mazhirin (President), and Svetlana Tikhomirova and Dmitry Djatlov (Attorneys) of Russian Waterkeepers.

окружающей среды и воздействия на загрязнителей. Поддерживая государственные природоохранные инициативы, российской власти необходимо показать, что лишь государство, занимающее четкие, принципиальные, непоколебимые позиции в сфере экологии может иметь вес в глазах развитого международного сообщества. И речь не только об имидже и репутации, но и, как следствие, о развитии гармоничных и благоприятных экономических и политических взаимоотношений между Россией и странами-партнерами.

Крупным российским промышленным компаниям, проводящим в том числе и активную экономическую деятельность за пределами России, необходимо от лица общественных организаций указать не только на правовую неприемлемость экологической безответственности, но также и на имиджевые последствия. Российский Фонд «Хранители воды» намеревается обратиться к деловым партнерам выявленных компаний-загрязнителей и, приводя факты их безответственного отношения к окружающей среде, особенно к воде, побуждать их отказаться от контактов с компаниями-нарушителями

Особенностью практики контроля деятельности промышленных предприятий в России является то обстоятельство, что дополнительные проверки соблюдения природоохранного законодательства могут быть инициированы только по обращениям граждан. В полной мере используя данный инструмент, российские «Хранители воды» намерены и привлекать внимание государственных органов к фактам незаконной деятельности предприятий-загрязнителей и добиваться соблюдения экологических законов, обращаясь в суд.

Сегодня российским Фондом «Хранители воды» ведется судебное разбирательство с ракетно-космической корпорацией «Энергия», по факту крупномасштабного загрязнения нефтепродуктами ручья Дулев в подмосковном городе Королеве. Сумма иска к компании, регулярно нарушающей требования пророддохранного законодательства, составляет 1,7 миллиардов рублей (более 70 миллионов долларов США). Активная деятельность «Хранителей воды» разворачивается на реке Вятка, в ближайшее время стартуют программы на Байкале, Каспии, Балтике, Волге и других крупнейших водных объектах России. Российские «Хранители воды» также получают множество обращений от рядовых россиян, которые обеспокоены загрязнением водных объектов. Впереди – много работы!..

Директор экологических программ Фонда «Содействия сохран**ению и восстановлению запасов пресной воды «Хранители воды»**

Максим ШИНГАРКИН

Россия

First Russian Waterkeepers Program Launched!

By Vera V. Minina
Environmental Program Coordinator, Waterkeepers Russia

The Russian Vyatka Riverkeepers program in Kirov was launched in April 2008. Program coordinator Grigori Poskrebyshev (environmentalist and author of several environmental programs to preserve the Vyatka) has been actively gathering and analyzing information about environmental problems on the Vyatka River.

In its better days, the Vyatka — which, along with the Kama, springs from the slopes of "Ageyevsky Log" in Udmurtiya — was one Russia's most beautiful lowland rivers, abounding in boggy forests and marshes. But barbarous deforestation (forestry is the main source of income in Kirov Oblast) resulted in catastrophic declines in river and stream levels, which in turn impaired stream conditions and led to the complete disappearance of certain species of fish such as the grayling and Siberian lamprey.

Other once-common Vyatka inhabitants (sterlet, catfish, carp, Siberian white salmon, sneep, sheefish), which are very sensitive to water pollution, are dwindling in population because the river is contaminated by the toxic runoff of certain unprincipled wood processing, chemical and agricultural enterprises.

At the same time, the local inhabitants are doing great harm to the Vyatka River by poaching fish and polluting the river and its banks with trash.

There is no question that the main environmental problem, equally economic and social, is that the local population is uninformed and unaware of the finite nature of natural resources and of the genuine harm that certain hazardous industrial facilities pose to the environment and their health.

Vyatka Riverkeeper Grigori Poskrebyshev

WATERKEEPERS RUSSIA

Первая российская программа Хранителей воды начала свою работу!

Российская программа «Хранители реки Вятки» в городе Кирове начала свою работу в апреле 2008 года. Координатор программы Григорий Поскребышев (эколог, автор многих экологических проектов по сохранению Вятки) активно приступил к сбору и анализу информации относительно экологических проблем на реке Вятке.

В свои лучшие времена Вятка, рождающаяся вместе с Камой из ключей на склонах «Агеевского Лога» в Удмуртии, была одной самых красивых равнинных рек в России, изобилуя хранящими влагу лесами и болотами. Но вследствие варварской вырубки лесов (лесозаготовка - основной источник дохода Кировской области) началось катастрофическое обмеление лесных рек и ручьев, что в свою очередь привело к нарушениям гидрологического режима и полному исчезновению некоторых видов рыб, таких как хариус, сибирская минога.

Другие ранее распространенные обитатели Вятки (стерлядь, сом, карп, нельма, подуст, белорыбица), являясь наиболее чувствительными к загрязнению вод, теряют свою популяцию из-за загрязнения реки токсичными стоками некоторых недобросовестных предприятий лесоперерабатывающей, химической, сельскохозяйственной отрасли.

В тоже время большой урон природе реки Вятки наносят и сами местные жители, промышляющие браконьерской ловлей рыбы и загрязняющие реку и её берега мусором.

Безусловно, что основная экологическая проблема, ровно, как и экономическая и социальная, кроется в непросвещенности, неосведомленности большинства населения относительно ограниченности природных ресурсов и реальном вреде окружающей среде и их здоровью некоторых опасных производств.

Поэтому, мы решили, что основные наши усилия по защите природы реки Вятки будут направлены на просветительскую работу и популяризацию идеи сохранения окружающей среды.

В настоящее время мы готовим лекции, акции, выставки, конкурсы для школьников, и студентов, как для будущих представителей высоких экологических целей и технологий.

We therefore decided that our main efforts to protect the Vyatka River would focus on education and the popularization of the concept of environmental protection. We are now preparing lectures, campaigns, exhibits and contests for school children and students, who represent the future proponents of lofty environmental goals and advanced technologies.

We hope that, equipped with sufficient environmental knowledge, these young people will not follow the barbarous examples of their predecessors such as the destruction of the majority of the sources that replenish the Vyatka within the beautiful natural system of springs along the river bank by the construction of a skiing complex and the open sale in specialized fishing stores of fine-mesh nets that are dangerous to many species of fish. In addition, unauthorized trash dumping and car washing on the riverbanks have also long been contributing to the destruction of the splendid Vyatka River.

Of course, we are not just waiting for a future environmentally responsible generation. We intend to act now, to win more and more supporters with each passing day. Many scientists have responded to the Vyatka Riverkeepers challenges, like Andrei Vasilievich Glushkov MD, a researcher on the effect of drinking water quality in Kirov Oblast on public health, who joined our group as a consultant.

Vyatka "Riverkeeper" Grigori has already collected a database documenting how the Kirovo-Chepetsk Chemical Facility has surpassed the limit for radioactive contamination of the Vyatka's tributaries with its wastewater. In the near future, we are planning with public support to submit his materials to the courts.

We are also researching the past operations of the plant, when it was a nuclear fuel cycle facility that processed huge amounts of radioactive substances to produce enriched uranium. The fact is that the wastes of that hazardous production facility were stockpiled in an underground storage facility in a complex geological area with portions of increased rock fissuring, through which toxic substances can migrate to upper rock strata that are used as water sources.

About 10 years ago local environmentalists began studying the problem of pollution of the soils, water and bottom sediments of Kirov Oblast with radioactive and other toxic waste near the Kirovo-Chepetsk Chemical Facility and declared it an environmental disaster.

At that time, Douglas Campbell, governor of Michigan, actively supported the efforts of environmental activists in Kirov on issues regarding toxic waste processing. Unfortunately, the activists ultimately failed because waste processing projects were not attractive to local businesses and authorities took no interest in these environmental projects.

We hope that now, through our joint efforts, we will finally help local residents defend their constitutional rights to a healthy environment, including clean water. **W**

Мы надеемся, что, обладая достаточными экологическими знаниями, эти молодые люди в будущем не последуют варварским примерам своих предшественников. Например, таким как: уничтожение большинства родников, пополняющих реку Вятку в красивейшем природном родниковом комплексе на берегу реки из-за строительства горнолыжного комплекса; свободная продажа в специализированных магазинах по рыболовству опасных для многих редких рыб мелкоячеистых сетей; несанкционированные свалки мусора и мойка автомобилей на берегу реки также давно уничтожают великолепную природу Вятки.

Конечно, мы не будем только ждать будущее экологически ответственное поколение, а намерены действовать уже сейчас, благо, что наших сторонников с каждым днем становится все больше. На призывы Хранителей Вятки откликнулись многие ученые, например, в качестве консультанта к нам присоединился доктор медицинских наук Глушков Андрей Васильевич - исследователь проблемы влияния качества питьевой воды в Кировской области на здоровье населения.

Хранитель Вятки Григорий уже собрал доказательную базу о радиоактивном сверхнормативном загрязнении Кирово-Чепеским химическим комбинатом притоков Вятки своими сточными водами. В ближайшее будущее, вместе с поддержкой общественности мы собираемся передать собранные материалы в суд.

Также мы занимаемся исследованием прошлой деятельности комбината, когда на нем функционировало производство ядерно-топливного цикла, перерабатывавшего огромные массы радиоактивных веществ, с целью получения обогащённого урана. Дело в том, что отходы этого опасного производства складировались в подземном полигоне, расположенном в сложной геологической зоне с участками повышенной трещивидности пород, когда возможна миграция токсичных веществ в верхние слои, используемые для водоснабжения.

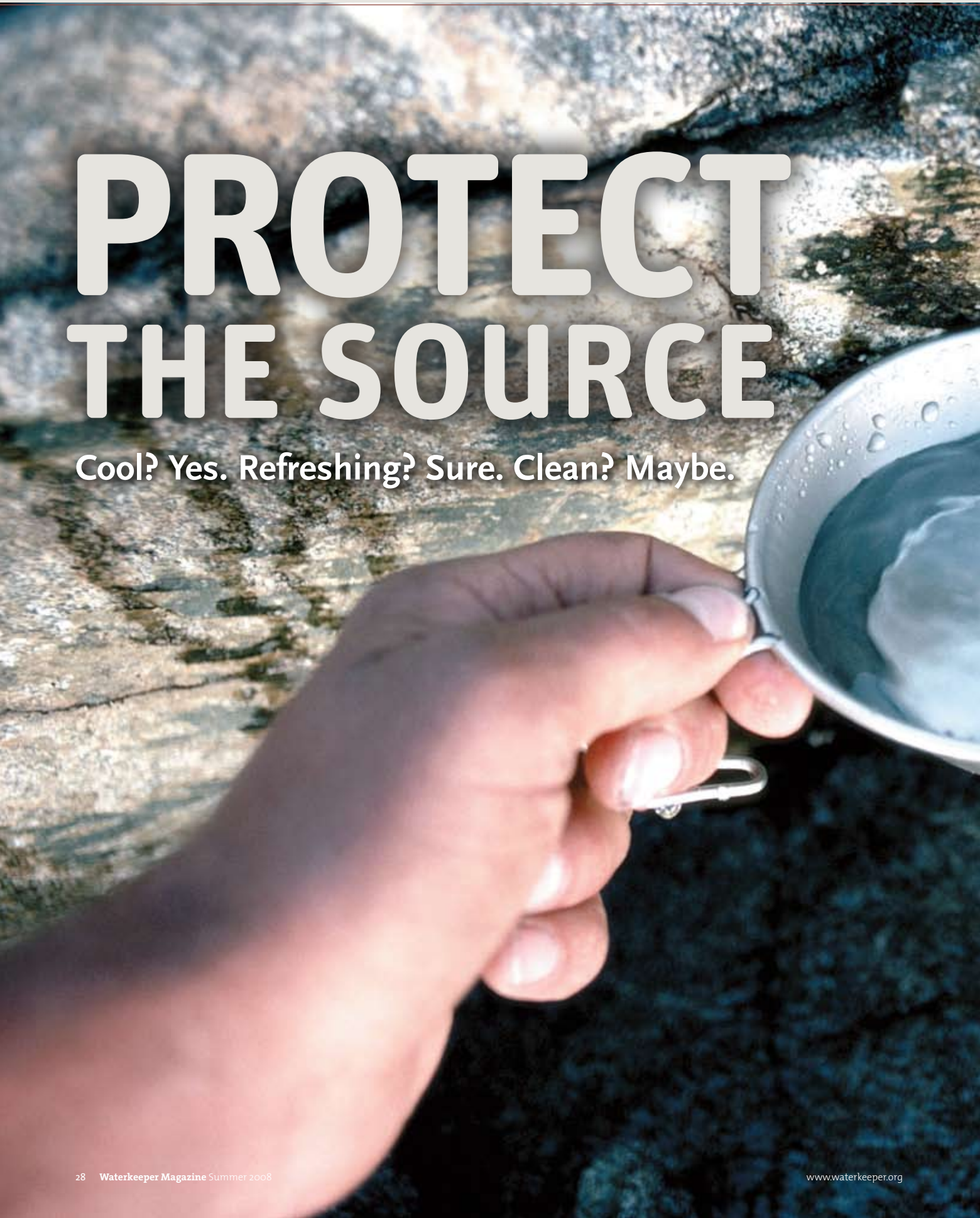
Примерно десять лет назад местные экологи начали исследовать проблему загрязнения почв, вод, донных отложений Кировской области радиоактивными и другими токсичными отходами в районе Кирово-Чепецкого химического комбината и констатировать экологическую катастрофу.

