

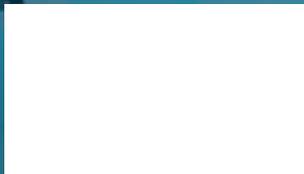
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Movement Now
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India's and China's showdown in the Himalayas



The creek at the center of the world



Baja's natural beauty vs. the beast of overdevelopment

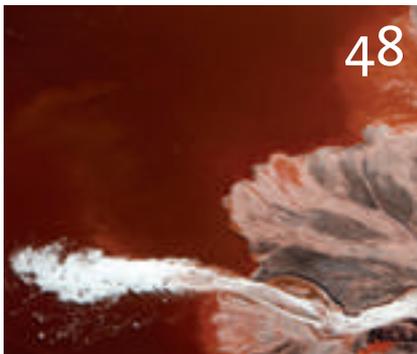
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Letter from the President

Robert F. Kennedy, Jr.

From Concord to Crotonville

This is a landmark year for Waterkeeper Alliance—our 10th anniversary. Ten years ago—in June 1999—some thirty-five Waterkeeper organizations met on Peconic Bay in New York to found Waterkeeper Alliance in order to better support each other and speak with a single, authoritative voice on local, national and international environmental issues.

But the Alliance's story started more than three decades earlier—in the village of Crotonville, 30 miles north of New York City on the east bank of the Hudson River.

Crotonville may not look like the kind of community that would spark a revolution. But on a raw, windy March evening in 1966, 300 people gathered in the village's American Legion Hall to create the Hudson River Fishermen's Association—the forerunner of Hudson Riverkeeper, the first Waterkeeper organization.

The people who met in that hall weren't radicals or militants. They were factory workers, carpenters and electricians. Many were combat veterans from World War II and Korea. Their patriotism was rooted in bedrock American values. Half the people in Crotonville made at least some of their living crabbing or fishing the Hudson River. The river's bathing beaches and swimming and fishing holes were their backyard. They came to the

American Legion Hall that night because the river's abundant fisheries and the purity of the Hudson's waters were being robbed from them by large corporate polluters over whom they had no control.

Betrayed by the government agencies that were supposed to protect them from polluters, they decided the only way to reclaim their river, their livelihoods and the health of their communities was to confront the polluters for control of the Hudson. They resolved to track down and prosecute every polluter on the Hudson and enforce the laws that the government was failing to enforce.

In the ensuing years, their new organization grappled with the nation's biggest industrial corporations, brought hundreds of polluters to justice, and forced them to spend hundreds of millions of dollars restoring the Hudson to health.

The miraculous resurrection of the Hudson inspired the creation of Riverkeepers on waterways across North America—each with a patrol boat, a full-time paid Riverkeeper and attorneys prepared to litigate.

Today, Waterkeeper Alliance is a global movement of nearly 200 Waterkeepers who patrol and advocate for over 100,000 miles of rivers, bays and other waterways on six continents—from North America's Great Lakes to Australia's Yarra River, and

from the Amazon to the Ganges.

This June, Waterkeepers from around the world are meeting in New York City to mark the successes of the last decade—but also to face squarely and soberly the daunting work ahead.

You can read about some of the challenges with which Waterkeepers are grappling in this issue—from Hudson Riverkeeper's efforts to remediate decades of pollution on what is arguably America's most polluted waterway, Newtown Creek, a Hudson tributary—to the work of the Baja California Waterkeepers to stand up for their treasured communities and way of life using the methods pioneered by Crotonville's residents almost a half century ago.

If there is a single lesson to be drawn from the Waterkeeper movement's long experience, it is that the destruction of the environment is always abetted by the erosion of democracy. And conversely, the struggle for the environment, which is now a global struggle, is bound inextricably to the struggle for democracy.

That lesson is powerfully illustrated today in Waterkeeper Alliance's fist fight with King Coal, which has launched multimillion dollar propaganda campaigns to deceive Americans into believing the canard that coal is cheap and clean.

Waterkeeper programs in Alabama, Alaska, Arizona, North Carolina, Okla-

homa, Pennsylvania, Utah, and West Virginia have been fighting the coal industry for years. And this year, Waterkeeper Alliance launched its first national anti-coal campaign. “The Dirty Lie” campaign is intended to create broader awareness of the destructiveness of coal and force a change in current national energy policy that relies on this dirty, destructive, poisonous fuel. Information on the campaign is available at www.thedirtylie.com.

While coal-generated power may appear cheap on your electric bill, its true costs to our nation make it the most catastrophically expensive method ever devised for boiling a pot of water. Coal’s hidden costs begin with its extraction.

If the American people could witness the destruction I have seen in the coalfields of Kentucky and West Virginia there would be a revolution in this country. Mountain-top-removal mining is devastating southern Appalachia, tearing up mountains, burying streams, flattening forests, and extinguishing the region’s rich culture.

In 1968, my father, then fighting strip mining in Appalachia, told me that the coal companies were not just destroying the environment, they were permanently impoverishing local communities. “There is no way to generate an economy from the moonscapes they leave behind,” he said. “They’re doing it so that they can break the unions.” He was right. Back then, there were tens of thousands of miners in West Virginia and unionized workers taking coal out of underground mines were the economic lifeblood of coalfield communities. Today there are less than 6,000 union miners left in the state. The coal moguls are mining more coal than in 1968 but with far fewer workers due to mechanization and increasing emphasis on surface mines. Then as now, the profits go to the Wall Street bankers and out-of-state corporate interests who would liquidate West Virginia’s natural heritage for cash.

Detonating explosives equivalent to a Hiroshima bomb weekly, the coal barons are blasting the tops off the mountains to access sub-surface coal seams. Giant machines—drag lines and dozers—then scrape the rubble and debris into the adjacent valleys, filling the hollows, and leveling the landscapes. They’ve already buried 1,200 miles of streams, decapitated nearly 500 mountains, and flattened hundreds of thousands of acres of Appalachia’s irre-

placeable forests. Soon, they will have destroyed a landscape the size of Delaware.

It’s all illegal. You cannot dump rock, debris and rubble into a waterway without a Clean Water Act permit. Environmental lawyer Joe Lovett sued the industry and prevailed before a conservative federal judge in West Virginia, the late

The struggle for the environment, which is now a global struggle, is bound inextricably to the struggle for democracy.

Charles Hayden. Hayden agreed that the entire racket was unlawful and enjoined all mountaintop mining.

After that judicial decision, Peabody Coal and Massey Energy, two of the nation’s biggest coal companies, met with Bush administration officials who obligingly overturned thirty years of statutory interpretation by changing the meaning of one word of the Clean Water Act. Their new definition of the word “fill” effectively overruled Judge Hayden’s decision, making it legal to dump rock, rubble, construction debris, and other solid waste into any American waterway without a Clean Water Act permit. All they need today is a rubberstamp permit from the Army Corps of Engineers.

Devastated mountains, ruined communities, and political corruption are the legacies of coal mining in Appalachia—but there are many other costs of coal. Carbon dioxide pollution from coal plants is the primary cause of climate change, which threatens to destroy human civilization and cause the death of hundreds of millions of people. Acid rain from coal plants has sterilized one-fifth of the lakes in the Adirondacks and degraded Appalachian forests from Georgia to Quebec. Mercury from coal plants has contaminated 100 percent of the waterways in 19 states and contaminated fish in all 50 states. According to the EPA, one of six American women now has toxic levels of mercury in their bodies that threaten their children with a grim inventory of disease including mental retardation. Some 640,000

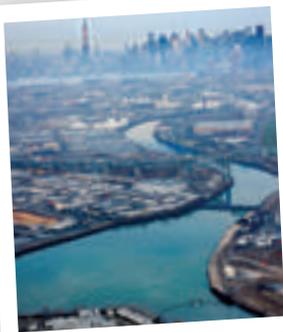
American children born each year have been exposed to dangerous mercury levels in their mother’s wombs. Ozone and particulates from coal plants contribute to the death of thousands of Americans each year from respiratory disease and cause a million asthma attacks and a million lost work days.

The government’s response is to ignore these crimes. Captured regulatory agencies shield the coal barons from enforcement of environmental and public health laws while toadying politicians in thrall to their King Coal paymasters pass laws to insulate this filthy industry from private litigation. Adding insult to injury, the federal and state governments provide billions of dollars in annual subsidies and pollution waivers to coal moguls already rolling in cash. Those subsidies allow the coal companies to multiply their crimes against our generation and our children’s.

Waterkeeper Alliance’s unique grassroots model gives us the ability to carry our anti-coal campaign to hundreds of locales in a way no other group can. It is a chance for millions of citizens to join the effort and help make sure our message is heard in corporate boardrooms and the halls of government that they will be held accountable.

When Henry David Thoreau went to prison in Concord, Massachusetts, for protesting the Mexican-American War, his friend Ralph Waldo Emerson called to him through the barred prison window, “What are you doing in there, David?” Thoreau’s answer, “What are you doing out there, Ralph?”

From Concord to Crotonville to the coalfields of Appalachia, citizens who understand that democracy and the environment are intertwined are standing up to speak truth to power and protect their communities, their democracy and their environment. ■



ON THE COVER

Hudson Riverkeeper's work on Newtown Creek exemplifies how the Waterkeeper brand of hard-hitting environmental enforcement is changing the environmental and political landscape of contaminated communities—in New York and across the world.

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

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Who is Waterkeeper Alliance?



Prem Pushwinder, Upper Betwa Riverkeeper in northern India, is working hard to revive traditional water harvesting systems that for centuries protected India's farmers from the cycle of drought and flooding that is plaguing them today.