В то время активную информационную поддержку экологическим активистам Кирова по вопросам переработки токсичных отходов оказывал губернатор штата Мичиган Дуглас Гэмбл. К сожалению, активисты не достигли успехов из-за финансовой непривлекательности проектов по переработке отходов для местного бизнеса, и власти также не заинтересовались этими экологическими проектами.

Надеемся, что сейчас, совместными усилиями мы, наконец, поможем местным жителям отстоять свои конституционные права на здоровую окружающую среду, включая чистую воду.

Автор: Вера В. Минина

Координатор экологических программ Фонда «Хранители воды»



PROTECT THE SOURCE

Cool? Yes. Refreshing? Sure. Clean? Maybe.

That cool refreshing drink, your glass of water, is one more pool or puddle in water's flow though the watershed from clouds to surface to the ocean and back to the clouds. The pipes, wells and other systems that remove water from its natural source and transport it to you are a manmade extension of the water cycle.

Despite efforts to treat that water before it reaches your glass, ***what happens in your watershed impacts what makes it to you***.

Though few people are aware of the source of their water, how well that source is protected is a vital part of your health. How well the source is protected defines both how clean the waterway and how safe your drinking water.

It all begins with the source.

We are all downstream. Anything that dumps or spills into our waterways threatens our drinking water. Keeping our rivers, lakes and groundwater clean is the first and best way to keep our water safe for drinking.

Contamination in the Coalfields

By Krissy Kasserman, Youghiogheny Riverkeeper

» SOME OF the most contentious battles in the coalfields and, in fact, anywhere have been fought over water. Is the entitlement to a potable water supply one that should be regarded as a basic human right? This is the source of much debate worldwide — one that while we discuss and ponder, more than 2.5 billion people are living with no regular access to potable water for drinking, bathing and cooking.

Is it surprising then that some of these people live here in the United States, where the majority is fortunate enough to turn on the tap and be rewarded with clean water? Ask any mother who has spent a night or two without potable water whether she thinks water is a basic human right. Ask the owner of a small dairy farm who has to haul enough water for 100 head of cattle or the elderly person who either can't afford to haul water or who can't physically do so. These scenes play out every day in coalfield regions across the country as water supplies are destroyed or lost due to mining activity.

In rural southwestern Pennsylvania, coal remains king — a king that has little regard for his subjects. The coal industry recently embarked on a million-dollar advertising campaign in order to convince us that coal is now "clean and green." Don't be fooled. America's addiction to coal is causing the widespread destruction of drinking water supplies across the coalfields. Nothing about this destruction is clean or green.

The Mountain Watershed Association (MWA), home of the Youghiogheny Riverkeeper, is located in rural Fayette County, Pa., where a very extensive public water system exists but many rural areas are still not served. Residents in these areas rely on private water supplies, specifically springs and wells that are frequently lost due to active coal mining. In addition, countless others suffer ongoing contamination from abandoned coalmines.

Private water supplies are incredibly vulnerable as the Pennsylvania Department of Environmental Protection grants them very few protections and private water supply owners frequently wrestle with mining companies over water loss or degradation and replacement water. The question remains: Can a public water system ever really "replace" the pristine springs and wells that once supplied many families?

The PA DEP believes so, but in this area the public water is also made up of the very same groundwater that is being systematically depleted by the

Tap water from local springs and wells that had been contaminated by mining.

The water drawn from the shallow wells and springs in the area was rich in iron and sulfur, discoloring clothing, fixtures, hair and skin.

MWA helped extend public water supplies to this young boy's neighborhood. Here he is taking his first drink from his family's faucet as they were unable to drink water from their private well.

The expenses and burden of fixing the water supply was ... shifted to Pennsylvania taxpayers and the rural population living in this area.

coal industry. Captured springs and wells make up the majority of the source water for the public water supply as well. When the groundwater is gone, so goes the source water for both private and public water supplies.

Many of the early cities that became today's eastern population centers were founded along the banks of mighty rivers including the Ohio, Mississippi and Potomac. In many rural mountainous areas, there was (and still is) no access to large, reliable sources of surface water. Nonetheless, communities continued to develop, often relying on groundwater to supply homes and small farms. These private water supplies have sustained rural communities for hundreds of years.

Throughout Appalachia, as coal was discovered in and around these communities, a great boom and bust cycle began. Despite the high price that coal is currently fetching, many small coalfield communities are still in the bust period that started when the large deep mines of the early 1900s closed. Newer, mechanized surface and underground mining has done nothing to improve the fate of such communities considering they do not reap the financial benefits from having the minerals torn from beneath their feet. In a classic example of profit over people, a coalfield citizen's environment is sacrificed for what the coal industry would like us to think of as the "greater good," leaving communities poorer, polluted and often without potable water.

In our own watershed, one particular neighborhood consisting of 40 homes had been without adequate potable water since the early 1980s. Six past surface mining operations in proximity to these homes were hydrologically connected to the shallow aquifer that the residents were drawing water from. Extensive blasting in the area had contaminated this aquifer. A study to determine the possibility of developing deeper wells also showed mine drainage contamination. Many of the mines were abandoned and the bond that had been posted was not nearly sufficient to fix the damages to the surface of the land or the underlying aquifers.

The water drawn from the shallow wells and springs in the area was high in iron and sulfur, discoloring clothing, fixtures, hair and skin. It also caused burns to the skin of the young and elderly. Water quantity was also an issue; many springs and wells in the area would dry up completely during the summer. At times, the issue was a choice between being able to drink water or bathe, further compromising one's quality of life.

Families in this area are generally low to moderate income and the area is very rural. Located more than 12 miles from the nearest small town, residents were forced to haul in water for drinking, cooking and bathing. Many traveled great distances to wash clothes in water that wasn't red with iron and were often forced to sponge-bathe or travel to local campgrounds for showers. Families with livestock carried in water from surface streams while residents collected runoff from rain for flushing toilets and watering gardens, a major source of subsistence in this rural area. This lack of water was an incredible hardship for area residents, some of whom had been hauling water since 1979. One family spent an average of $236 a month on water for drinking, cooking and trips to the Laundromat, but was forced to use their contaminated well water for bathing. Residents had organized and petitioned the local water authority for water many times but to no avail as the expansion of public water into rural areas is extremely costly.

Lack of available water created a very dangerous situation for the neighborhood. Volunteer fire

This water tank, dubbed a "water buffalo" in coal country, serves as temporary water supplies for residents who have lost their water. The tanks are generally filled daily with public water from a water supplier.

companies had to haul in water to fight fires. In the past, numerous structure fires resulted in extensive damage to properties due to the lack of available water. For this reason, families paid an extremely high price for homeowner's insurance.

A hydrological review of the area completed by the DEP Bureau of Abandoned Mine Reclamation concluded, "past coal surface mining operations near the project area have adversely impacted local water supplies as to both quantity and quality. At least six such past operations in proximity to the project area have been determined to be hydrologically connected and responsible for documented water supply degradation in this area."

A member of this community approached MWA many years ago. He eventually joined the organization's Board of Directors and currently serves as its Vice President. He was instrumental in organizing the community members to garner support for extending public water to the area. When MWA decided to raise funds for this project, a public meeting was held and more than 70 area residents attended, expressing their need for a better and more reliable water supply in order to protect their health and the health of their community.

Ultimately, MWA raised more than $1 million in funds to extend public water to these 40 families who were desperately in need of it. Much of the money came from the PA Department of Environmental Protection and included the meager $182,000 bond that had been posted on one of the coalmines that had operated in the area. The company forfeited this sum when the site was deemed abandoned. MWA was required to come up with a "local contribution" — provided by a Community Development Block Grant — as a stipulation of receiving state funding.

The public water line installation began in spring of 2006 and was completed in fall of 2007. Upon completion, rumors were that residents were doing more laundry than ever and taking long, hot showers. One community member said he planned to run the bath water to the top and sit in it until the water got cold — an activity many of us take for granted.

This represents a success story for some of the residents of this community. This particular example, however, is one of regulatory failure and it is mirrored in communities throughout the coalfields. Some of the mining pre-dated the Surface Mining Control and Reclamation Act (SMCRA) and thus was not subject to careful review by the regulatory body to determine the ultimate impacts to the hydrology of the area. Had this review been completed, permits should never have been issued in an area with such a fragile supply of source water. The mining that took place after SMCRA was enacted in 1977 represents a failure on the part of the PA DEP not only due to the lack of an adequate hydrological review but also because the coal companies operating in the area were not forced to post sufficient bond. The expenses and burden of fixing the water supply was instead shifted to Pennsylvania taxpayers and the rural population living in this area.

More stringent protections must be developed for the source water that eventually provides for private and public water supplies in the coalfields, and our regulatory bodies must enforce these protections. The widespread depletion and contamination of groundwater is viewed as a "cost of doing business" for the mining industry and must end. Clean drinking water is critical to the health of our citizens and our communities. It is not a luxury to be sacrificed for the profit of any industry in any area, urban or rural. The right of regular access to a potable water supply should be regarded as a basic human right. Society at large must insist on this right until every United States citizen has such access. As consumers of coal-fired electricity, we are all to blame for water loss and contamination in the coalfields. **W**

The Long Road to Protecting Our Drinking Water

By Casi Callaway, Mobile Baykeeper

» ALONG THE southern part of Alabama, from the city of Semmes to the Mississippi state line, runs US-98. Unfortunately known as "Bloody 98," the road was considered dangerously narrow. It also crossed over one end of Big Creek Lake, the primary source of drinking water for Mobile County.

In 1999, the Forestry Commission and the Mobile Area Water & Sewer Service contacted Mobile Baykeeper (then Mobile Bay Watch) about the potential impacts of a road project crossing over Mobile's drinking water supply. At the time, we were involved in a lawsuit against Mobile Area Water & Sewer Service, but we all clearly saw the need to work together to protect our drinking water. We began writing comment letters and closely followed the issue.

In 2004, the Alabama Department of Transportation produced an environmental assessment and consequent "Finding of No Significant Impact" to advance a road improvement for US-98. The Department determined they would upgrade the road by shifting a 10-mile stretch north about a mile and a half. The new route would cross the headwater streams 13 times.

Mobile Baykeeper, the Board of Health, Mobile Area Water & Sewer Service, Forestry Commission and local citizens feared a potentially serious drop in water quality through the road construction, as well as risks from cars, trucks and hazardous materials that will travel the new road. If built improperly, construction could lead to sediments flowing into the streams causing serious problems in the drinking water supply. In addition, the eco-system would be compromised from a degraded waterway.

Sediment and clay run-off damages streams, surrounding wetlands and Big Creek Lake because it accumulates on the bottom of stream and wetland ecosystems, reaching anywhere from a few inches to a few feet. The clay and sediment smothers plants and bottom dwelling creatures that form the base of aquatic food chains. When these important food sources die out, plants and animals such as large fish and birds begin to die out as well. The result could be the devastating loss of many vital ecosystems.

Wetlands naturally help to purify and refresh water — their loss would cause water quality in Big Creek Lake to drop as well. If sediment entered the streams that feed Big Creek Lake, our drinking supply would be negatively impacted and cost the consumer more to clean it. The lake would see damage from a loss of depth because the sediment decreases the storage area for the lake. Cloudiness, or turbidity in the water, is a serious problem that must settle out or it greatly affects the equipment needed to collect the drinking water.

Along Black Creek Lake, culverts were installed during road construction of US-98..

The last impact is from chemicals being used to ensure pathogens or other living contaminants are eliminated from our water supply. Those same chemicals — in combination with the organics in the sediments — are recognized to cause different kinds of cancer. In other words, Mobile Area Water & Sewer Service would have to change its entire treatment process.

We also were very concerned about the impacts to the drinking water supply from road dust and debris, oil, gas and other pollutants from automobiles and hazardous materials potentially

spilled from tankers traveling the road in an accident. All of these pollution sources would harm our drinking water.

Throughout the discussions, Mobile Baykeeper recognized the need for a safer road but remained concerned about these potential effects on Big Creek Lake and surrounding areas. Unwilling to compromise public safety on either front, we requested that an Environmental Impact Statement be completed on the project. As the potential of the road moving through the permitting system moved forward, Mobile Area Water & Sewer Service, their forestry folks and the Board of Health contacted us again. Mobile Area Water & Sewer Service has spent the last several years working to protect the drinking water supply by acquiring land surrounding the lake and its tributaries. We knew the project was moving forward more swiftly when the Department of Transportation filed to condemn and take the service's land. Mobile Area Water & Sewer Service was determining whether or not it was realistic to fight and we encouraged them to do so. They began meeting separately with the Department of Transportation, members of the County Commission and State Legislature to find a workable compromise.

By the end of 2004, they had found several solutions. The Department of Transportation and the county assured Mobile Area Water & Sewer Service and the Board of Health that they would protect the lake with the following safety precautions:

- No new dirt road subdivisions (this was passed as a local bill through the State Legislature);
- No new septic tanks in the Big Creek Lake watershed;
- A better designed road with storm water retention, hazardous materials catchment areas, etc., using a highly recommended and recognized engineer particularly skilled in water quality protections; and
- The development of subdivision regulations for the County.

Mobile Baykeeper was excluded from these discussions mainly because we remained steadfast in our demand for an environmental impact study. When we met with all the parties shortly before Christmas 2004, we were informed that these new regulations would be withdrawn if we continued pressing for the study.

We felt strongly about an environmental impact study because we saw it as a way to make permanent these regulation and legislative changes. Their refusal to do a study was so strong that

If built improperly, construction could lead to sediments flowing into the streams causing serious problems in the water supply.

The culverts, which are about 18 inches higher than the water level of the adjacent wetlands, have caused ponding and restricted water flow.

Mobile Baykeeper, in conjunction with Alabama Rivers Alliance and Southern Environmental Law Center, decided to sue on behalf of citizens of Mobile County based on violations of the National Environment Policy Act.

The Department of Transportation and Mobile Baykeeper began working on a settlement out of court very quickly. After a year of negotiations, the Department agreed to do two environmental studies that would include immediate and long-term impacts of the project, particularly a review of the secondary and cumulative growth expected

from the road and a study of the impacts that such growth would cause. The new measures to protect Big Creek Lake were included in the studies along with a limit on the number of access points on the road and some of the alternative designs that would keep hazardous material from getting into the lake.

Furthermore, the Department of Transportation pledged to create a "working group" that would be composed of citizens and government leaders as a means of opening communication to avoid future lawsuits. Mobile Baykeeper was to make recommendations to the Metropolitan Planning Organization — which coordinates the use of federal funding for transportation projects — and the Alabama Department of Transportation with ways we felt they could avoid future problems. The Department of Transportation also pledged to protect the drinking water resource and environment in future road projects. Mobile Baykeeper, Alabama Rivers Alliance and Southern Environmental Law Center were pleased with the results. We believed that catastrophe had been avoided and that protections were firmly in place to protect the overall quality of life in Mobile County through safer transportation and continued protection of our drinking water.

Construction soon began on the new section of US-98 and with that, our progress came tumbling down. In September 2007, inspections by *Press Register* reporters discovered that the designs and safeguards that the Department of Transportation legally agreed to undertake either failed or were never implemented at all. The most basic run-off controls were absent (i.e. silt fences, hay bales, etc). All along the new road, erosion was out of control and dirt was running freely into streams and wetlands.

We discovered that even "standard practice controls" were not implemented, much less the ones specified in the settlement. For example, the settlement called for 26 million pounds of rock to line drainage ditches. These ditches would catch the flow of water, dirt and sediment, and hold the runoff in retention ponds rather than letting the mud run unchecked into streams. Instead of rock, the department chose to line the ditches with an inexpensive plastic material. The plastic was easily torn and ineffective at directing the flow of mud away, allowing it to flow into streams. The contractors also broke a "17.5-acre rule," a standard rule designed to control erosion and prevent runoff that allows only 17.5 acres of land to be exposed at once. The contractors, with special permission from the Department, exposed 143 acres at one time.

Violations of everything Baykeeper fought to protect were obvious. Many steep grades running downhill into water systems had no erosion control. The Escatawpa River, once deemed "probably the finest undeveloped [pristine] blackwater stream in the nation" by federal officials, had a 2-inch layer of red clay on top of its normally clean white sand riverbed, with deposits reaching 7 miles away from the construction site. At the junction between the Escatawpa and Scarbo Creek,

Mobile Baykeeper staffer Sarah Bohnenstiehl, stands by a drainage pipe, showing the amount of fill dirt that will be used to reach the road level grade.

the normally clear Scarbo had turned the color of chocolate milk. Scarbo Creek, another important source for Big Creek Lake, had no runoff controls at its banks where construction crossed directly over it. Red clay hills ran straight down into the creek, depositing a large amount of clay to its waters. It actually appeared that the Department was using Scarbo to drain the worksite — the very same creek that Baykeeper fought to protect from any runoff whatsoever.

The Department had blatantly violated the terms of the settlement and had little, if any, concern for the environment and Mobile's water supply. Although aware of their shortcomings, they continued building with total disregard for the people of Mobile. Twice they reported that the few runoff controls they had constructed were "overwhelmed" by rainfall, yet did nothing to add more controls to prevent the problem from happening again. The Alabama Department of Environmental Management, claiming to inspect the site regularly, found no problems despite repeated calls from residents living on or near the construction site. In several of their reports, these areas were listed as "E," meaning they were not even evaluated. Only one time prior to the newspaper's stories did an inspector record that on-site erosion, off-site erosion, sedimentation and the discharge of water quality needed improvement. Both the Department of Transportation and Department of Environmental Management said they were unaware of problems as large as the runoff at Scarbo Creek and Escatawpa even after articles depicting the problems were published in the *Press-Register*. When shown photographs of the site, including ones that documented more than two feet of clay deposited in wetlands, they had no comment.

After continued pressure by the *Press-Register*, Baykeeper and the public, the Department was ready to admit their errors in construction and judgment. On Nov. 4, 2007, Mobile was given an official apology by Joe McInnes, director of the Alabama Department of Transportation, who acknowledged that large amounts of sediments had fouled up creeks and wetlands, with unknown consequences to Big Creek Lake. The Department pledged to add nine erosion control employees, along with transferring control of the project to the Montgomery main office. It promised to clean up the damage caused by unchecked erosion, offering to detail a plan defining how they would go about doing so. They also pledged that if water bills rose, the Department would cover the difference so consumers would not pay the price for their mistakes.

Mobile Baykeeper's members and the citizens of Mobile were pleased to hear the Department accept responsibility. Though the credibility of both the Alabama departments of Transportation and Environmental Management had been incredibly damaged, efforts to restore the environment were welcomed. The Department of Environmental Management has neglected to come forward with any message regarding their failure to ensure environmental safety on the project and that continues to send a message that it is not effective at enforcing the permits they grant.

Unfortunately, mere days after the apology was issued, mud continued to flow into the Escatawpa and Scarbo Creek. Heavy machinery continued to be used along streams without any runoff controls; runoff protections were even found heaped on top of a hill instead of installed. The *Press-Register* reported that they visited the site and found evidence that heavy machinery had been used in a creek, a major violation of the environmental laws. Moreover, when reporters appeared, construction workers ceased working and did not continue until the reporters had left. Thus, mud and runoff continued to damage the surrounding streams and wetlands, making its way into Big Creek Lake and causing untold damage. The Department of Transportation had, once again, failed to live up to its word. The agency's credibility took another hit. More importantly, the environment and our quality of life were being endangered again with no end in sight.

Other than the loss of support in the realm of public opinion, the only "punishment" the Department of Transportation has received is a measly $75,000 fine for violations to the Alabama Water Pollution Control Act by the Department of Environmental Management. Mobile Baykeeper believes this course of action to be greatly flawed. The fine is insufficient in ensuring that violations will not occur again (the fine is a mere .18 percent of the project's total budget).

Mobile Baykeeper has fought to protect our drinking water from all possible dangers. Our motto is "Clean Water, Clean Air, Healthy People" and we believe that the water we must most protect is our drinking water. Healthy people must have clean water — the two are inextricably linked. When the quality of our drinking water goes down, the quality of life inevitably goes down as well.

We believe that widening US-98 was necessary — the highway was simply too dangerous. We fought not to stop its construction but to ensure that it was built in the safest location and safest manner with regards to Big Creek Lake. The Alabama departments of Transportation and Environmental Management broke legal agreements and our trust when they failed to protect the lake. We are ready and willing to take all necessary steps to protect our drinking water so that our quality of life remains clean and safe. **W**

Nitrate Contamination in California's Drinking Water Supply

By Linda Sheehan
California Coastkeeper Alliance

Kids play next to Tooleville's well, which provides the community drinking water with levels of nitrate exceeding legal limits. Behind the well lies the Friant-Kern Canal.

» **NEARLY HALF** of Californians rely partially or entirely on groundwater for their drinking water supply. While most of the state is able to provide safe drinking water, many communities (primarily in the poorest areas) must drink contaminated groundwater. For example, in Tulare County — in the heart of California's vast Central Valley growing region — 20 percent of small public water systems are unable to regularly supply safe drinking water due to nitrate contamination. And more than 40 percent of the 181 private wells tested by the State Water Board in 2006 violated nitrate standards. The number of public water systems violating nitrate standards increases significantly each year.

Nitrate contamination in drinking water primarily results from unregulated or under-regulated activities such as fertilizer applications, discharges from animal factories and food processors, and leaking septic systems. At the higher concentrations seen in some drinking water supplies, nitrate can cause stillbirths, infant deaths and cancer in adults.

Unfortunately, nitrate contamination of drinking water supplies disproportionately impacts our smallest and poorest communities, farm labor camps and schools. One example is Tooleville, a community of approximately 350 people located near the city of Exeter in Tulare County. Residents are primarily farm workers with a median household annual income of $16,000. A nonprofit mutual water association provides water to the community from two wells, both of which produce water with nitrate over the Maximum Contaminant Level (MCL). Tooleville residents have tried drilling wells deeper and in the surrounding areas, but cannot locate an aquifer with water under the MCL for nitrate. The Friant-Kern Canal, which carries relatively clean surface water, flows literally a few feet from the system's well. But the community does not have access to that water, nor could it likely afford the treatment and infrastructure necessary to use it without other users to share the costs.

In partnership with Baykeeper, California Coastkeeper Alliance and other allies — including the Community Water Center, Clean Water Action/Fund and the Environmental Justice Coalition for Water — are taking action to address this problem and ensure all Californians enjoy clean water. First, we are taking on the Central Valley Regional Water Quality Control Board's failure to protect these communities through not enforcing their own mandate to protect groundwater from nitrate pollution. Under California law, regional water boards must regulate all discharges — including from irrigated agriculture — to protect all waters of the state, as well as groundwater. But lax regulation, oversight and enforcement in the Central Valley and elsewhere has shifted the burden of controlling nitrate discharges from those who created them — such as corporate farms, animal factories and food processors — to communities least able to shoulder that burden. These groups have filed petitions against the Regional Water Board for failure to adequately regulate irrigated agriculture and dairy facilities in the Central Valley.

Additionally, the Community Water Center works directly with many of these communities in outreach, education, organizing and technical assistance to help communities develop long-term solutions to drinking water problems, access bond funding and other sources of funding and expertise. Currently the center is working with Clean Water Action, the Environmental Justice Coalition for Water and California Rural Legal Assistance Foundation to develop comprehensive programs in the Central Valley and Central Coast to address nitrate pollution and dilapidated infrastructure.

While our poorest communities have borne the brunt of our misguided water policy until now, California's laws give us all a critical opportunity to make the state a national leader in protecting groundwater quality. It is our goal to make that happen so that clean drinking water, a basic human right, is a right available to all. **W**

Michelle Orozco holds a sign saying, "Enough!" in front of the Regional Water Quality Control Board at a press conference to announce a suit against the Board for failure to protect groundwater from the region's 1600 dairy facilities.

Shepherd Bend Mine: Threat to Birmingham Water Supply

By Black Warrior Riverkeeper

NELSON BROOKE

Shepherd Bend on the Black Warrior River's Mulberry Fork.

COURTESY OF ADEM

Mine's boundary in black; pollution outfalls in red; water intake to right of the "b" in "Mulberry."

» **SHEPHERD BEND MINE,** a proposed coal mine along the Black Warrior River's Mulberry Fork, is right across the river from the Birmingham Water Works Board's drinking water intake. Putting a massive 1,773-acre strip mine adjacent to one of Birmingham's major drinking water intakes is ludicrous. This mine proposes 29 wastewater outfalls into the river and its tributaries.

The entity applying for this mine's wastewater discharge permit through the Alabama Department of Environmental Management (ADEM) is Shepherd Bend LLC. Its Managing Member, Donald M. Baxter, is also the Managing Member of Quinton Mining LLC, which violated its discharge permit at another mine in the same area more than 200 times in 2005 and 2006. ADEM's fine was a mere slap on the wrist. Paying ADEM's meager fines is a small cost of doing business compared to the cost of installing proper pollution controls.

There is every reason to believe permit compliance will be an issue at Shepherd Bend Mine as well. When a coal strip mine violates its permit, high amounts of total suspended solids, or muddy water, and heavy metals such as iron, aluminum and manganese, among other pollutants, are discharged. If there is a location where a coal mine should be denied a permit, this is it. Our drinking water is too important.

The Mulberry Fork supplies Birmingham with tens of millions of gallons of water each day. Watershed protection is the key component to a healthy water supply, especially for the land immediately adjacent to the water intake. Once watershed protections are lost and pollution is inevitable, chemical treatment of the water becomes necessary. It is much more costly to treat polluted water than clean water. The Birmingham Water Works is concerned about this mine's potential to pollute our water and raise treatment costs.

Property owners on Shepherd Bend who were listed in the permit application are as follows: Ala-West LLC, the University of Alabama, Dr. Heaton, Soterra LLC, Paul Blalock, Nathaniel Key, Ralph Brasfield, John Hollis and Gail Beaird. The University of Alabama owns a large chunk of the proposed area, believed to be near 1,300 acres. We urge these property owners to consider a use which will be more protective of our drinking water supply and local communities. Many locals see opportunities for community revitalization, embracing the river as an asset. Allowing this mine to destroy a major bend of the river would be a devastating blow to such plans.

Native Americans used the river here for centuries while respecting it and the land that drains to it. There are six known archaeological sites throughout Shepherd Bend. The Alabama Historical Commission has therefore asked for continued study of the site for additional cultural resources prior to disturbance of any kind.