Waterkeeper Alliance is a powerful worldwide coalition of nearly 200 local Waterkeepers groups—Riverkeeper, Baykeeper, Coastkeeper and other grassroots Waterkeeper organizations—connected into a unified international force for environmental protection.



Prem Pushwinder,
Upper Betwa Riverkeeper

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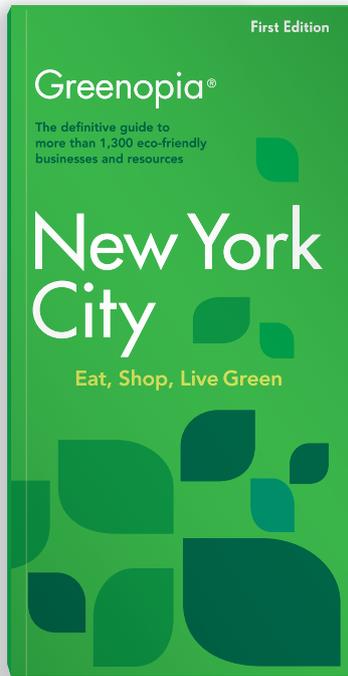
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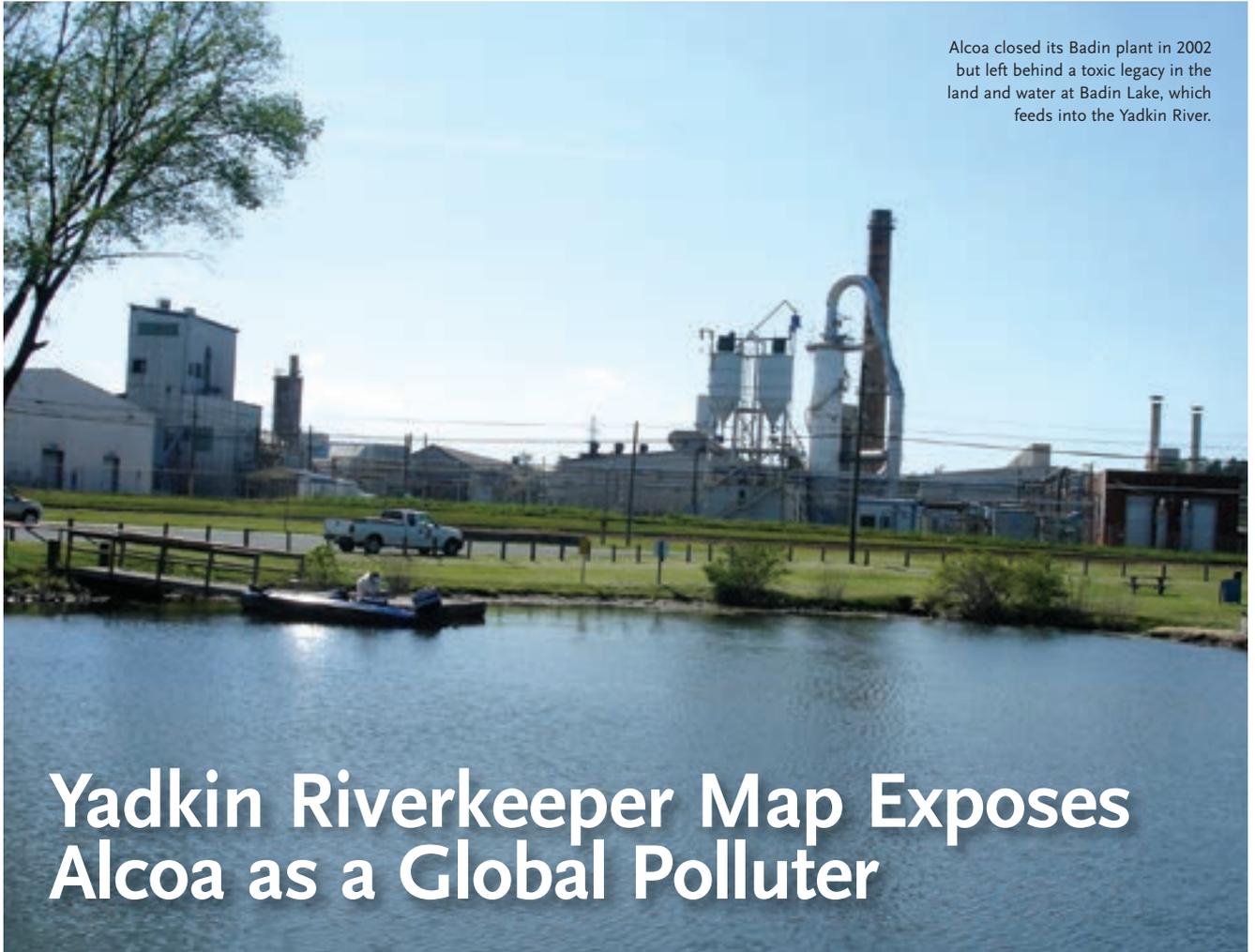
—The New York Times online



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{ Ripples }

Alcoa closed its Badin plant in 2002 but left behind a toxic legacy in the land and water at Badin Lake, which feeds into the Yadkin River.

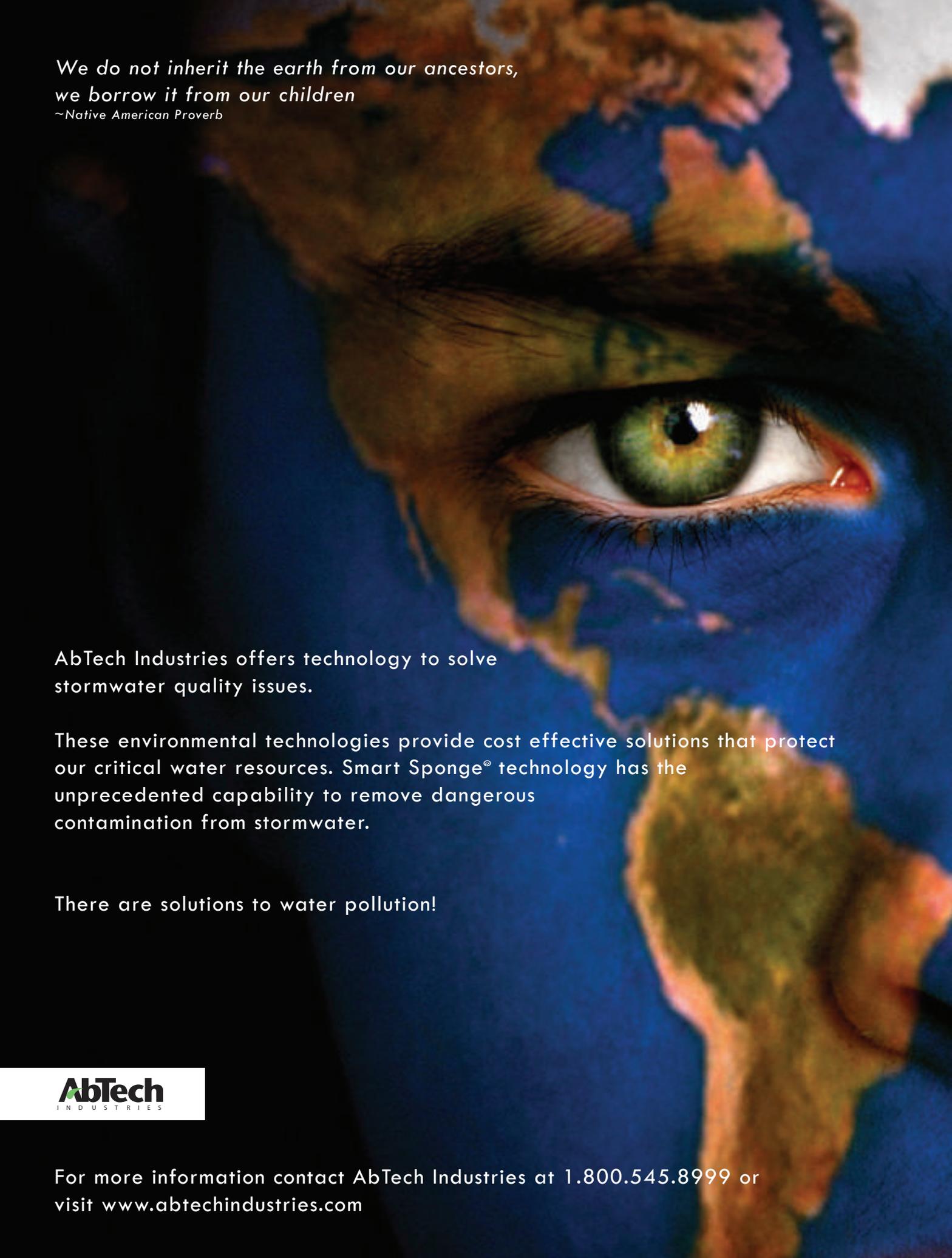


Yadkin Riverkeeper Map Exposes Alcoa as a Global Polluter

When Alcoa, the giant aluminum producer, filed a request with the Federal Energy Regulatory Commission (FERC) to renew a 50-year operating license for four hydroelectric dams along the Yadkin River that powered its smelting plant in Badin, the company was confident North Carolina would issue the required permit — even though Alcoa closed the Badin facility in 2002. Since the plant closure, Alcoa has been selling the power on the open market, generating about \$44 million a year.

Yadkin Riverkeeper Dean Naujoks had other ideas. Along with local business leaders and elected officials, he opposed the request, which failed to address numerous pollution problems linked to the Alcoa plant. For decades, Alcoa's operations were responsible for the discharge of cyanide, fluoride, PCBs, solvents, metals, hydrocarbons, benzene, naphthalene and methane. Additionally, algae problems and low dissolved oxygen levels linked to their hydroelectric power operations had also been disregarded.