Black Warrior Riverkeeper submitted comments on the ADEM National Pollutant Discharge Elimination System wastewater discharge permit during the public comment period. Our comments included a request for an ADEM public hearing on behalf of our members and more than 50 individuals in the area. We await ADEM's response to our comments, as well as their decision on allowing a hearing where the public can voice concerns. Should a hearing be denied, ADEM will surely give this mine a permit. We are monitoring this mine's progress closely. **W**

Source Water Protection, Not Filtration

By William Wegner, Riverkeeper Staff Scientist & Leila Goldmark, Staff Attorney and Watershed Program Director

A view of the Croton Reservoir from Turkey Mountain in Yorktown, N.Y.

» IN THE interest of protecting human health and preserving freshwater ecosystems, filtration of public drinking water supplies should be considered as a last resort only when an unfiltered water supply poses an imminent threat to public health. Sound watershed protection programs not only safeguard human health and aquatic life but also are vastly more economical than filtration.

Over the last 10 years, New York City has spent $1.3 billion on successful watershed protection programs. In stark contrast, a filtration plant for the Catskill/Delaware system, which provides on average 90 percent of the city's drinking water, would cost ratepayers $10 billion in capital costs plus $365 million in annual operation and maintenance. Costs for the filtration plant currently being built for the city's Croton system, which supplies 10 to 30 percent of the water supply, continue to increase with current estimates from the Independent Budget Office climbing to $2.8 billion.

In addition to being expensive, filtration is not an absolute barrier to contaminants. For example, many pharmaceuticals are not removed during the filtration process. Instead they pass through the filter media and are delivered to the taps of city consumers. Furthermore, some municipalities have reported major outbreaks of waterborne pathogens from filtered water supplies. In 1993, an estimated 400,000 people were infected with Cryptosporidium in Milwaukee's filtered water supply.

Reliance on filtration may also lead system operators to unwisely relax watershed protection efforts under a misconception that source protection is no longer necessary because the water is being filtered before it is delivered to consumers. This concept ignores the need to protect watershed residents and upstream consumers who have wells or make withdrawals from a public system at a point upstream from filtration. This problem is exemplified in the city's heavily developed Croton watershed where a number of communities will continue to receive unfiltered drinking water before it reaches the filtration plant in the Bronx.

Watershed protection programs provide regulatory mechanisms to avert these problems, keeping source water clean so there is no need for pollutant removal. By educating stakeholders and decision-makers, and enhancing protection of surface waters, our communities can supply safe drinking water with the most effective and economical approach. W

Upper Neuse Basin Clean Water Initiative

By Dean Naujoks, Upper Neuse Riverkeeper

» ON OCT. 23, 2006, the City of Raleigh and a coalition of land trust organizations held a press conference on the shores of Falls Lake to announce a new conservation plan called the Upper Neuse Basin Clean Water Initiative. The visionary land acquisition plan seeks to preserve 24,000 acres along critical stream corridors in order to protect water quality for nine Triangle (Raleigh-Durham) area drinking water reservoirs in the Upper Neuse River Basin, including Falls Lake, the second largest drinking water supply in North Carolina.

During the news conference, Raleigh Mayor Charles Meeker credited the Neuse River Foundation for the idea and for encouraging the city to partner with state and local land trusts to protect drinking water supplies for 535,000 people.

The Upper Neuse Basin Clean Water Initiative has since been hailed as a National model for source water protection. Local municipalities and the State of North Carolina have invested millions of dollars to ensure clean drinking water for future generations, but it almost didn't happen.

Two years earlier, on May 18, 2004, the Neuse River Foundation addressed the Raleigh City Council and alerted the city about a dangerous water pollution-trading scheme that posed a threat to Falls Lake, Raleigh's only drinking water supply. An upstream municipality (Butner) recently purchased more than 60,000 lbs. of additional nitrogen capacity (per year) with the intent to expand its wastewater discharge to Falls Lake rather than make needed upgrades to its struggling sewage treatment plant. Compromising a drinking water supply for more than 400,000 people was not an option to Neuse River Foundation, who vowed to fight the plan and made it clear Raleigh needed to do more to protect regional drinking water supplies.

The foundation stated that there are real economic ramifications when we don't take preventative measures to protect our drinking water and urged them to create a source water protection plan to protect water quality upstream from Falls Lake.

Raleigh eventually partnered with Neuse River Foundation and Southern Environmental Law Center to defeat the Butner's pollution trading plan — the largest water pollution trade ever proposed for U.S. waters. Neuse River Foundation later worked with several conservation groups to draft legislation and lobby for the passage of the Safe Drinking Water Protection Act of 2005, en-

"The Upper Neuse Clean Water Initiative is an exciting new partnership effort to protect drinking water quality by conserving land along the streams and wetlands that feed water supply reservoirs. The genesis for the idea began with the Neuse River Foundation's Dean Naujoks, who saw the value of using land preservation to protect water quality, and helped bring together North Carolina land trusts and local governments to pursue a coordinated conservation strategy."

Reid Wilson, Executive Director, Conservation Trust for North Carolina

"The Neuse River Foundation has been of great assistance to the City of Raleigh in the last three years bringing key issues to our attention and in helping resolve environmental problems ... the Riverkeeper suggested the idea of having land trusts acquire stream buffers in the Falls Lake Watershed in order to preserve water quality."

Charles Meeker, Mayor of Raleigh

suring the creation of a nutrient reduction strategy (TMDL) for Falls Lake which is now in the process of being developed.

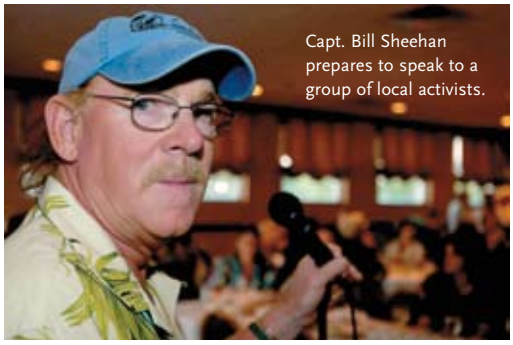
Yet, the recommendations to create an Upper Neuse Basin source water protection plan died quietly in committee. City staff struggled with the idea of the city leading a source water protection plan on such a grand scale. Thankfully, it was being tracked through every stage of the process and was resurrected when Neuse River Foundation proposed an alternative plan to Mayor Meeker in which the city could partner with land trusts. Mayor Meeker liked the idea. As result, he made protecting the cities drinking water his platform for reelection (receiving more than 70 percent of the popular vote). Several land trusts have since taken the lead in developing and implementing the plan, but the idea for the plan became reality only because of the persistence of the foundation.

A major theme for Waterkeepers is the notion of constant vigilance. If the Neuse River Foundation had not tracked the plan for two years as it moved slowly through committee then died, only to be resurrected, it never would have happened. Future generations may never know where clean water in the Upper Neuse Basin Reservoirs comes from, but we know they have their local Riverkeeper to thank. **W**

Falls Lake, North Carolina's largest drinking water supply, is being preserved thanks to the Upper Neuse Basin Clean Water Initiative.

Clean Drinking Water from the Hackensack River

By Bill Sheehan, Hackensack Riverkeeper



Capt. Bill Sheehan prepares to speak to a group of local activists.

» **UNLIKE MOST** rivers in North America, a transnational corporation controls half of the Hackensack River. United Water Resources owns the rights to all water in the river's upper reaches and sells it to nearly 1 million customers in both New York and New Jersey. Founded in 1865 as the Hackensack Water Co. and reorganized in 1995 as United Water New Jersey, the company is a wholly owned subsidiary of the French company Suez, which itself is a subsidiary of Gaz de France, the French government-owned gas and water utility. As you can see, private enterprise has ruled much of our river for a very long time.

For more than 100 years, the water company maintained large tracts of forest to help ensure good water quality. But as time marched on, it began relying more and more on filtration technologies to transform the increasingly turbid water into a clear, drinkable product. By the late 1980s, corporate leadership decided that the forests were no longer needed and began transferring large swaths of them to a spin-off development company called River Vale Realty. This was done despite the fact that development was responsible for degrading the water in the first place.

With the first transfer, local watershed advocates (myself among them) raised holy hell and the water company had a war on its hands. The war ended in 1993 when Environmental Defense brokered an agreement that forced the company to take back most of the woodlands from the developer.

At the same time (and partly in response to what we had gone through), the New Jersey Legislature passed the Watershed Moratorium Act. Designed to protect the state's water supply by protecting watershed buffer lands, the act established a Watershed Review Board. Among other oversights, the board was given the task of reviewing proposals by water purveyors to sell, lease or otherwise transfer any conservation lands supported by ratepayers.

In 2004, Hackensack Riverkeeper learned that United Water had granted an easement to a builder to cross conservation land in the town of River Vale, N.J. Upon receiving word that the NJ Department of Environmental Protection (DEP) had issued a Stream Encroachment Permit to the developer, I immediately called the DEP and spoke with the staffer who processed the permit application. I asked when the easement had been approved by the Watershed Review Board and was stunned to be asked in reply, "What's the Watershed Review Board?" At that point I knew the permit wasn't worth the paper it was written on.

My next call was to then-DEP Commissioner Brad Campbell who, after an internal investigation, personally issued a Notice of Permit Revocation. Having put out that fire, we then petitioned the board for a public hearing regarding the obvious violation of the act. That petition led to a prolonged settlement process during which United Water self-audited all transactions regarding its conservation lands and uncovered no less than 165 violations.

Hackensack Riverkeeper supporters kayak the upper reaches of the watershed.

As you read these words, settlement negotiations are drawing to a close and our watershed is clearly the big winner. As part of the settlement, United Water will soon grant the DEP a conservation easement on all 3,400 acres of watershed buffer land it owns in New Jersey. In addition, the company will establish a $1 million Conservation Trust Fund to help purchase additional conservation lands. Finally, the company has agreed to support our River Cleanup Program and environmental education efforts through corporate sponsorship.

Without question, preserving critically important watershed buffer lands protects drinking water and makes good environmental (and economic) sense — now and always. **W**

The Silent Spring of the 21st Century? Pharmaceuticals in Our Water

By Lisa Rainwater, PhD
Policy Director,
Riverkeeper Inc.

ISTOCK

» IN THE 1960s, Rachel Carson's groundbreaking pronouncement that the pesticide DDT was entering the food chain — thereby threatening the health and well-being of entire species — was a wake-up call to both elected officials and the American public. Carson scientifically linked cancers and genetic mutations to years of rampant, unregulated chemical use on our crops and in our environment. Chemical companies launched massive disinformation campaigns against Carson, fomenting fears of increased disease, and insect and vermin infestation. A President's Science Advisory Committee was formed under the leadership of President John F. Kennedy to examine Carson's findings — and ultimately affirmed her conclusions. The U.S. government eventually banned DDT.

Over the last several decades, a new silent spring has popped onto the global landscape: Copious amounts of pharmaceuticals (controlled and uncontrolled substances) have become standard for people residing in rich and developing nations. New medicines have rapidly entered the marketplace to increase fertility, change women's and men's hormone levels, cure heart disease, stop a raging migraine, increase growth, immunize against potential diseases, and provide a quality of life to people suffering from mental illness. And while technology has improved the lives of so many, there is an environmental and human health price to our pharmaceutically charged citizenry.

Untreated pharmaceutical waste is entering our drinking water supply and our waterways through a variety of sources including wastewater treatment plants, livestock farms and landfills. Humans excrete up to 90 percent of pharmaceuticals ingested and also add to the problem by dumping unused or expired meds down the toilet. Untreated effluent (raw sewage) is a major problem in metropolitan cities such as New York City and has been identified as a contributing factor to the vast increase in endocrine-disrupters entering our environment.

For nearly a decade, alarming reports of "feminized" and "masculinized" (males with female reproductive characteristics and females with male reproductive characteristics) fish, reptiles, birds and mammals have splashed across newspaper headlines around the world including the Thames in London, Jamaica Bay in New York, the Columbia River in Washington State, five out of seven northern European countries' freshwater bodies, and the Great Lakes habitats of Canada. In addition to this "gender-bender" syndrome, there has been a reduction in hormone levels, gamete production and fertilization capabilities. In India, Nepal and Pakistan, the Asian Vulture has crashed 99 percent since the 1980s due to a pain reliever used in livestock and by humans. Many scientists warn that these documented cases in the animal world are the "canary in the coal miner's cage" for human impacts.

While the data continues to pour in, the U.S. government has been asleep at the wheel. Two years ago, a working group on pharmaceuticals in the environment was convened through the White House Office of Science and Technology Policy. The December 2007 deadline to issue a report on its findings came and went. Under a cloak of secrecy and classified documents, the panel has yet to release its findings to the public.

It took the work of Associated Press (AP) investigative reporters to uncover what the Bush Administration has yet to address. A five-month long study conducted by the AP was presented to the world in March 2008. The results were startling. Pharmaceuticals turned up in drinking water supplies of at least 24 major metropolitan areas, including New York City, a city that prides itself on its pristine, unfiltered water from three protected watersheds in the Catskills and Westchester County. The AP's study prompted the U.S. Congress to hold hearings on the presence of drugs in the drinking water of more than 40 million Americans.

Congressional hearings are a good, albeit late, start to a growing environmental and public health problem. The federal government needs to direct the National Academy of Sciences to conduct a study that provides risk assessments for pharmaceuticals in our waters, and measures the potential human and aquatic health effects. In addition, a comprehensive national "take back" prescription drug protocol must be coordinated between federal agencies such as the Food and Drug Administration, the Department of Health, the Drug Enforcement Agency, and the Environmental Protection Agency and state agencies. State and local environmental protection agencies must also routinely test for pharmaceuticals in the public drinking water supply — and release the data to the public.