Throughout the relicensing process, Alcoa argued that the contamination issues should be separated from its relicensing effort, claiming the company had an "outstanding reputation locally, nationally and globally for its commitment to protecting the environment." Naujoks decided to do some research of his own.



*We do not inherit the earth from our ancestors,
we borrow it from our children*

~Native American Proverb

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The Widening Gyre: Fraser Riverkeeper Earth Day Cleanup

The mighty Fraser River is the longest river in British Columbia. Its watershed is a vast ecological, cultural and economic treasure chest, which drains more than a quarter of the province before it empties into the Pacific Ocean, through Vancouver.

On April 19, Fraser Riverkeeper hosted its second annual Earth Day event: the cleanup of the Fraser River's Pegleg Bar, one of the river's numerous gravel bars. Pegleg, and other bars, provide important riparian zones for aquatic and terrestrial plants and animals. During the late winter and early spring, before the spring thaw begins, the gravel bars are exposed. After the thaw, the bars are largely submerged and are prized as sport fishing hotspots. But people continue to dump along the river and the refuse is trapped along these bars.

At last year's Earth Day cleanup, about 50 volunteers collected over four tons of waste material in the span of two hours: two-and-a-half tons

of garbage and two tons of metal, including bicycles, household appliances, mattress springs, and other recyclables.

This year, Fraser Riverkeeper, working with the city of Chilliwack and other friends of the river, including British Columbia's Minister of the Environment, Barry Penner—and with more than double the number of last year's volunteers—pulled out 11 tons of waste, including the remains of a car and a washing machine.

In thanking everyone, Fraser Riverkeeper Doug Chapman spoke of making a difference large and small—to the river and to the planet. "The garbage you removed today will not be able to disintegrate and affect the wildlife that inhabits the river. And the plastics won't end up in the large plastic 'island' in the North Pacific Gyre," he said, in reference to the area of the Pacific twice the size of the United States that has become a giant trash basin for plastic waste.



British Columbia's Fraser River is home to some of the world's most important salmon runs. Pegleg Bar provides easy access to the Fraser for recreational fishing but it has resulted in the accumulation of various types of garbage—from aluminum cans to couches.

Waterkeeper Family Album

CONGRATULATIONS!

West/Rhode Riverkeeper Chris Trumbauer and his wife Mary are proud to announce the birth of their daughter Josephine Eileen. Josephine was in such a hurry to come into the world that she couldn't wait to get to the birthing center. Proving once again that Riverkeepers are jacks-of-all trades, Chris "delivered" her on the kitchen floor. ▶



◀ Vera Minina, Coordinator of Ecological Programs for Russian WATERKEEPERS, celebrated the birth of her daughter, Vera Sofia M. Koreshkova, on December 2, 2008.

Вера Минина, Директор Экологических Программ для Russian WATERKEEPERS родила дочку Софию М. Корешкова 2 декабря 2008 года.



HONOR



Milwaukee Riverkeeper Cheryl Nenn in the Riverkeeper boat at the end of another day on the water.

EMILY ECGINTON

Milwaukee Riverkeeper Named 2009 River Champion

The River Alliance of Wisconsin has named Milwaukee Riverkeeper one of three River Champions for 2009. Milwaukee Riverkeeper, formerly Friends of Milwaukee's Rivers, has been a staunch advocate for the health of the Milwaukee, Menomonee and Kinnickinnic River watersheds for the past 14 years.

The River Alliance cited Milwaukee Riverkeeper's work tracking pollution spills, monitoring water quality and championing Milwaukee's rivers at the municipal, state and federal levels. One of Milwaukee Riverkeeper's biggest victories was getting the Kinnickinnic River listed as one of the nation's Most Endangered Rivers. As a result of the designation, a federal- and state-funded \$22 million cleanup project is removing 170,000 cubic yards of sediment containing PCBs and PAHs from the river's bottom.

A focus of Milwaukee Riverkeeper Cheryl Nenn's work has been advocating for improved sewage treatment. "Our sewage and drinking water systems may be less visible than our roads and railroads, but they are no less important," said Nenn. "We're facing a perfect storm of sorts in this country: antiquated and failing sewage infrastructure under our cities, increased wastewater from a population that has doubled since the 1940s, discharges of raw sewage to our waterways that threaten our public health, and lack of funding and political will to deal with these problems."

She has called for the creation of a Clean Water Trust Fund that would invest in improving sewage infrastructure, developing new technologies and making sewer system upgrades and water quality protection a priority in federal and local budgets.

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Riverkeeper Fund Drive No Hail-Mary Pass

Last August, Wayne Weaver and his wife, De-
lores Barr Weaver, owners of the Jacksonville
Jaguars National Football League team, issued a
challenge to the St. Johns Riverkeeper: They would
write a check for \$150,000 to the Riverkeeper organi-
zation if the group could raise double that amount.

The \$450,000 would help St. Johns Riverkeeper
in their legal challenge against plans to remove
millions of gallons of water a day from the St.
Johns River, located in Central Florida, and to raise
awareness about the threats to the health of the
river, which was named one of the 10 most threat-
ened in the country by American Rivers.

In spite of the tough economic times, the
fundraising effort was a success thanks to the
support of school groups, garden clubs, business
and civic organizations and residents of the St.
Johns River watershed. There were 800 separate
donations, ranging from \$5 to \$30,000. “This is
phenomenal,” Mrs. Weaver said during the check
presentation ceremony at the Northbank River-
walk, in Jacksonville, on March 17.

“We are so grateful and humbled by the
outpouring of support from the community,”
said Neil Armingeon, St. Johns Riverkeeper. “The
people of this community have sent a powerful
message that they won’t stand idly by and allow
harm to come to the St. Johns without a fight.”



NY/NJ Baykeeper Debbie
Mans (left) and Hackensack
Riverkeeper Captain
Bill Sheehan.

N.J. LAW

For years, both
Hackensack Riverkeeper
and NY/NJ Baykeeper
relied heavily on
the free legal exper-
tise offered by
Rutgers University’s
Environmental Law
Clinic and the Eastern
Environmental Law
Center. Often this

meant competing with
similarly deserving cases
from other environmental
organizations. Now, thanks

to a grant from the Geraldine R. Dodge Foundation,
the two groups have hired a full-time environmental
attorney whose services they are sharing — a first for
two Waterkeeper organizations.

In a letter notifying the two groups of the grant,
foundation President and CEO David Grant praised their
“ability to connect people to their environment”
and their efforts “to make immediate our obligation to
one another and to the earth.”

Coastkeeper Discovers Sewage Spill in Critical Coastal Watershed

It was early in the afternoon when
a call came in for Assateague
Coastkeeper Kathy Phillips. An off-road
cyclist had passed through several boggy
acres in a woodland near Ocean City,
Maryland, that smelled suspiciously
like raw sewage.

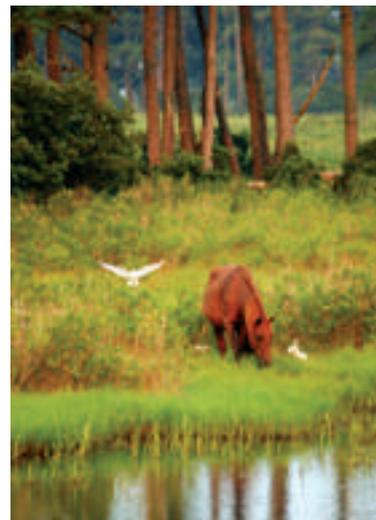
Phillips responded immediately,
knowing that the wooded area
lay between a campground and
development, and the wastewater
treatment plant that serviced them. She
found a standpipe in the middle of the
soggy soil and within minutes of her
arrival, it released a rush of liquid, before
pausing and repeating the performance.

Suspecting the surge was indeed raw
sewage, Phillips contacted the Worces-
ter County public works department
and requested an immediate site visit.
While waiting for someone to arrive, she
scooped up samples for the lab.

When local authorities appeared on
the scene, they were quick to reassure her
that the pipe transported “nothing but ter-
tiary-treated wastewater.” The engineer’s
opinion was that the overflow, probably
due to a faulty valve, was a recent occur-
rence. Then, as if on cue, a foamy liquid
spewed from the pipe and flowed casually
to the feet of the observers.

Subsequent lab reports confirmed
off-the-chart readings for E. coli and fecal
coliform bacteria. Phillips notified the
Maryland Department of Environment
and a subsequent visit by an MDE in-
spector found the county had not main-
tained proper maintenance records or

conducted proper inspections of the site,
as required by the law. Appropriate viola-
tions were issued by the MDE.



Assateague and its waters have received
designation as a World Biosphere Reserve by
the U.N., but Assateague Coastkeeper Kathy
Phillips still spends a lot of her time patrolling
for polluters—on the water and the land.

Got Milk?

Patuxent Riverkeeper teamed up with the Natural Resources
Defense Council (NRDC) to eliminate the largest single
industrial nutrient source located on the Little Patuxent
River, a tributary of the Patuxent. For over a decade, a dairy
processing plant, Virginia Dairy Producer’s Coop, has been
responsible for permit violations, operational deficiencies, and
nutrient discharge problems that have plagued the Little Patuxent.