Alternatives to Toilet Dumping

By Sandy Jensen, Riverkeeper Intern

Medications that are non-hazardous can lawfully be disposed of through a municipal solid waste system. But because the intent of a pharmaceutical take-back program is to keep meds out of the traditional waste stream, the better method is to dispose of medications as hazardous waste. Hazardous waste regulation is incredibly complex, but from a strictly legal standpoint, take-back program coordinators can simply leave the details of handling to a hazardous waste contractor. There is an array of disposal options, so consulting with potential contractors about their practices for disposal of pharmaceutical waste is recommended. Usually, hazardous waste is treated then landfilled or incinerated.

Pharma Drop-Off Programs

In this model, consumers can bring their medications to a continuous drop-off location such as a bin or other secure container. Pharmacies can act as a convenient drop-off site and residents can bring their unwanted meds to the pharmacy at their convenience. A major drawback to this model is that the Drug Enforcement Agency (DEA) usually will not allow controlled substances to be collected in this manner. The DEA has been relatively uncooperative in this regard and in at least three cases, they have refused to grant a waiver to this type of program. In Kendall County, Ill., the drop-off location is the county police department office where they accept unwanted medications including both controlled substances and legend drugs. The police package legend and OTC medications in containers supplied by the Illinois EPA, who will then coordinate pick-up with their HHW contractor. The police department destroys controlled substances the same way they do drugs confiscated in the course of regular law enforcement.

Reverse Distribution

The process of moving manufactured drugs backward through an established supply chain. Reverse distributors take outdated or unwanted pharmaceuticals from DEA retailers such as pharmacies, institutions and wholesalers, and return them to the manufacturer for credit and proper disposal. British Columbia's Medications Return Program is an example of a product stewardship approach. That program is implemented and funded by pharmaceutical brand-owners in cooperation with more than 800 pharmacies. Producer responsibility has taken hold in some countries, but has yet to become a serious movement in the U.S. and is likely to be an uphill battle.

Recycling Programs

One alternative that has potential to keep a large amount of drugs out of the waste stream is drug recycling. A recycling program is a system whereby unused, unopened pharmaceuticals are collected and redistributed to low-income community members or other designated populations. Such a system, however, is fraught with concerns about safety, liability and compensation. For these reasons, most programs that have been implemented have done so only after legislative action established safety standards and addressed liability concerns. California, Wisconsin, Nebraska and Oklahoma have drug-recycling programs. Recycling programs present an opportunity to save millions of Medicaid dollars. One study found that the value of unused drugs in American long-term care facilities amounted to $378 million a year.

IN BRIEF

The drinking water of at least 41 million Americans is **contaminated** with painkillers, antibiotics, anti-convulsants, mood stabilizers and sex hormones.

These contaminants are **ubiquitous** in the environment. They can be found in the rivers, lakes and coastal waters of any place humans live or visit.

Exposure to these substances can cause antibiotic resistance, cancer, mutations, and neurobehavioral and reproductive problems in humans and wildlife.

Much of this pollution comes from **sewage**. Wastewater treatment plants are not designed to remove medications that are excreted or dumped down drains and toilets.

AP PHOTO/SUSAN WALSH

Under fire for EPA inaction, Benjamin Grumbles, US EPA Assistant Administrator for Water, testified on April 15, 2008 before the Senate Transportation, Safety, Infrastructure Security and Water Quality subcommittee hearing on pharmaceutical water pollutants.

Fortunately, many local and state governments are not waiting for the Bush Administration or Congress to act. Across the country, NGOs and decision makers are developing programs to limit pharmaceuticals from entering our waterways and drinking water supply (see sidebar).

Until the country has a standard method of preventing vast quantities of drugs from entering our environment, however, there are new recommendations for consumers to dispose of drugs in a manner that is least likely to impact our water. To properly dispose of medication, keep it in its plastic container, fill it with water and cat litter or sand, place the cap on the bottle, put it into a zip lock plastic bag, then dispose of it in the trash. The other option for discarding medications is to take them to a local hazardous waste facility or hazardous waste clean up day location.

Unlike the DDT of Rachel Carson's generation, the federal government will never ban pharmaceuticals. Nor should they. They are beneficial to the young, the old, the healthy and the ailing. Their legacy, however, is not just how much better one feels or how much longer one lives. Their legacy also lies in the potential long-term ecological changes to our food chain, our immune systems and our ability to reproduce. **W**

Water, Water Everywhere…

By Bruce Reznik
Executive Director, San Diego Coastkeeper
with Australian comparatives by
Stacey Bloomfield, Waterkeepers Australia

» **ENGLISH POET** Samuel Taylor Coleridge's *Rime of the Ancient Mariner* includes the famous verse,

> "Water, water, everywhere,
> Nor any drop to drink."

That is how things appear in Southern California, bordered by the majestic Pacific Ocean. But the reality is that San Diego, like most cities in the arid Southwest, is facing a water crisis. The San Diego region imports 90 percent of its water from outside the region. Despite a growing awareness of this problem, imports have actually gone up over the past eight years, from a low of 83.5 percent in 1999-2000.

Moreover, San Diego is facing a water supply "perfect storm" that threatens the region's nearly 3 million residents. San Diego's main source of water — the Colorado River — is drying up; a recent legal decision to protect an endangered fish in Northern California will result in less water coming to the city from the San Joaquin Delta, its second leading source; the San Diego region is in a near-historic drought that has reduced even the little local water the region usually relies on; and increasing population in the southwest is adding demand for water at the same time supplies are rapidly diminishing.

So, what is being done to address this looming crisis? While San Diego Coastkeeper and other environmental groups have successfully pushed for some local reforms, the answer to this question at this point is, sadly, not nearly enough.

The primary strategy to protect our local water supply must be conservation, which is the most effective, cost-efficient and eco-friendly way to enhance local water supplies. While strides have been made in the region over the past 15 years, water conservation is still more "buzzword" than a regional priority. The City of San Diego's per-household water usage of 173 gallons per day is higher than most other cities in California, such as Los Angeles (141 gallons/day), Long Beach (121 gallons/day) and Santa Barbara (121 gallons/day).

Despite these disconcerting numbers, no city in the region is willing to implement serious conserva-

SAN DIEGO COASTKEEPER

A low impact development roof garden from San Diego City College.

San Diego's North City Water Reclamation Plant.

CITY OF SAN DIEGO

tion measures, and most are wary of even discussing the idea of mandatory conservation. Despite repeated efforts to push cities in the region to expand conservation efforts, water usage actually went up in 2007 to its highest levels in five years, even after the City of San Diego launched its 20-gallon-challenge, an under-funded education effort aimed at having locals voluntarily reduce water usage by 20 gallons per household per day. Nearly 70 percent of residential water use in San Diego County is for irrigation of landscapes, not for sanitation or consumption, further demonstrating that our higher water usage is more choice than necessity.

That said, too many people live in San Diego to be supported by our local water supplies, regardless of how successful conservation efforts are. Conservation, however necessary, is not sufficient to create the extra water that we need in the region.

Coastkeeper has had more success advocating for water recycling — specifically, taking wastewater that would be discharged into the ocean through the Point Loma Wastewater Treatment

Australia Comparative: Water Restrictions

To strengthen our advocacy for tougher conservations measures, our Environmental Scientist and Program Director took the opportunity while on holiday in Melbourne, Australia, to call on the Yarra Riverkeeper and Werribee Riverkeeper and find out how Melbourne tackles its water shortage problems.

Melbourne is now in its 10th year of drought. Water storages are rapidly diminishing and more and more water is being taken out of the Yarra and other rivers to provide drinking water for the city folk and their toilets. Learning not to be a "Wally with water" has slowly become a way of life. Melbournians are reminded daily of how much water they use and the amount of water left in storage. Households are offered free water-efficient showerheads and free shower timers to ensure those showers are kept to the four-minute limit. School children are taught the toilet etiquette: "If it's yellow let it mellow. If it's brown, flush it down."

For Melbournians, water restrictions are part of the fabric of life. They have been used as a tool to curb consumption in times of drought as far back as the 1870s, when a basic restriction was introduced to prevent the use of hoses on gardens. So it was no surprise when in the midst of the longest drought on record, the Victorian Government introduced permanent water saving rules in March 2005, with penalties for breaches. These rules focus on outdoor use of water and place limits on when and how water can be used.

In addition to the permanent water saving rules, a five-stage water restriction regime is also in place. The decision to impose the additional restrictions resides with the Minister for Water and is connected to storage levels, weather forecast and consumption patterns. Melbourne is currently on Stage 3A. This means no garden watering at all on Monday, Thursday and Friday, no lawn watering and car washing, and new pools and spas cannot be filled.

According to data provided by the Government, since moving to Stage 3A on April 1, 2007, Melbournians have reduced water use by 17 percent. Its per capita use is 34 percent lower than

SAN DIEGO COASTKEEPER

Above: Rain Barrel inside of Melbourne's "green building"; all water is treated and reused on-site

Left: Werribee River, Australia

Facility, and treating it to drinking water standards before it is used to recharge our local reservoirs.

In 2005, in response to a legal settlement between the city and a coalition of environmental groups led by San Diego Coastkeeper, San Diego prepared a Water Reuse Study that examined various water recycling options for the region. The option, supported by Coastkeeper, the Surfrider Foundation and Sierra Club, would provide a mix of potable and non-potable uses, including using up to 16 million gallons per day of advanced treated

While strides have been made in the region over the past 15 years, water conservation is still more "buzzword" than a regional priority.

in the mid 1990s. Further, total water consumption in Melbourne from April 1, 2007 to March 31, 2008 was 368 billion litres, compared to 443.5 billion litres from April 1, 2005 to March 31, 2006. During this period, only the Permanent Water Saving Rules were in place and no restrictions.

These water restrictions are targeted at residential users, and only when the levels are as high as 5 or 6 (as they are approaching in Queensland, Australia) do businesses become subject to the mandatory development of internal policies for conservation. The highest levels of water restrictions involve energy "brown outs," as the production of energy is an enormous consumer of precious water resources. When power only runs during certain hours of the day, will the public finally realize how extreme this freshwater crisis is becoming?

As with San Diego, water restrictions are just one step to living in an era of water scarcity. As the Melbourne case study shows, water restrictions help communities rethink their water consumption habits and assist in setting the course for a new water ethos. Melbournians pride themselves on having gardens that require no watering, with signs proclaiming as such in their front yards — quite a paradigm shift from the San Diego addiction to green lawns!

SAN DIEGO COASTKEEPER

Inside storm drain along the Yarra River.

PERMANENT WATER SAVING RULES

The six key Permanent Water Saving Rules are:

- Use manual watering systems only between 8 p.m. and 10 a.m.
- Use automatic watering systems only between 10 p.m. and 10 a.m.
- Fit your hose with a trigger nozzle.
- No hosing paved areas.
- Apply to fill a new pool.
- Non-residential customers who use more than 10ML per annum of potable (drinking) water from an urban supply are required to develop a water management action plan.

STAGE 3A WATER RESTRICTIONS

- Lawns cannot be watered at any time with drinking water.
- Manual watering and dripper systems can only be used between 6 and 8 a.m. on the nominated day (even numbered properties — Saturday and Tuesday/odd numbered properties — Sunday and Wednesday)
- Automatic dripper system can be used on specified days between midnight and 2 a.m.
- No garden watering at all on Monday, Thursday and Friday.
- No car washing unless via an efficient commercial car wash.
- One in four sports grounds can only be watered.
- Industry must complete a water conservation plan.

Australia Comparative: Water Recycling

Diversifying the water supply is one strategy being employed by the Victorian government to provide what they refer to as "water security." In 2002, they set a target of recycling 20 percent of Melbourne's wastewater. In February of this year, the government announced it had already exceeded this target, with some 22 percent of wastewater being recycled for use by market gardeners, industry, sporting grounds, nurseries and new housing developments.

One of Melbourne's two major sewage treatment plants is currently being upgraded to enable treatment of wastewater to tertiary standard. When complete in 2012, it will provide an additional 100GL/yr for uses currently being met by drinking water, such as cooling the dirty, ugly brown coal power plants in the Latrobe Valley (southeast Victorian).

Another proposal being considered by the Victorian Government is to pump all the recycled water all the way back up into the Yarra River and simultaneously extract more natural river water. The Yarra Riverkeeper has been vocal in his opposition to this proposal.

With average flows in the Yarra now only 20 percent of their level of the last 40 years, the Yarra Riverkeeper acknowledged that recycled water was better than no water, but was a definite second choice to natural river water, which provided all the necessary life signals. The Yarra Riverkeeper's lack of enthusiasm for the proposal relates to the government using the proposal as an excuse to take more water out of the Yarra River. Support for the proposal would come if it provided additional water to the Yarra and they took no more water out. Through the "Go Yarra Flow" campaign, the Yarra Riverkeeper is advocating for the Victorian government to honor its commitment to deliver a minimum environmental flow regime for the Yarra and thereby provide a healthy river system for the platypus, the short-finned eel and other creatures that need a healthy Yarra for survival.

water from the city's North City reclamation facility to augment the San Vicente Reservoir.

In 2007, the San Diego City Council voted to move ahead with a pilot project to assess the viability of this mixed-use strategy, even overriding a mayoral veto for the first time ever under a new "Strong Mayor"' form of government. The treated wastewater program will help reduce San Diego's reliance on imported drinking water, safeguard San Diego's water future and decrease sewage discharges to the ocean.

Often derided by opponents who have dubbed the project "toilet to tap," Coastkeeper has supported indirect potable reuse, which meets stringent federal and state drinking water standards.

In addition to moving ahead with the pilot project to assess technological feasibility, the city is also moving ahead with a large-scale community outreach effort to make San Diegans aware that they safely drink "toilet to tap" presently — as 400 million gallons of treated sewage is discharged into the Colorado River before it is treated and becomes drinking water for the region — and that similar potable reuse projects are underway in numerous locales including Virginia, Texas and Arizona; internationally in places like Singapore; and even in San Diego's neighbors to the north, Orange County.

The other water supply option gaining support in the San Diego region is desalination — taking the salt out of ocean water so it can be used as a drinking water source. At this point, though, Coastkeeper and other environmental groups have challenged local desalination projects due to their impacts on the marine environment as well as the carbon footprint of such facilities.

Specifically, Poseidon Resources has proposed building a 50-million-gallon-per-day desalination facility in the City of Carlsbad in northern San Diego County, which uses an astounding 217 gallons of water per household per day. The Poseidon project has drawn broad criticism from the environmental community and fishing organizations for its plans to use an outdated and destructive technology to intake 300 million gallons a day of water from the sensitive Agua Hedionda lagoon. Poseidon plans to use the existing intake infrastructure from the Encina Power Station, which plans to halt its use of ocean water to cool the power plant in response to the Riverkeeper II decision, to convert lagoon water into drinking water.

Coastkeeper and other environmental leaders have also decried the facility's potential impact on climate change. Currently, 19 percent of all energy usage in California goes towards transporting water throughout the state and to customers. It is, therefore, critical for places like San Diego to develop local water supplies in order to reduce greenhouse gas emissions. Yet, ocean desalination is the only water supply option that actually uses more energy than water transfers — 47 percent more energy than transporting water from the San Joaquin Delta.

In the face of tremendous political pressure and overwhelming financial resources, Coastkeeper, Surfrider and their environmental partners have gotten three separate agencies — the California Coastal Commission, California State Lands Commission and San Diego Regional Water Board — to acknowledge the projects shortcomings and begin to put in place requirements that the facility minimize and mitigate its marine and climate impacts. While desalination may play a crucial role in helping to solve San Diego's water crisis, such projects must be undertaken using the most environmentally and energy-friendly technologies to ensure we do not exacerbate other environmental concerns as we address our water shortages.

San Diego, like most cities in the Southwest, has grown far too large for it local water supplies. The impacts of this growth are felt far beyond these cities, though, as water transfers have had devastating impacts on the Colorado River and San Joaquin Delta, and have even contributed to our climate change problem. Creative solutions that will not force us to trade water security for energy and environmental insecurity are needed now to address this problem while there is still time. W

Water: Orange County Toasts Domestics over Imports

By Orange County Coastkeeper/Inland Empire Waterkeeper

» **ONE OF** the telltale signs of a progressive society is the ability to harness water and transport it to the places where people need it most. The city of Alexandria in ancient Egypt, for instance, was built on an intricate system of underground canals and cisterns that made the waters of the Nile accessible to distant neighborhoods.

Southern California was built on the same concept. Like Alexandria, the transport of water from Northern California and the Colorado River led to rapid growth in this semi-arid region. The State Water Project, a system of more than 700 miles of aqueducts and 25 reservoirs, enabled communities to stretch far beyond their centralized water sources.

Today, nearly 24 million people in Southern California depend on imported water to irrigate their lawns, wash their cars, fill their swimming pools and serve a population that continues to make up one of the most rapidly growing regions of the nation.

We continue to grow, but our water sources are diminishing. Conflict at the San Joaquin River Delta over deteriorating levees and the endangered smelt has jeopardized imports from there. Likewise, a growing demand on Colorado River water from Arizona, Nevada and New Mexico has put Southern California water districts in a position to find new sources of water… or to make better use of the water they have.

"With cutbacks on our water supplies, developing new, reliable sources of water is imperative," explains Shivaji Deshmukh, program manager for the Orange County Water District's Groundwater Replenishment System.

Seeking to be more self-sufficient, Orange County this year launched the world's largest advanced water purification project of its kind — proving that in today's world, finding ways to reclaim the water we use is a far more progressive technology than simply developing new ways to move or store it.

"Toilet to Tap"

Developed by the Orange County Water District and the Orange County Sanitation District, the Groundwater Replenishment System takes highly treated sewer water and puts it through a three-step process that includes micofiltration, reverse osmosis and exposure to ultraviolet light with hydrogen peroxide.

STEVE CRISE AND THE AMERICAN WATER WORKS ASSOCIATION (AWWA)

The microfiltration process filters protozoa, bacteria, viruses and other particles out of the water.

JIM RUTZLE/ORANGE COUNTY WATER DISTRICT

Entrance to the Groundwater Replenishment System where sewer water is put through a three-step treatment process.

MARK GREENING/ORANGE COUNTY WATER DISTRICT

The first day Groundwater Replenishment System water arrived in Miller Basin.

The microfiltration process filters protozoa, bacteria, viruses and other particles out of the water through tiny perforated tubes 300 times smaller than a human hair. Through reverse osmosis, the water is pushed under high pressure through membranes that allow only water molecules to pass through. The third step in the process, exposing the purified water to ultraviolet light and hydrogen peroxide, disinfects the water.

The result is near-distilled-quality water that is pumped into lakes in Anaheim, where it seeps into Orange County's groundwater basin, mixing with water from the Santa Ana River and from imported water sources until it is pumped out for drinking water.

Initially, media outlets described the "yuck factor" of what some people described as water taken from "toilet to tap."

Education was a big part of the project, Deshmukh says. The water district knew that in order to make the facility successful, the public had to understand how the process worked.

Members of the public are encouraged to tour the GWR System at 18700 Ward Street in Fountain Valley. Call (714) 378-3333 for tour information and reservations.

"At the start, the idea of recycling wastewater and turning it to drinking water is a shock to the public," he explains. The education process started in the late 1990s, when the district went to elected officials throughout the county to get their support. From there, district officials took their plans to the grassroots level.

"It took a lot of time," Deshmukh says, "but it was worth it."

Today, the Groundwater Replenishment System produces 70 million gallons of purified water a day — enough to serve 500,000 people.

And, processing the water is less costly than importing water from other sources, according to Deshmukh.

Cheaper and Better for the Environment

It costs $520 an acre-foot to process water at the purification facility. It costs about $550 an acre-foot to import water to the region, and that figure is expected to rise.

The Fountain Valley facility eases North and Central Orange County's demand on imported water and boosts the region's water independence. It protects the underground water supply by replenishing Orange County's expanded seawater intrusion basin, an underground barrier of treated water that separates the freshwater basin from intruding ocean water, and blocks the seepage of seawater into the water we drink.

The Groundwater Replenishment System reduces the amount of treated wastewater pumped into the ocean. And, it uses less energy than what is required to transport water from Northern California and the Colorado River.

"This is a process that helps the environment and reduces the possibility of a water crisis in the future," said Garry Brown, executive director of Orange County Coastkeeper, a nonprofit organization dedicated to the protection, preservation and restoration of local watersheds and marine habitats.

Brown served on the original advisory board to the GWR project, which he prefers to describe as a "toilet to aquifer to tap" process. It's a description that emphasizes natural part of the process – the treated water percolating through the soil to the groundwater basin. Brown is also serving as the public member on the State-mandated Technical Advisory Panel that has oversight responsibility over the project. The California Department of Health, the permitting agency, required this Panel to monitor the project during construction and post construction for a period of five years. Coastkeeper is a true supporter of the system.

Even without the natural filtration process of putting the water back into the aquifer, the Groundwater Replenishment System produces pure H_2O. Tours conducted at the facility end with a ceremonial toast – glasses filled with samples of the purified water from the plant.

"The water is so pure," Brown said, "they have to put minerals back into it."

Worldwide Interest

The success of the Groundwater Replenishment System has drawn international attention.

Officials from Pakistan, China, Korea, Japan, Belgium and other countries have traveled to Orange County to get a look at the state-of-the-art facility.

Singapore and Australia have taken on similar projects.

"We literally get on average one international visitor a month," says Deshmukh. "We're so well known throughout the world for water recycling, it's really a neat place to be." W

Safe Drinking Water for All

By Doug Martz, St. Clair Channelkeeper

» **MY STORY** began several years ago with an unlikely, but fortunate encounter. I was at a boat store when I overheard a man talking about chemical companies discharging waste into the St. Clair River. I kept wondering what he was talking about, so I approached him to find out more. The man was from the First Nations community of Walpole Island and they were up against the chemical company Imperial Chemical Industries, which was dumping waste into their nearby river. We walked out of the store together and spoke for nearly three hours. He was an incredibly passionate man and because I listened to every word of his story, he invited me to Walpole Island to meet the community myself.

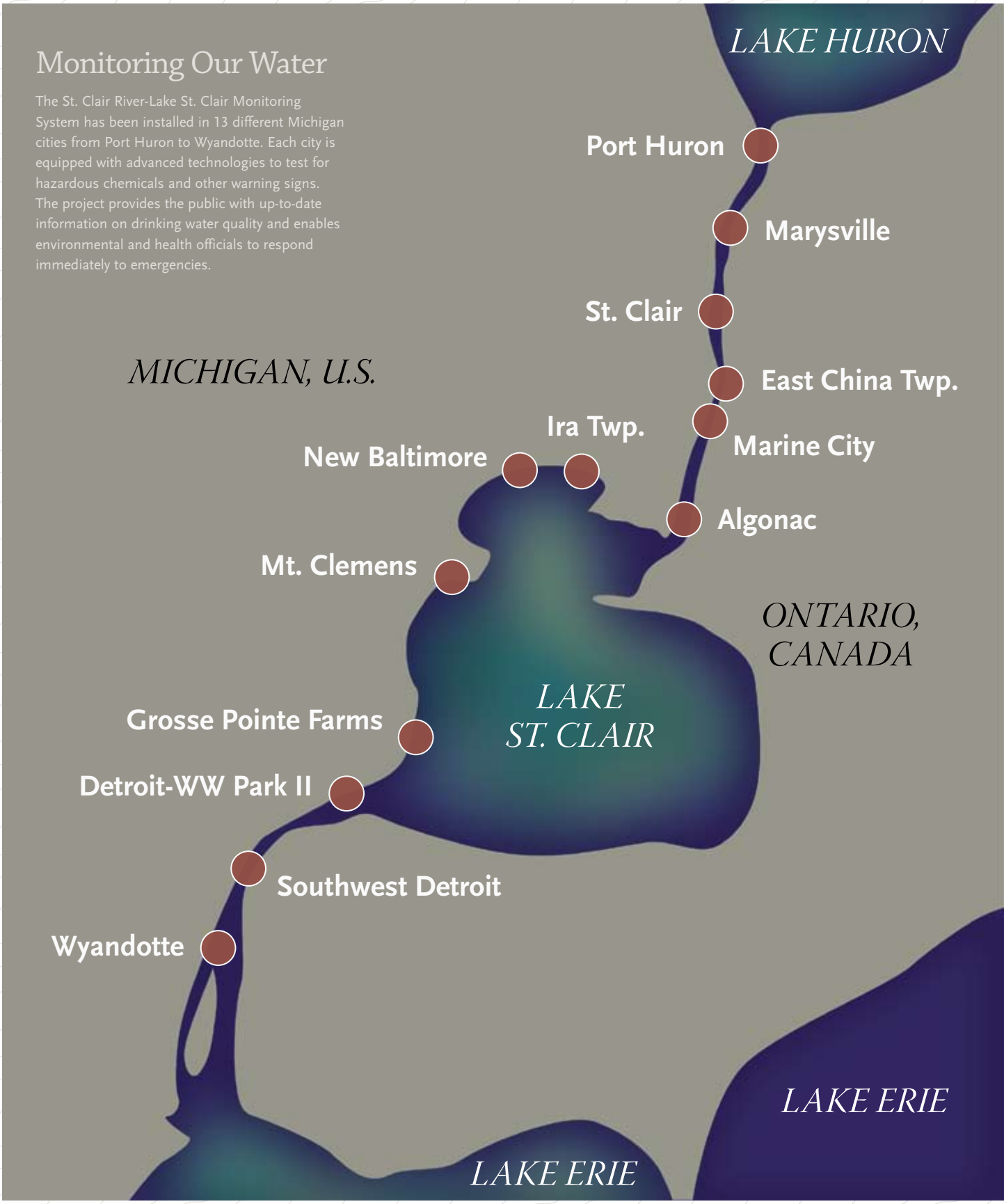
The following week, I rode a ferry from my home in Michigan to Walpole Island, where 100 First Nations people gathered to learn about the chemical waste in their waterway. I listened to story after story of the problems that the community faced. They were suffering a bitter inventory of health problems from autism, attention deficit disorder, birth defects and miscarriages to cancer and diabetes, along with the resultant loss of their culture and traditions. Their story hit home for me. I felt emotionally attached to these people. I told them that I would go back to the other side of the river and do what I could to help them.

Within weeks, Imperial Chemical was due for a hearing. The public would be allowed to comment

From 1986 to 2000, the First Nations recorded 700 chemical spills by Imperial Chemical Industries into St. Clair River.