Records from the Maryland Department of the Environment revealed a
pattern of violations and almost no enforcement by state regulators. Thanks to
a grant from the Keith Campbell Foundation, Patuxent Riverkeeper and NRDC
attorneys initiated a series of legal overtures, negotiations and activism.
The dairy plant’s operators has had no choice but to clean up their act. The
plant will now discharge into the Little Patuxent wastewater treatment plant,
bringing an end to its adverse effects on the river’s ecology. “Good business
is synonymous with sound environmental practice,” said Fred Tutman,
Patuxent Riverkeeper.



California Coastkeeper's Crash Course on the Clean Water Act

Thirty-seven years after passage of the U.S. Clean Water Act promised fishable waterways and potable water, there are still many waters in which Californians can't safely fish, swim or surf; fish can't thrive and places where the water is too polluted to drink without costly treatment.

The Clean Water Act requires states to review lists of their most polluted waterways every two years and develop cleanup plans for each. That process is now under way at California's nine regional Water Quality Control Boards.

Because the polluted waters list is one of the most powerful tools that Californians have to clean up rivers, lakes and coastal waters, California Coastkeeper Alliance and its 12 member Waterkeepers are holding workshops to inform citizens, communities and public interest groups how to get involved.

Workshops in California's North Coast region and in Orange County attracted recreational anglers and commercial fishermen, surfers, local watershed councils, tribal representatives, interested citizens and even staff from state and regional water boards, some of which advertised the workshops themselves.

California Coastkeeper Alliance's program coordinator, Tom Lyons, gave a crash course on the Clean Water Act and, along with the local Waterkeeper, led a lively dialogue around specific waterways and the local water board's proposed list. "When people leave these workshops, they are fired up to demand that their Regional Water Boards identify and swiftly clean up polluted waters and hold polluters responsible," said Lyons.

In the coming weeks, California Coastkeeper Alliance and local Waterkeepers will expand clean water advocacy into California's Central Coast, the San Francisco Bay area, Los Angeles and San Diego.

Learn more about California's severely polluted waterways at: www.cacoastkeeper.org/impaired_waterbodies/



Girl Scouts Protest: CLEAN UP OUR CREEK!

When local authorities refused to take action to protect a popular creek, a troop of local girl scouts turned to French Broad Riverkeeper.

A now-defunct manufacturing facility contaminated the West Ashville Creek to the point that its waters tested positive for high levels of many volatile organic compounds, above every safe level posted by the state and the EPA. After drawn out talks between the North Carolina Brownfields Program, the Division of Water Quality, the City of Asheville and the Buncombe County Health Department, it was finally determined that the case would fall under the health department's authority. However, the health department refused to post signs, claiming that it needed more information.

The scout troop decided to take matters in their own hands and, with French Broad Riverkeeper's help, posted handmade warning signs along the creek. "This creek has unsafe levels of toxic chemicals, and the girls wanted their neighbors to be warned about the possible danger," said French Broad Riverkeeper Hartwell Carson. The signs warn that the stream isn't safe for swimming, and that the toxic waste from the manufacturing site should be cleaned up. The scouts went a step further and wrote letters to their elected officials urging them to take action and warn the public, as well as clean up their stream. In the words of one nine-year-old activist, "It's not fair to leave all that pollution in the creek."



Street-to-Stream High School Student Video Contest

The subject of urban stormwater runoff isn't the kind of topic that lights up most adolescents' eyes, but Tualatin Riverkeepers came up with a novel way to make more young people aware of the seriousness of the problem in the Tualatin River basin, which is west of Portland, Oregon. It hosted a video-making contest challenging high school students to produce a 24-second public service announcement raising awareness about the harmful effects of stormwater runoff. The grand prize of \$500 was shared between Matthew Dan and his school, Capital Center H.S.

The prize was donated by the Tualatin Basin Partners for Clean Water, a coalition of public agencies that raises awareness about the Tualatin River Watershed.

Matthew Dan's winning video, and other entries, can be viewed on YouTube: www.youtube.com/user/Street2Stream

New York Harbor's Heart of Darkness

Hudson Riverkeeper leads the cleanup of long-neglected Newtown Creek

By Craig Michaels

Craig Michaels is the Watershed Program Director at Hudson Riverkeeper.

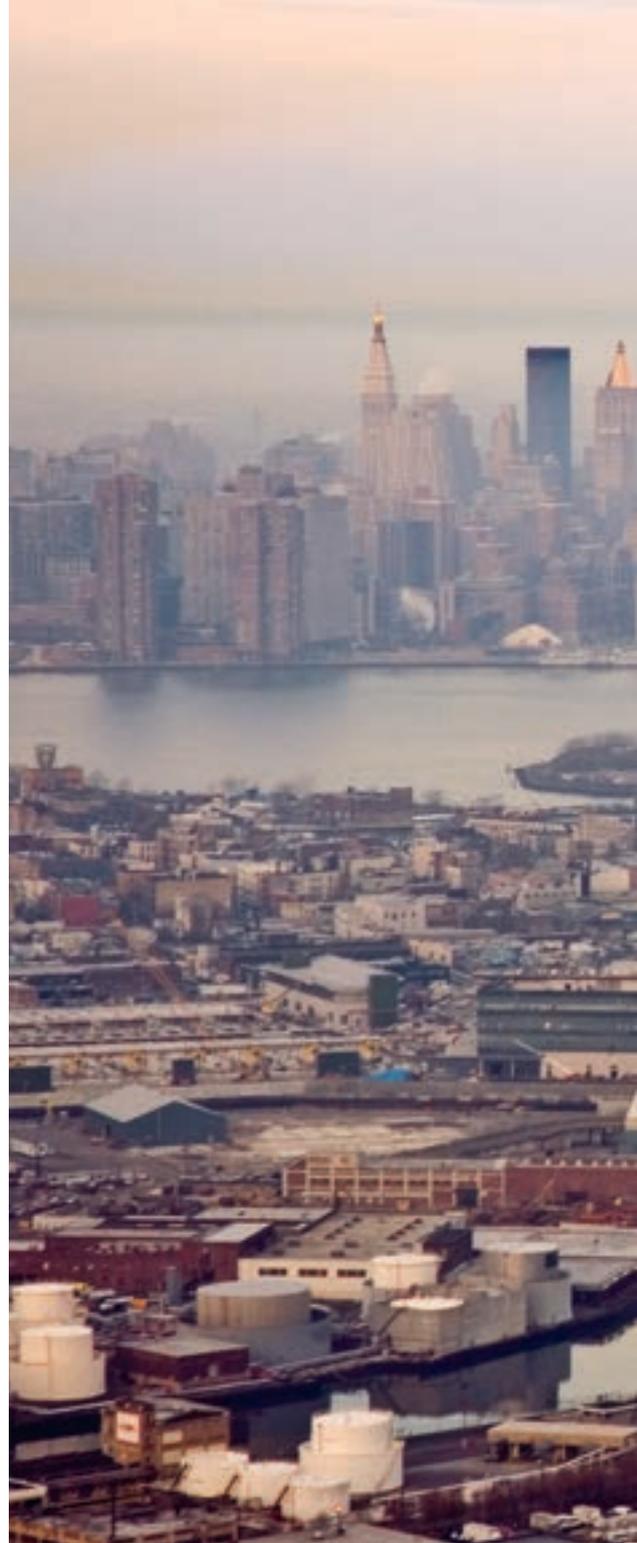
Hudson Riverkeeper's former chief investigator, Basil Seggos, once described a patrol up Newtown Creek—a three-and-a-half mile-long estuarine tributary of the Hudson River that forms a border between Brooklyn and Queens—as an environmentalist's journey into the heart of darkness. More than a century of rampant industrial use and environmental neglect have turned the creek into a toxic wasteland.

Oil tank farms, coal gasification plants, solvent reprocessing facilities, copper smelting sites, cement companies and abandoned factories still blanket the shorelines. Newtown Creek is also on the receiving end of nearly three billion gallons of untreated raw sewage a year that flow from New York City's combined sewer system, not to mention the liquid cement waste from several concrete plants operating hard by the gentrifying working-class neighborhoods of Brooklyn and Queens that surround the creek.

Newtown Creek's pollution problems first rumbled (literally) into public view nearly 60 years ago, when an underground oil tank explosion blew out a 10-foot section of pavement, shot 25 manhole covers into the air, and shattered windowpanes on more than 500 surrounding buildings in the Greenpoint area of Brooklyn. But when the dust settled after the 1950 explosion, it was back to business as usual.

There was little mention of the massive explosion or the decades of petroleum spills and leaks that preceded and followed it, until 1978, when U.S. Coast Guard personnel on aerial patrol observed an oil slick where Newtown Creek empties into the East River, roughly opposite Bellevue Hospital in Manhattan.

The oil spill that the Coast Guard patrol discovered in Greenpoint and Newtown Creek turned out to be one of the largest known in North America. An estimated 17 million gallons of petroleum (here, a mixture of degraded



gasoline, fuel oil and naphtha) had, over the decades, seeped into Newtown Creek and under more than 55 acres of surrounding industrial, commercial and residential land. While that would amount to a spill 50 percent larger than the Exxon Valdez's in 1989, other estimates put the total at 30 million gallons, a lake of oil almost three times the size of the Valdez spill.

ExxonMobil—the oil company with the largest facilities along the creek—entered into two consent agreements with the State of New York in 1990. Akin to an out-of-court settlement, the agreements required ExxonMobil to recover



“free product” floating on the surface of the water, but did not require a full remediation of all contamination. While the spill continued to be largely ignored, the environmental problems continued unabated.

The list of pollutants identified at hazardous waste sites along the creek reads like the periodic table, including chemicals such as arsenic, benzene, toluene, xylene, cadmium, chromium, cyanide, lead, mercury and PCBs. The impacts have been devastating. The local aquifer, which was used regularly until 1949, has been rendered unfit for human consumption. Fifty-five acres of

land zoned for mixed commercial and residential use is too toxic for redevelopment, and petroleum product has settled under more than 100 homes on three residential blocks. The effect on aquatic life in Newtown Creek and around New York Harbor has been severe, with pollution from the creek flowing in and out with the tide, to be transported around New York Harbor, up the Hudson River, out beyond the Verrazano Bridge to the Atlantic, and across Hell’s Gate into Long Island Sound. In all likelihood, the contamination from the creek has now infiltrated the food chain harbor-wide.

In all likelihood, Newtown Creek’s pollution has infiltrated the food chain throughout New York Harbor.



Hudson Riverkeeper patrol boat captain John Lipscomb on Newtown Creek. Riverkeeper's enforcement mission remains in full force, with routine aerial, water and land-based patrols of the creek's watershed.

Citizen Enforcement

The long history of pollution on Newtown Creek is enough to lead even the most dedicated environmental advocate down the path to despair. This tale of uncontrolled industrial pollution, lax government oversight, and general political neglect is a story all too familiar to the citizens and fishermen who endured decades of pollution on the Hudson and watched as their beloved river was turned into little more than a dumping ground. But as the story of the Hudson's reclamation continues to unfold, and as the Waterkeeper movement continues to grow, one message remains clear: action is the antidote to despair.

In May 2004, Hudson Riverkeeper, along with several local residents, filed a citizen suit in federal district court against ExxonMobil for violations of both the Clean Water Act and Resource Conservation and Recovery Act stemming from the petroleum contamination. That case is in the discovery phase, which is being handled by the staff and students of the Pace Environmental Litigation Clinic. Hudson Riverkeeper has had a longstanding partnership with the Pace clinic since its founding in 1987 by Riverkeeper's Chief Prosecuting Attorney, Robert F. Kennedy, Jr.

A nearly identical federal lawsuit against ExxonMobil was filed in 2005 by Brooklyn Borough President Marty Markowitz and New York City Councilmembers David Yassky (Brooklyn) and Eric Gioia (Queens). In 2005, two law firms filed separate mass tort suits in state court against ExxonMobil and other companies. More than 500 local residents are plaintiffs in those cases. In July 2007, New York State Attorney General Andrew Cuomo also filed a federal lawsuit against ExxonMobil on behalf of the State of New York.

Criminal Prosecutions

The underground plume of oil in Greenpoint is just one of the toxic issues facing the communities around Newtown Creek. State environmental officials have discovered a series of underground solvent plumes, most likely the result of widespread use of chemicals by metal finishing shops, dry cleaners, and possibly by former petroleum refineries. Due to harmful levels of air pollution rising from the ground, dozens of homes and businesses remain at risk.

In 2002, Hudson Riverkeeper discovered that a concrete company, Empire Transit Mix, was illegally dumping its wastewater into the creek, causing extensive white plumes with pH levels above 12. Riverkeeper reported this activity to state and federal environmental officials and the F.B.I., and in 2003 Riverkeeper and EPA officials conducted a joint investigation of the site. Two years later, the U.S. Attorney's Office for the Eastern District of New York accepted a guilty plea from Empire Transit to criminal misdemeanor violations of the 1899 Rivers and Harbors Act. That act—a navigational law first used to prosecute polluters in the 1960s by Riverkeeper's predecessor organization, the Hudson River Fishermen's Association—prohibits the dumping of debris and pollutants into navigable waters. As part of the plea agreement, Empire Transit was fined \$300,000, half of which was given to Riverkeeper under the act's bounty provision.

In August 2008, a New York State appellate court reinstated more than 20 criminal charges brought by the Brooklyn District Attorney's office against another concrete company and one of its vice presidents. The defendants, Constantine Quadrozzi and Quality Concrete of New York, had been indicted shortly after Riverkeeper filed a Notice of Intent to sue the company under the Clean Water Act. Based in part on the testimony of Riverkeeper staff, a grand jury convened by the D.A.'s office issued a 42-count indictment for criminal negligence and violations of the New York State Environmental Conservation Law. The trial court dismissed the indictment, but the Appellate Division reversed the lower court's ruling.

With what have now become routine aerial, water and land-based patrols of the Newtown Creek watershed, Riverkeeper's enforcement mission remains in full force. In September 2008, Riverkeeper filed a Notice of Intent to Sue against NYCON, another concrete company, for illegally discharging cement waste directly into a Newtown Creek tributary without a Clean Water Act permit. Following Riverkeeper's Notice letter, the state Department of Environmental Conservation, committed to stopping the pollution at its source, initiated an administrative consent order against the company.

A Chorus Line
Newtown-Creek style:
Cement mixers parked at
the creek's edge.



Talk of Superfund

As political pressure for a comprehensive cleanup of Newtown Creek continues to build, all hands are now on deck to ensure the best possible cleanup. In response to a formal request by United States Representatives Weiner, Velazquez, Solis, and Green, the EPA agreed in August 2008 to study contamination in and around Newtown Creek. Over the next year, the EPA will examine existing information from continuing environmental investigations of the creek and determine whether the contamination warrants additional studying and sampling under CERCLA (the Comprehensive Environmental Response, Compensation, and Liability Act), commonly known as Superfund.

Newtown Creek isn't the only New York City water body on EPA's radar right now. Brooklyn's Gowanus Canal is also being considered for listing on the Superfund National Priorities List. Like Newtown Creek, the Gowanus has suffered more than a century of neglect, with manufactured gas plants and sewer overflows serving as the main culprit.

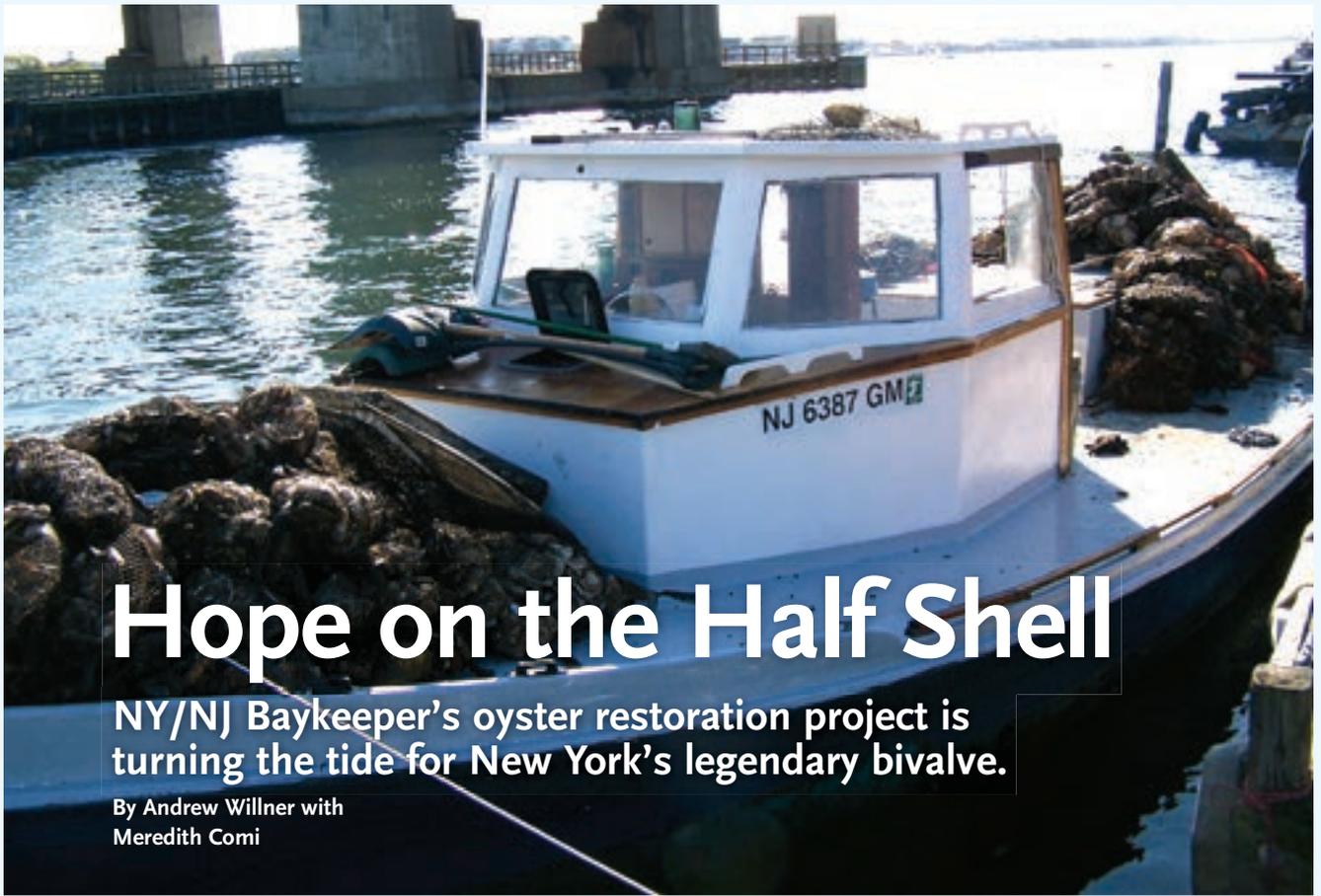
The Newtown Creek Alliance

While Riverkeeper's enforcement actions have brought many pollution issues to light, no one knows the toll that pollution has taken better than the residents of Greenpoint, Brooklyn. Back in 2003, Hudson Riverkeeper and New York City Councilman David Yassky co-founded the Newtown Creek Alliance, a collection of

citizens' groups and elected officials dedicated to protecting and restoring the creek. This group has worked tirelessly to hold polluters accountable for the contamination they caused. In March 2008, Riverkeeper, the Newtown Creek Alliance and the Greenpoint Manufacturing and Design Center—a nonprofit industrial developer that rehabs buildings for occupancy by small manufacturing enterprises, artisans and artists—received a \$625,000 New York State Brownfields Opportunity grant that will fund community-driven planning and analysis of Newtown Creek and surrounding contaminated sites in Queens and Brooklyn. Local environmental benefit projects will also be funded by a \$10 million settlement reached last January by the City of New York and the state Department of Environmental Conservation to resolve past violations by the city's Newtown Creek sewage treatment plant.