Monitoring Our Water

The St. Clair River-Lake St. Clair Monitoring System has been installed in 13 different Michigan cities from Port Huron to Wyandotte. Each city is equipped with advanced technologies to test for hazardous chemicals and other warning signs. The project provides the public with up-to-date information on drinking water quality and enables environmental and health officials to respond immediately to emergencies.



on the company's performance and it seemed like a chance to the First Nations of Walpole Island to receive compensation for the calamity they were facing. But as the hearing progressed, the only concession Imperial Chemical was willing to make was to supply the First Nations with bottled water. Members of the First Nations told the company that this was not just about their drinking water. This was about their Mother Earth and all the life that depended on the water for survival; they were not going to compromise. But in the end the company was granted permission by the Canadian government to discharge their chemical waste into the St. Clair River and the First Nations would pay the price.

I was upset at what had transpired, but I knew that our fight had to continue because we could not keep going on like this. And the First Nations were tremendously organized themselves. I learned that every time there was a spill, they recorded it. Since I was also the chairman of our water board and in the position to hold meetings with our drinking water plants operators, I brought members of the First Nations and the water plant operators together for a meeting. And when they shared their data, it was hard to stomach. In 14 years, from 1986 to 2000, the First Nations recorded 700 chemical spills on their river. They had to shut their drinking water valves until the chemicals had gone by and they brought in water tanks to avoid the contaminated water.

Meanwhile, none of our water plant operators had heard about these spills. Their facilities regularly checked for bacteria and pathogens, but not chemicals. The truth was hidden from the public and there was no protection for our water if there was a chemical spill. It was clear that we needed a system to monitor our drinking water. I asked a friend to put together a report detailing the costs and the mechanics of a new drinking water monitoring system for our watershed. The report called for a new system for the 90-mile corridor from Lake Huron to Lake Erie. We had a plan, and I could now concentrate my efforts into convincing our public officials to put the system in place.

Spills and More Spills

I traveled across the state for more than four years, seeking support to build a drinking water monitoring system. Finally, two things happened that broke the camel's back. The first major event took place when the Great Blackout eclipsed the Northeast, the Midwest and the province of Ontario, Canada in August 2003. Many of the companies operating in the industrial area known as "chemical valley," no longer had electricity to operate or cool their product. They began spewing black smoke across the sky, and chemical valley was enveloped in darkness.

During the chaos that ensued from the blackout, Royal Polymers, a Canadian chemical company, dumped 300 pounds of vinyl chloride into the St. Clair River upstream of 13 drinking water plants. Neither the Canadian government nor the public was informed until five days after the spill. When I heard the story, I arranged for the *Detroit News* to write a front-page story about the spill so that the public could be warned about their drinking water. When they were, they were furious. The nearby communities began to question why they were not informed. The Michigan Department of Environmental Quality and the Ministry of the Environment in Canada tried their best to calm everybody down.

Soon after the chemical spill, Royal Polymers was due for a hearing, again giving the public the opportunity to review the company's performance. Royal Polymers attended the hearing with their consultant scientists and I attended with two toxicologists from Wayne State Medical School. The company and their consultants stood at the microphone and assured the public that vinyl chloride would not hurt them. After the company testified, the toxicologists and I took the microphone and told the public about the toxic effects of vinyl chloride, one of the most potent causes of liver cancer known. We essentially took the information that Royal Polymers and the consultants were distributing and threw it out the window.

This information enraged the public. They were ready to go to chemical valley and bulldoze the Royal Polymer facility. They were being kept in the dark and started to bring up spills from the past that they were never warned about. There were the 700 spills that the natives documented that they were never informed about. There were also three American cities that discharged raw sewage upstream of drinking water plants. And then there were two paper mills in Port Huron, Mich., that discharged a chemical into the river that, to this day, is indeterminate. The Ministry of the Environment in Canada and the Michigan Department of Environmental Quality decided that they would start reporting these spills to the public.

It was at this crucial time that a second major event happened. In February 2004, I was at home watching the Super Bowl when suddenly an emergency manager came on television and warned, "Drinking water contaminated. Don't drink it," and then went off the air within seconds. I was wondering what was going on, when again he came on the air and warned, "Drinking water contaminated. Chemical spill." The announcement came on a total of six to eight times and my phone started ringing with people asking me what was happening to our drinking water.

Soon enough I received a fax from Walpole saying that that a Canadian chemical company, Imperial Oil Limited, had just discharged 1,200 to

Today, we have the most sophisticated real-time monitoring system in the United States ... [It] detects 29 specific chemicals and monitors for signs of a chemical spill or a water plant failure.

1,400 barrels of organic chemicals called methyl ethyl ketone and methyl isobutyl ketone into the St. Clair River. The Walpole natives had to close their drinking water plant. Shortly after, I received a call from the Michigan Department of Environmental Quality. They had just closed all the drinking water plants on the St. Clair River all the way down to Mt. Clemens. They sent planes to Lansing, Mich., to test the river, which was ice-covered. The chemicals had already gone under the ice and where they went after that, it was hard to say.

The following week, the environmental agencies held a meeting at Port Huron and the room was even more crowded than after the blackout spills. Both the Canadian Environment Ministry and our Department of Environmental Quality stood up and assured the American citizens that there was no reason to worry about the chemical spill on the American side. They told the American citizens that there is a chemical spill on the Canadian side, it stays on the Canadian side and the water doesn't mix. I was so angry at that point. I stood up and said, "What do you mean the water doesn't mix? I used to fish in that river. If there is a spill on the Canadian side, it impacts us here. The international boundary line does not keep the water from mixing." Anybody who would believe what they were telling us would believe that a cow could jump over the moon. I was tired of being kept in the dark.

Enough is Enough

At this point, I decided that the spills had to stop and the public had to know about their drinking water. I drew up an emergency meeting with my water board and I told them that we needed to do something once and for all. I remember sitting at that meeting and it hit me. There was one federal law that fined boat operators up to $25,000 for throwing bilge waste into our waterways. Now imagine what a company like Imperial Oil Limited would have to pay for spilling 1,200 to 1,400 barrels of organic chemicals.

Our county environmental prosecutor and I drew up a letter demanding that meaningful and immediate action be taken to protect the health of the citizens of Canada, the U.S. and the Walpole Island First Nations and sent it to Imperial Oil Limited and the press. The next thing I knew, television news reporters were in my driveway and radio stations were calling me. We had caused a firestorm and people wanted to know how ordinary citizens dared to take on a huge company like Imperial Oil for endangering our health. Soon the Canadian government fined the chemical companies between $500,000 and $700,000 and changed the protocol on telling us about spills.

We had won big, but we still needed a monitoring system to tell us that our water was safe. I decided that I would get the money to build this system. I lobbied one of our congresswomen who helped us secure $1 million and then some additional funding from St. Clair and Macomb counties. We could monitor from Port Huron to Macomb and down to Mt. Clemens, about half of the distance that we needed to monitor.

While we were securing funds to build the system, an official from the Michigan Department of Environmental Quality was telling me that what I wanted was impossible, that the technology did not even exist. But we proved him wrong right then and there. I met a woman who told me about a state-of-the-art drinking water monitoring system that was installed in Cincinnati, Ohio, on the Ohio River after a tetrachloride spill closed every drinking water intake on the river and affected seven states. We sent our water plant operators, health department officials and state environmental agency representative to the Ohio River to learn more. When they saw it for themselves, they could not deny what we were saying all along and helped secure the final funding we needed for the entire system.

Today, we have the most sophisticated real-time monitoring system in the United States. Our new drinking water monitoring system is almost entirely installed and now measures water quality in 14 different Michigan cities from Port Huron to the city of Wyandotte, just south of Detroit. The system detects 29 specific chemicals and monitors for signs of a chemical spill or a water plant failure. We can identify hydrocarbons from gasoline and diesel fuel to oil; organic compounds from benzene and xylene to vinyl chloride; along with physical properties of water like pH, turbidity, temperature and dissolved solids.

The best part of the system is that it is not just me who can find out about the state of our drinking water — it's the entire public. Up until now, the only monitoring system we had on our river was owned by the chemical industry. That's like the fox watching the henhouse. But this system has put the information back into citizen hands so that we know that the water we are drinking is safe. Today, I or any other citizen can turn on the computer and look at the state of our entire watershed without even getting into a boat. This means that we can take the energy that we used to prove that our water was contaminated and put it into action and advocacy.

What I want people to know is that these things are possible and that they can be done. I had to stop listening to the government agencies that told me that it was impossible to monitor our water to ensure our health. I had to look past that and really fight for what our citizens needed. If I was able to do this in our watershed just downstream of one of North America's most industrialized zones, anyone can. And if we all truly believe this, then we really can have safe drinking water for all. W

»the way FORWARD

Blue Covenant

» **ACCORDING TO** Merriam-Webster, the word covenant is a "written agreement or promise usually under seal between two or more parties especially for the performance of some action."

When it comes to our drinking water, those two parties are the people and their governments. The global water crisis has brought to the surface the need for a united front between citizens of the world and those who have influence over how our water is cared for. In an effort to bring those parties together, Maude Barlow, national chairperson for the Council of Canadians, proposes a "Blue Covenant" that essentially affirms the entitlement of clean water and encourages governments to protect our water supplies. An insightful and innovative step in preserving our water supply, this pledge is one step in ensuring this basic right for all humanity.

Water for Life, Water for All

By Maude Barlow, National Chairperson, Council of Canadians

» **THE GLOBAL** drinking water crisis has a solution if humanity can find the political will. We need a "Blue Covenant" from people and their governments that recognizes the right of the earth and of other species to clean water and pledges to protect and conserve the world's water supplies for all time. This means we must take action in four areas.

SOURCE PROTECTION

First, we must stop polluting our surface and groundwater sources, and we must back up this intention with strict legislation. Martin Luther King Jr. said, "It may be true that the law cannot change the heart but it can restrain the heartless." We must put a stop to the industrial toxic dumping poisoning our waterways. Legislation should also include penalties for domestic corporations that pollute in foreign countries. Water abuse in oil and methane gas production must stop. Consumers need to switch to environmentally friendly cleaning products. All sewage must be properly treated and aging infrastructure repaired. Food and Water Watch is calling for a dedicated federal Clean Water Trust Fund to rebuild infrastructure and halt the many sewage spills now leaking from aging pipes across the United States. The harm to water of industrial and chemical-based agriculture is well documented as well. Today, farmers around the world use six times more pesticides than they did 50 years ago. We need a "Blue Revolution" in agriculture to get "more crop per drop" and a cessation of the mass use of chemicals to grow food. Finally, destruction of forests and wetlands — the lungs and kidneys of our freshwater — must stop. Water does not exist in isolation from healthy ecosystems and needs forests and wetlands as much as forests and wetlands need water to survive.

ISTOCKPHOTOS.COM

CONSERVATION

Second, we must conserve water everywhere, essentially using every drop of water twice. Household conservation methods include low-flow showerheads, dishwashers and washing machines, low-flush toilets, conversion of grass lawns to rock gardens, and capturing tap water and rainwater. Water guzzling indulgences such as back-yard swimming pools, down hill skiing (an acre of artificial snow takes as much as one million gallons of water to make) and golf (U.S. golf course irrigation consumes enough water every day to satisfy the needs of two-thirds of the American population) must be cut back. Farmers must re-learn the lessons of a sustainable food production system, which would include the use of drip irrigation instead of flood irrigation. We must say no to water-guzzling industrial bio fuel farming (which uses almost 400 gallons of water to produce one gallon of ethanol) and is heavily subsidized by many governments. The whole system of food exports has to be measured by its effect on local water sources and virtual water trade, the water embedded in a commodity that is then exported out of the watershed. The U.S. is the biggest virtual water exporter in the world, despite the serious water shortages in many states. Every day, one-third of domestic water use is exported out of the country in commodity trading, often controlled by big agribusiness companies.

PHOTOS.COM

ISTOCKPHOTOS.COM

GROUNDWATER MANAGEMENT

Around the world, as humans have polluted surface water, we are mining groundwater far faster than nature can replenish it. Bore well pumping is removing too much water from the stressed Great Lakes and groundwater is being pumped so hard in Florida, large sinkholes are swallowing houses and even shopping centers. The U.S. now depends on groundwater for 50 percent of daily water use and groundwater dependency is much higher in other parts of the world. Our unhealthy collective addiction to bottled water must end. Humans put 50 billion gallons (100 billion litres) of water in plastic bottles around the world last year, 95 percent of which were not recycled. Simply put, we cannot continue to mine groundwater supplies at a rate greater than natural recharge. If we do, there will not be enough water for the next generation. Extractions cannot exceed recharge just as a bank account cannot be drawn down without new deposits. Governments everywhere must undertake intensive research into their groundwater supplies and regulate groundwater takings before their underground reservoirs are gone and legislate to protect these vital water sources. In May, Vermont adopted an important groundwater protection law that extends the public trust doctrine to the state's groundwater. No one person or company owns water any longer; rather, it belongs to all the citizens of Vermont. Furthermore, in times of shortage, there will be a water-use priority given to drinking water and food production over water for commercial purposes.