Hudson Riverkeeper's work on Newtown Creek exemplifies how the Waterkeeper brand of hard-hitting environmental enforcement can completely change the environmental and political landscape of a contaminated community. Thanks to years of investigation and litigation that helped uncover a previously hidden environmental disaster, Newtown Creek is now getting the attention it deserves, and local residents are well positioned to accept nothing less than a full and comprehensive cleanup of what should be a swimmable and fishable waterway in the heart of one of the greatest cities in the world.

Riverkeeper's enforcement actions have brought many pollution issues to light, but no one knows the toll that pollution has taken better than the residents of Greenpoint, Brooklyn.



Hope on the Half Shell

NY/NJ Baykeeper's oyster restoration project is turning the tide for New York's legendary bivalve.

By Andrew Willner with
Meredith Comi

Andrew Willner is the
New York/New Jersey
Baykeeper Emeritus

Meredith Comi is the
New York/New Jersey
Baykeeper's Oyster
Project Director

When Henry Hudson and his crew first entered the sheltered waters of present-day New York and New Jersey, they found 35 square miles of oyster beds. But by the end of the 20th century, the oyster had all but disappeared. In 1997, I was out on a boat in the Navesink River, near Red Bank, New Jersey, with Ben Longstreth (at the time a new hire, and now the president of New York/New Jersey Baykeeper's board), when I looked at the chart and realized that we were off Oyster Point. I offhandedly remarked, "Wouldn't it be great to have oysters back at Oyster Point?" But, as the NY/NJ Baykeeper, I was all too familiar with the sad history of the oyster's demise in these waters; my comment seemed like little more than a pipe dream.

From the 17th to the 19th centuries, oysters virtually paved the shallows of the harbor. Oyster reefs once covered huge swaths of sea bottom from Sandy Hook, N.J., north as far as Ossining, N.Y., and thrived in Upper and Lower New York Bays, Jamaica Bay, Raritan Bay, the Navesink and Shrewsbury Rivers, the Arthur Kill and Newark Bay. Like the world's coral reefs, the bays' oyster reefs played a central role in the web of life, providing critical habitat for more than a hundred species of marine organisms, including commercially and recreationally important fish such as striped bass. Oysters also functioned as the bays' kidneys, filtering millions of gallons of water per day. (A single adult oyster can filter up to 50 gallons of water a day.)

The harbor's oyster production was prodigious.

Keyport, N.J., alone supported a 400-boat oyster fleet, while other fleets sailed from Perth Amboy and Staten Island. Oysters were so plentiful they were considered poor people's food, though the harbor's oysters also graced the tables of the finest gourmet restaurants in New York, Paris and London. But in the 20th century, overharvesting, siltation and pollution drove this vital resource to virtual extinction. The oysters remaining were so virus- and toxin-ridden that in 1924 the state banned all oystering in New York Harbor. The great oyster reefs and clear filtered waters were gone, replaced by the murky depths of a muddy-bottomed bay.

A Great Dream: The Return of the Oyster

Pollution control measures introduced since the 1970's were the first step toward recovery. In 1997—after NY/NJ Baykeeper declared that the restoration of shellfish would be its Number One goal—Baykeeper volunteers put out small bags of oysters at 15 locations around the estuary. To everyone's surprise and delight, oysters grew well almost everywhere. Ramping up its efforts, in 1999 Baykeeper created an artificial oyster reef off Liberty Island (which, along with Ellis Island, was known to the Dutch as the Oester, or Oyster, Islands). The dumping of 10,000 bushels of shell by a New York City fireboat earned enthusiastic TV and newspaper coverage and raised hope for the future of the harbor.

Since 2000, volunteer oyster gardeners have grown oysters at 25 sites. Baykeeper provides every

gardener with 1,000 seed oysters, each about the size of a thumbnail. They are placed into a net that floats in the upper part of the water column, allowing the oysters constant infusions of water and food. Every month the oysters are measured to track growth and mortality. After a year of tending their gardens, the volunteers return their nearly mature oysters to Baykeeper to be planted at an oyster reef site.

At Keyport Harbor on New Jersey's Raritan Bay, 10,000 bushels of crushed clam and oyster shell were laid down to build a half-acre oyster reef, where oyster gardeners planted thousands of live oysters.

The oyster-rearing technique called "remote setting" kicked the Baykeeper oyster restoration program into high gear in 2002. Remote setting entails placing millions of oyster larvae, called "spat," together with mesh bags containing shell in a tank filled with filtered seawater heated to 80 degrees. The spat attach to the shells and grow. When ready, they are transported to an oyster reef for planting. Started in a classroom at the Marine Academy of Science and Technology (a Monmouth County, N.J., high school), our center for oyster rearing now has its own aquaculture facility under Moby's Restaurant in Highlands, N.J.

Good oyster growth and survival rates at the Keyport reef led to the establishment, with the New Jersey Department of Environmental Protection's approval, of a second oyster reef, on the Navesink River at Oyster Point, in Red Bank, in 2003. Just six years after my off-handed comment to Ben Longstreth, dedicated Baykeeper staff members and thousands of volunteers had turned that notion into a reality. Since then, oyster-reef building and planting events on the Navesink have become annual Baykeeper summer celebrations of the estuary and of community.

NY/NJ Baykeeper is also expanding New York City oyster gardening and, partnering with the Harbor School (a New York City public high school) and the River Project, hopes to get a reef built in New York waters. Vindicating Baykeeper's vision and hard work, the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, the Port Authority, the Corps of Engineers, and the Hudson River Foundation have issued an action agenda that includes oyster restoration.

Oyster Restoration Tomorrow

Baykeeper's oyster education program reaches thousands of children and adults across the harbor region through classroom lectures, hands-on activities and tabling events, changing perceptions of our estuary. By the end of one presentation, for example, a fifth-grader who had said he would never stick his fingers in the Hudson River, because the pollution would make them fall off, was in the water measuring oysters. Students and teachers come away with increased awareness of and respect for the marine ecosystem that surrounds them.

The Oyster Restoration Program's progress thus far paves the way for more ambitious goals. For oyster restoration to be successful, ultimately the reefs must be self-propagating. It took 150 years to destroy the estuary's oyster population; we can't expect significant progress in a few years. But news that oysters placed on the Navesink reef in 2005 are naturally reproducing shows that we are on the right track. What's required now is a well-funded, public-works-scale pilot project to demonstrate the feasibility of oyster restoration as a means of driving estuary-wide habitat restoration.

Throughout the harbor, oyster restoration could be the answer to over-nutrication and erosion problems. Building major oyster reefs on the windward side of the bays' salt marshes would have huge benefits for the estuary. Waves would break on the reefs instead of on the marshes, halting runaway erosion, increasing sediment deposit, and reducing the depth and slope of the shoreline. Newly planted oysters would reduce nuisance algae blooms and increase water clarity, creating ideal sub-tidal conditions for eelgrass (long absent from turbid bay waters) and an excellent fish habitat. We have to think not in terms of a few pallet loads of shells, but of huge barges and hundreds of acres of oysters.

A project of this size would require major resources and a well-coordinated effort among government agencies and nonprofit groups. The task is daunting, but Baykeeper has overcome every obstacle—not least, the water-quality agencies' objections that oysters in polluted waters would attract poachers, endangering human health. By obtaining permits to plant oysters and successfully doing so, Baykeeper has obligated those agencies to enforce the Water Pollution Control Act's mandates to upgrade the quality of these now-fishable waters. No matter what happens next, change is in the air—and water. The tide has turned in the harbor's favor.

Once oyster larvae have "set" on a shell and grown for about two months, they are ready for release onto newly established oyster beds around the region.



Defending Paradise

Baja California's Waterkeepers are racing the clock to save one of the world's last great natural places.

By Anna Gouznova and Francisco Ollervides



Cabo San Lucas, at Baja's southern tip, has quickly become one of Mexico's premier tourist destinations.

ANNA GOZNOVA

Anna Gouznova, former assistant editor at Waterkeeper magazine, is a freelance writer and researcher.

Francisco Ollervides is Waterkeeper Alliance's senior field coordinator and one of the founders of the Baja Waterkeeper movement.

For Julio Solis, letting Magdalena Bay die is not an option. "This is my home," he says, explaining why he joined Waterkeeper Alliance as the Magdalena Baykeeper four years ago to fight for this magnificent bay on the Pacific coast of Mexico's Baja California peninsula. "I have to think about the future, not just for me, but for my son, and his sons. Bahia Magdalena is not just our source of food, it's also our source of joy. We owe it to her and to ourselves to ensure that this beauty and plenty survives."

When he was a boy, Solis would go out with his grandfather to fish for shrimp with a net called an *atarralla*. "We used to catch up to 150 or 200 kilograms of shrimp," he recalls. "We would go to the beach and fill up entire sacks by hand. Nowadays fishermen using atarrallas catch less than 10 kilograms in a day." In Solis's village,

Puerto San Carlos, nearly 70 percent of the 13,000 residents depend directly or indirectly on fishing for their livelihood. But the bay, overexploited by a rapidly increasing population and under stress from many types of pollution, has yet to receive any legal protection or funding for conservation and resource management.

Magdalena Bay is just one of Baja California's treasured places that are endangered. About 750 miles long and with more than 2,200 miles of coastline, the Baja peninsula is the second largest in the world, exceeded only by the Malay in Southeast Asia. To the east lies the Sea of Cortez, also known as the Gulf of California, a body of water so rich with life that Jacques Cousteau dubbed it "the world's aquarium." Its waters harbor 31 species of marine mammals (39 percent of the world's marine mammal species) and 891 species of fish,

according to the U.N. Environment Program's World Conservation Monitoring Center. The U.N. declared the Sea of Cortez and 244 of its desert islands a World Heritage Site in 2005.

Today Baja is battling for its life against several threats. Tourism-development projects are destroying the very wildlife and habitat they invite visitors to explore. Tens of thousands of hotel rooms are being built without waste management plans. Ever-increasing numbers of boaters, sport-fishermen, kayakers, divers and swimmers utilize the sea without any regulation. Freshwater supplies are running out. Air pollution is choking even the most resilient of desert plants. In the face of these perils, Magdalena Baykeeper and Baja California's five other Waterkeeper organizations are racing the clock to defend and preserve their piece of paradise.

Regarded as one of the 10 most important wetland systems in North America, Magdalena Bay is similar in size and productivity to Chesapeake Bay in the United States. About 125 miles long and 12 miles across at its widest point, it is one of the largest coastal lagoon complexes on the Pacific side of the Baja California peninsula. The World Wildlife Fund ranks it as one of the 10 most important coastal habitats in Mexico as well as one in desperate need of protection.

When Eastern Pacific gray whales migrate to this bay to mate and calve between late December and early April, tourists from all over the world follow. Hotels, restaurants and shops have sprung up to accommodate the foreigners and in the process have worsened existing problems of sporadic municipal waste collection and lack of sewage treatment. Because San Carlos cannot afford the chemicals and reagents necessary for treatment, both residential and commercial sewage is discharged into the bay. To this day, most of San Carlos's residents don't have a sanitary system and rely on *pozos*, outhouses that freely leach into the bay. A tuna and sardine cannery has discharged effluent directly into the bay since operations began in the late 1960's. The excess organic matter leads to overgrowth of algae. Sea lettuce chokes the bay's waters and low oxygen levels strain the bay's productivity.

"As much as 90 percent of the bay has remained pristine," Solis says, "but the shoreline is contaminated with sewage, litter and debris." Endangered green, hawksbill, olive ridley and loggerhead sea turtles rely on a healthy bay for food and shelter; their numbers have declined dramatically over the past decades. The mangrove forests, which host an array of bird species—many of them endangered—are struggling.

Similar threats affect all the waters of Baja California, and Solis is taking the lead in uniting Baja's six Waterkeeper organizations to fight them together.





ANNA GOLIZNOVA

Numerous sea turtle species use Baja's beaches as their prime breeding grounds, but the number of places where they can safely lay their eggs is rapidly diminishing.

Los Cabos

At the southern end of the peninsula, Los Cabos Coastkeeper Martha Moctezuma defends Los Cabos County's coast, 109 miles of sparkling beaches and jagged cliffs between the towns of Cabo San Lucas and San Jose del Cabo, both popular tourist destinations. Gray and humpback whales dwell nearby, along with whale sharks and five of the world's seven species of sea turtles. Most of Cabo San Lucas Bay was declared a Natural Protected Area by Mexico's federal government in 1973, the country's first Marine Protected Zone—mainly to protect the famous underwater sand falls, where sand flows over underwater cliffs. But today tourist-related development is slowly destroying the natural environment.

"I became a Coastkeeper because I realized the need to do something about the pollution of our arroyos and our bay," says Moctezuma. "Someone has to fight the corrupt authorities who grant permits to hotel owners and developers who limit public access to our beaches and discharge sewage with no treatment."

In the past few years alone, the number of hotel rooms has increased by 30 percent, and 16 of the 20 beaches once available to the public have been converted to private, hotel-access-only areas. A growing population and increasing tourism greatly

strain the remaining public-access areas. Beach erosion and water pollution are exacerbated by the lack of basic infrastructure such as bathrooms, parking and waste disposal even at commercially developed beaches. Meanwhile, sewage overflows directly into the bay. Government monitoring and enforcement action against illegal discharge—even when violations are identified—is almost nonexistent. And permits are under consideration for the construction of several desalinization plants—in addition to two already built—along the fragile coastline.

Moctezuma refuses to give up the fight against self-interested government officials and irresponsible developers. The Los Cabos Coastkeeper is examining the permits granted for development projects that block the beach, with her eye out for violations of Federal Maritime Land Zone regulations. She is determined to increase public beach access and implement a tourism management plan. "Coastal zones are the common natural and cultural heritage of the people," she says. "That is why Los Cabos Coastkeeper has been involved in making sure new planning schemes incorporate ecology and the needs of our watershed and communities for the sake of the heritage that is left."

Moctezuma was victorious in her first battle. Los Cabos Coastkeeper won the certification of Chileno Beach Park as the first "Clean Beach" designated in Mexico's National Clean Beach Program. Once a hotel beach, Chileno was opened to the public in the 1970's. She forged a coalition that installed adequate infrastructure for the public use of the beach. "We feel that beaches are sacred, not for commercial uses that reduce beach quantity and quality," says Moctezuma, who is currently working to gain the same certification for El Dorado beach. "For us this is an incredibly important battle, because what we are not able to save will be lost forever."

La Paz

About a three-hour drive north of Cabo San Lucas, on the east coast of the peninsula, is the city of La Paz. With a population of more than 200,000, La Paz differs from most Baja California communities in that it is well equipped with highways, public transportation, ferry services and an international airport. A prime destination for eco-tourists who come to explore the wonders of the Sea of Cortez, La Paz now faces serious issues of pollution and unregulated tourism-related development. In less than a decade, the stands of mangroves on the inner side of the Bay of La Paz have lost more than 20 percent of their vegetation.

Nearby, a similar percentage of mangroves that are home to numerous bird species has been

lost as a result of the destructive force of hotel development. As is the case in most areas of the peninsula, the local sewage treatment plant is inadequate, and sewage runoff and stormwater carry trash and debris into the bay.

La Paz Coastkeeper Peter Patterson came to La Paz a decade ago to study marine sciences at the Autonomous University but he instantly fell in love with the unmatched beauty of the bay and decided to make La Paz his home. He soon witnessed the destruction wrought by reckless development projects and understood the urgent need to combat these threats. "I saw how acres of vegetation were being removed, animals displaced and habitats lost without anyone standing up against these injustices," he says. "I saw the urgent need for someone to point out what people were doing and the lies that were being told—like that ecological damages were negligible—and I decided to become a Waterkeeper."

The disclosure of a plan for a mega-development project called Paradise of the Sea, which would illegally destroy 260 acres of mangroves, stirred Patterson to action in defense of the bay. In 2005, with the help of a La Paz-based environmental law organization, he initiated legal measures seeking reconsideration of the permits granted for the development. A year later Patterson attended the Waterkeeper Alliance annual conference in San Francisco and began pursuing his new life as the La Paz Coastkeeper. "The annual conference allowed me to meet people who are committed to protecting our world," he recalls, "and that inspired me to continue fighting for this cause."