WATERSHED RESTORATION

The final vital step is the restoration of watersheds and the protection of ecosystems. Slovakian scientist Michal Kravcik and colleagues have done groundbreaking work showing that our collective abuse of water is a vital and little understood factor in climate change. They warn that, with time, our current behaviour will completely destroy the hydrologic cycle. They argue that the only solution is the massive restoration of watersheds. Bring water back into parched landscapes. Return water that has disappeared by retaining as much rainwater as possible within ecosystems so that water can permeate the soil, replenish groundwater systems and return to the atmosphere to regulate temperatures and renew the hydrologic cycle. All human, industrial and agricultural activity must conform to this imperative, a project that could also employ millions and alleviate poverty. Our cities must be ringed with green conservation zones as we restore forests and wetlands. It is necessary to create the conditions that allow rainwater to remain in local watersheds. This means restoring the natural spaces where rainwater can fall and where water can flow. Water retention can be carried out at all levels: roof gardens in family homes and office buildings; urban planning that allows rainwater to be captured and returned to the earth; water harvesting in food production; capturing daily water discharge and returning it clean to the land, not to the rising oceans. Many examples abound, such as the New Mexican "Acequia" system, which uses an ancient natural ditch irrigation tradition to distribute water. The International Rainwater Harvesting Alliance works globally to promote sustainable rainwater harvesting programs. Simply put, the water in the hydrologic cycle will provide for us forever if we care for it and allow the earth to renew it.

PHOTOS.COM

A New Water Narrative

For these vital steps to be taken however, we humans will have to adopt more sustainable economic and trade policies than those that currently dominate in most of the world. The tenets of economic globalization promote head-to-head nation-state competition, water-guzzling export oriented agriculture production and growth at all cost. The late American environmentalist Edward Abbey said that growth for the sake of growth is the ideology of

Maude Barlow chairs the boards of Food and Water Watch in the U.S. and the Council of Canadians in Canada. Her latest book is *Blue Covenant, The Global Water Crisis and the Coming Battle for the Right to Water*, published by New Press.

the cancer cell; it must turn on its host to survive. The earth's carrying capacity is full. We cannot add more to it. It is time to give back to nature what we have taken from it. This will mean that all trade and economic policies must be tested against their impact on water and the environment and emphasis will have to be placed on more local and sustainable food production. We will likely have to reduce the virtual trade in water and ban or limit the mass movement of water out of watersheds and aquifers by pipeline.

As well, a "Blue Covenant" must include a pledge from the wealthy to the poor for water justice. Dirty water is the No. 1 killer of children around the world. Water apartheid is the single greatest symbol of a class divided world. Simply put, if their parents had money to buy clean water, these children would not be dying. Water must be seen as a human right available to all, not a commodity to be sold to those who can afford it and denied to those who cannot. What is needed now is binding law at all levels of government, including the UN, to codify that states have the obligation to deliver sufficient, safe, accessible and affordable water to their citizens as a public service. A United Nations Covenant would set the framework of water as a social and cultural asset and establish the indispensable legal groundwork for a just system of distribution. It would serve as a common, coherent body of rules for all nations and clarify that it is the role of the state to provide water to all of its citizens. Such a covenant would also safeguard already accepted human rights and environmental principles in other treaties and conventions.

A new water narrative would marry the need to protect and conserve water everywhere with the right of all people and other species to clean drinking water. Water for life, water for all — it must be so. W

CALL TO ACTION

Every drop counts! You can make a difference in protecting our water supplies. Use the following tips to act.

State and Federal Action

Call and write your legislators asking them to devote more money to the Clean Water Act and Safe Drinking Water Act State Revolving Funds, which finance upgrades to aging infrastructure, source protection and pollution prevention. Visit www.congress.org to find your elected officials.

Local Motion

Encourage your municipality to provide incentives for water conservation and to seek sustainable sources of water for your community. For ideas and tools, check out www.waterwiser.org.

Get involved with your local planning, zoning and community action boards to preserve green space, protect flood plains and incorporate environmental site design into new and re- development projects to reduce water use and waste. Visit www.cwp.org for help.

Insist that your drinking water supplier provide your community with legally required, detailed and accurate right-to-know reports about the quality of your drinking water. For more information, go to www.crtk.org/drinkingwater.cfm.

Individual Responsibility

Never flush medicines or other hazardous waste down the toilet — they can pollute drinking water supplies and the environment. Search for local hazardous waste collection facilities at www.earth911.org.

Conserve water. Check out www.epa.gov/watersense to find a list of certified water-saving (and money-saving!) products.

Maintain a green yard with native vegetation, trees and shrubs to reduce the need for irrigation and polluting pesticides and fertilizers. Go to www.wildflower.org to find what's right for your location.

Use a rain barrel to collect and store rainwater and roof runoff for watering your yard and garden instead of using potable drinking water. Visit www.lid-stormwater.net/homedesign.htm for more ideas.

Join your local Waterkeeper program at www.waterkeeper.org.

MacGillivray Freeman's

Grand Canyon Adventure

River at Risk

Presented by Teva

Now Playing in Select IMAX® Theatres and IMAX 3D Theatres Worldwide

Proudly Supported by KOHLER

Narrated by Robert Redford

Featuring Songs and Music by Dave Matthews Band

Musical Score Composed and Arranged by Steve Wood and Stefan Lessard

Produced by MacGillivray Freeman Films Educational Foundation in association with Waterkeeper Alliance and Museum Film Network

Companion Photo Book available from Earth Aware Editions

www.grandcanyonadventurefilm.com

Soundtrack available on RCA BMG

Outside magazine

Waterkeeper® Alliance

EXHIBITORS IN THE U.S. AND CANADA

Austin, TX	Texas State History Museum
Atlanta, GA	Fernbank Museum of Natural History
Birmingham, AL	McWane Science Center
Boston, MA	Museum of Science
Boston, MA	New England Aquarium
Branson, MO	Ozarks Discovery IMAX Theater
Chattanooga, TN	Tennessee Aquarium
Chicago, IL	Museum of Science & Industry
Cincinnati, OH	Cincinnati Museum Center
Davenport, IA	Putnam Museum
Des Moines, IA	Science Center of Iowa
Detroit, MI	Detroit Science Center
Duluth, MN	Duluth Entertainment Convention Center
Ft. Lauderdale, FL	Museum of Discovery & Science
Galveston, TX	Moody Gardens
Hampton, VA	Virginia Air & Space Center
Harrisburg, PA	Whitaker Center for Science & the Arts
Houston, TX	Houston Museum of Natural Science
Hutchinson, KS	Kansas Cosmosphere & Space Center
Louisville, KY	Louisville Science Center
Lubbock, TX	Science Spectrum
Milwaukee, WI	Milwaukee Public Museum
Myrtle Beach, SC	IMAX 3D Theatre Myrtle Beach
Oklahoma City, OK	Science Museum Oklahoma
Philadelphia, PA	Franklin Institute
Phoenix, AZ	Arizona Science Center
Portland, OR	Oregon Museum of Science & Industry
Raleigh, NC	Marbles Kids Museum
Richmond, VA	Science Museum of Virginia
Sacramento, CA	Esquire IMAX Theatre
San Diego, CA	Reuben H Fleet Science Center
Seattle, WA	Pacific Science Center
Shreveport, LA	Sci-Port Discovery Center
St. Augustine, FL	World Golf Village
Tampa, FL	Museum of Science & Industry
Tempe, AZ	IMAX Theatre Arizona Mills
Edmonton, Alberta	Telus World of Science
Hull, Ottowa	Canadian Museum of Civilization
Montreal, Quebec	Old Port
Regina, Saskatchewan	Saskatchewan Science Centre
Sudbury, Ontario	Science North
Vancouver, B.C.	Science World
Winnipeg, Manitoba	IMAX Theatre


Ganymede The Waterkeeper
Story: Eddie Scher & Jeff Gomez
Art: Jeff Albrecht Studios & Chrysoula Artemis
Lettering: Scott O. Brown
Editor: Eddie Scher
Production: Starlight Runner Entertainment
Ganymede created by Jeff Gomez & Severk Dicupé
"Mercury Rising" Part IV: Finale
THE LOUISIANA WETLANDS, MOMENTS AFTER THE WATERKEEPER WAS SHOT DOWN BY HIS STEPBROTHER HERMES.
WH-WHY HAS CELESTE SENT ME HERE?
PROBABLY TO GET YOU OUT OF HER HAIR.
MY BROTHER...HE IS TOO POWERFUL.
THAT MAY BE SO, BUT LIKE YOU HE IS BLIND TO WHAT IS ALL AROUND US. ACT QUICKLY, WATERKEEPER...
...REMIND HIM.
SHHOOOM
VERY... QUICKLY...
THE OFFICE OF THE ATTORNEY GENERAL.
IT'S ALL IN THERE, SIR -- CLEAR EVIDENCE THAT SUCIAN IS A HABITUAL CRIMINAL ORGANIZATION. THEY MUST NOW BE PROSECUTED!
THIS IS BIG, CELESTE -- AND IT MIGHT JUST WORK.
AND WHAT ABOUT THE GOVERNOR?
THE MEDIA WILL TAKE CARE OF THAT.
YOU ARE BEATEN, GANYMEDE.
SPEAK TO ME, THAT I MIGHT HEAR YOUR FINAL WORDS ON MY MP3 PLAYER FOR CENTURIES TO COME!


BROTHER -- LOOK AROUND YOU. TELL ME WHAT YOU SEE.
THIS PLACE... IT IS FAMILIAR.
YES, BROTHER, LIKE THE GREAT SWAMP AT THE FOOT OF MOUNT OLYMPUS, WHERE WE TROMPED AS CHILDREN.
A FAR CRY FROM YOUR BOARDROOM AT SUCIAN?
I HAVE BEEN A FOOL.
YES, BUT WE ARE ONLY GODS. AS CELESTE SWAN TELLS ME, NOBODY IS PERFECT.
AMEN TO THAT.
TODAY THE STATE HAS FILED CHARGES AGAINST SUCIAN UNLIMITED THAT WILL END ITS REIGN OF ENVIRONMENTAL TERROR ONCE AND FOR ALL, AND BRING JUSTICE TO THOSE WHO HAVE FLAUNTED THE LAW.
CELESTE -- HOW COULD YOU HAVE KNOWN TO SEND ME TO THAT PLACE?
I KNOW WHERE TRUTH AND POWER LAY, GANYMEDE. I ALSO KNOW THE BEAUTY OF THE SWAMPS OF OLYMPUS, NYSSA AND ASGARD...
...MY BROTHER.
THE END.
THE WATERKEEPER LIQUID JUSTICE THE MOTION VIDEO, WATCH IT NOW AT: WWW.WATERKEEPER.ORG

On The Water

With Rosalie Winard

Rosalie Winard has traveled the country taking pictures of large birds of the wetlands from Florida to California, Louisiana to North Dakota. Her remarkable portraits are the subject of a national traveling exhibition and book, *Wild Birds of the American Wetlands* (May/Earth Day; Welcome Books). Her lyrical images are punctuated with an ethereal palette of white, gray and black and are alight with Winard's passion for the avian world and its endangered habitat.

EPA Ordered Back to the Drawing Board to Control Power Plant Mercury Emissions

Although a link between coal-fired power plant mercury emissions and mercury found in freshwater fish has been established, the EPA under President George W. Bush refuses to control these emissions.

The time to reclaim our government and wrest control of the EPA from self-interested and improper industry influence is fast approaching. We must rid EPA of the industry officials who now skulk through the halls and sit at the very desks of an agency that was created to protect the environment and public health. We must put the wretched lack of environmental leadership of the past seven and a half years behind us and demand that EPA re-establish its stated mission "to protect human health and the environment" instead of safeguarding the profits of corporate polluters. And nowhere is there a better opportunity for the agency to start to regain its lost integrity and once more earn the trust of the American people than with the rewriting of the power plant mercury rules.

On Feb. 8, the United States Court of Appeals for the District of Columbia handed down a scathing opinion against the Environmental Protection Agency, vacating an anemic, industry-scripted Clean Air Act mercury non-control scheme. EPA's failed plan would have granted the coal-fired energy companies free rein to continue to poison our waterways and communities with harmful amounts of mercury for decades to come.

The court's decision was the latest in a long string of courtroom defeats for Bush's rabidly anti-environmental policies. Sadly, as more and more of EPA's improper regulatory practices come to light, it has become abundantly clear that it's not EPA's desires that are being fulfilled by its several illegal rulemakings, but those of the polluting industries.

U.S. coal-fired power plants are the single largest source of airborne mercury in the country, spewing nearly 50 tons of this deadly poison into the air and our local watersheds each year. Several studies have shown that as much as 70 percent of these toxic emissions are ending up in local waterways and fish. The pre-Bush EPA concluded that there was a link between coal-fired power plant mercury emissions and mercury found in freshwater fish. Yet this EPA steadfastly refuses to properly control these emissions.

Today, communities across the country are paying the price of EPA's and industry's irresponsible actions. Mercury fish advisories blanket significant portions of our streams, rivers and lakes with 48 states warning large segments of the population to avoid eating many species of fish because of high mercury levels. For 19 of these states, the warning is statewide.

EPA was under a legal mandate to force this industry to control these dangerous emissions with the best technology available. Proven, affordable mercury control systems like sorbent injection have consistently shown 90% reductions in emissions, yet EPA has jumped through elaborate and illegal hoops to avoid regulating the industry. With the Court's February ruling, EPA is forced to go back to the drawing board and write a mercury control rule that truly complies with the law and protects the American people from mercury poisoning.

You can help make sure this happens by:

- Writing the EPA and demanding that they get it right this time; and
- Calling your elected representatives and asking them to carefully monitor EPA's rewriting of the mercury rule.

It's your government, your EPA. It's time to take it back. W

IN MOM WE TRUST.

USDA ORGANIC

POWER TO MOMS! When it comes to family, Mom gets real protective. She knows our milk is produced without antibiotics, synthetic hormones or pesticides, and it comes from family-owned farms. Our cows are treated humanely and graze in organic pastures. And mom knows we consistently exceed USDA organic standards—not because we have to, but because we have families, too.

www.organicvalley.coop