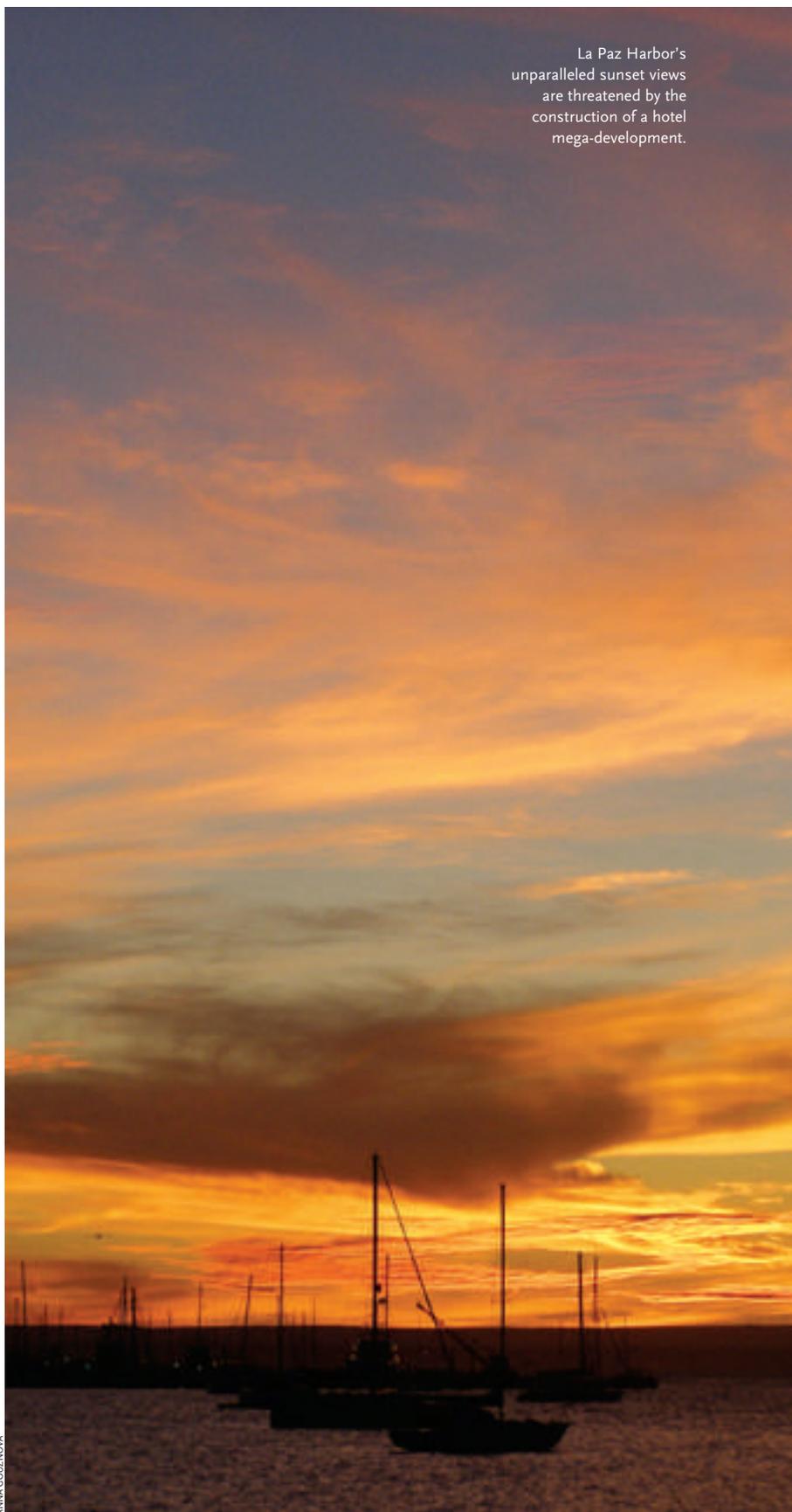
Although the Paradise-of-the-Sea development is under way, Patterson has been successful in raising awareness about the effects of unchecked development and in organizing opposition. His ability to bring together local citizens and representatives from local NGOs and La Paz's university community have made Patterson a particularly effective advocate for a sustainable approach to development that will preserve the beauty of the Bay of La Paz for tourists and locals alike.

Loreto Bay

Further up the peninsula's east coast, a two hour drive northeast of San Carlos and Magdalena Bay, Loreto Baykeeper Laura Escobosa faces similar challenges. Loreto Bay National Park covers the bay, five large islands, 19 islets and a diverse array of habitats. Of the 3,452 marine and terrestrial species documented in and around the Sea of Cortez, 40 percent can be found within this park. But the park is in grave peril.

The Urban Development Plan proposed by FONATUR, Mexico's national agency for promoting tourism, and accepted by Loreto's

La Paz Harbor's unparalleled sunset views are threatened by the construction of a hotel mega-development.



ANNA GOLIZNOVA

Espiritu Santo Island off La Paz includes a critical sea lion rookery.



ANNA COLEMAN

municipal government is expected to result in a drastic increase in the number of tourists and residents in the area. In 2001, the population of Loreto was 11,812. If development continues at its projected rate, by some estimates the population will reach 240,000 by 2025.

The Loreto Bay Company has already built Golden Beach, a master project with an 18-hole golf course, 1,600 hotel rooms, 6,374 houses, restaurants, a spa and a marina. Just north of the city, a Spanish group is developing Loreto Paraiso, which will boast 12 hotels with a total of 7,000 rooms, four golf courses, 6,500 residential units and a harbor that will dock 1,000 boats. A proposed series of marinas, Puerto Cortez, will attract growing numbers of recreational boaters, increasing the number of boats visiting the Sea of Cortez from about 8,000 per year to nearly 76,000 annually 20 years from now. None of these elaborate schemes incorporates adequate waste management systems. The possible damage from such a rapid increase in population could utterly destroy Loreto's unique environment.

Escobosa has worked tirelessly organizing community opposition and making sure local concerns about these development proposals are heard. Thanks to her efforts, town hearings have

been held where the developers have had to explain the effects of their projects, building awareness and opposition in the community. "We won't get a second chance to save this sea," she says.

Punta Abreojos

Just south of Punta Abreojos, a fishing community 450 miles from the U.S. border on Baja California's Pacific coast, lies the San Ignacio Lagoon. Fifteen miles long and nine miles wide, it is one of the last remaining undisturbed breeding grounds of the Pacific gray whale.

While industrial pollution and development have not been issues—the population of Punta Abreojos hovers around 1,000—illegal fishing threatens this habitat. Taking abalone, lobster and sea turtles is against the law, but the law is not enforced.

In an effort to preserve the turtle population, Punta Abreojos Coastkeeper Javier Villavicencio works with the Tortugero Monitoring Group of the Californias, a network of fishermen turned conservationists that spans the peninsula, reporting the abundance, distribution, growth rates and mortality incidence of sea turtles.

Villavicencio is also organizing opposition to a proposal by the Mitsubishi Corporation to build a

salt factory and attendant housing development. And his work with a fishing cooperative in the stewardship of the resources in their watershed has been so effective in managing the lobster fishery that they have been awarded the country's first eco-certification to such a facility.

Bahía de los Ángeles

At the northern end of the Sea of Cortez, Bahía de los Ángeles Coastkeeper Gustavo Danemann heads the peninsula's newest Waterkeeper group. Like his fellow Baja Waterkeepers, he is leading local citizens in the fight against the excessive tourism development and overfishing that threaten this ecologically important area.

In 2007, in response to vigorous advocacy by Pronatura Noroeste (the parent organization of Bahía de los Ángeles Coastkeeper), the Mexican government established the Biosphere Reserve Bahía de los Ángeles y Canales de Ballenas y Salsipuedes along the eastern coast of the state of Baja California. Unfortunately, follow-up and enforcement by the authorities has been lacking. To strengthen the hand of the Waterkeeper and its allies, Danemann has gathered and published scientific data on the area to serve as baseline information from which the impact of future tourism-development proposals can be assessed.

Back in Puerto San Carlos, at the Magdalena Baykeeper's storefront office in the town's main plaza, Julio Solis is still at his desk, though the plaza's other stores are shuttered for the evening. This is not the life he had planned for himself, but he has no regrets. He is fighting for the things he loves most in this world.

Already well known as one of the most outspoken conservationists in Baja, Solis speaks with passion about the struggles of these last four years and of his work with all of the region's Waterkeeper organizations—fighting against private and governmental schemes promoting tourism at the expense of Baja's irreplaceable natural treasures. "I've always been a rebel," he says. "But now I'm a rebel for conservation."

He marvels at what he and the other Waterkeepers have achieved in such a short time.

However, he knows there is still so much to be done in the fight against planned mega-developments and their powerful backers in business and government.

It would be easy to label the efforts of Baja's Waterkeepers as quixotic. Neither the odds nor time are on their side. But the fire in Solis's eyes and in his voice tell you that it would be a mistake to bet against this man and his movement.

"Since it is humans who are at fault for the damages to our world, it is we who must fix these problems," says Solis. "No one has the right to destroy our heritage." Those who would try are in for the fight of their lives.



Trash litters the coastline of Puerto San Carlos, as it does many of Baja's beaches, because of a chronic lack of sanitation services.

ANNA GOIZNOVA



La Paz Coastkeeper only recently launched their first official boat, which was donated by a local supporter.

ANNA GOIZNOVA



New Blue Legacy

California's Waterkeepers are Pioneering
America's First Marine National Parks.

**By Linda Sheehan,
Executive Director,
California Coastkeeper
Alliance**

If there is any stronger and more effective advocate for our waters than a Waterkeeper, it's a group of Waterkeepers working together. Take, for example, the California Coastkeeper Alliance (CCA)—which came together in 1999 as a coalition of Southern California Waterkeepers working to implement a giant-kelp restoration project. Launched in 2001, the six-year project re-established nearly 200,000 sq. feet of kelp beds, most of them in Santa Monica Bay, and educated the public about the critical role of kelp forests in marine ecosystems. CCA has since expanded to include all 12 California Waterkeepers, spanning the state's entire coast.

CCA's strength shows most clearly when its members work closely on a joint venture. A good example is the organizations' work on the implementation of the California Marine Life Protection Act (MLPA). Passed in 1999 with the strong support of California Waterkeepers, the MLPA directs the California Department of Fish and Game to develop and manage a network of marine protected areas off the state's shores. Similar to national parks on land, marine protected areas are designated for preservation by regulation of activities within their boundaries. The goals of the MLPA are to protect the natural diversity and abundance of marine life and the integrity of marine ecosystems; improve recreational, educational, and study opportunities consistent with

protecting biodiversity; and preserve the state's natural, cultural and historical marine heritage.

To implement the MLPA, California divided its coastal waters into several "study regions," each with its own Science Advisory Team, Regional Stakeholder Group and Statewide Interests Group. During the MLPA process, scientists identified hundreds of species of fish, birds, marine mammals, invertebrates and plants likely to benefit from marine protected areas, and researched ecosystems important to the survival of those species.

By 2007 the Fish and Game Commission had established 29 marine protected areas covering 204 sq. mi., including 85 sq. mi. designated as no-take zones in the first study region, the Central Coast. The North-Central Coast's protected areas are to be established this summer; the South Coast's in late 2009, the North Coast's in 2010, followed by San Francisco Bay's. The entire network of protected areas should be in place by 2011, making California the first state to enjoy the benefits of a scientifically conceived network of marine protected areas.

The California Coastkeeper Alliance and its member Waterkeepers, with their unique blend of statewide and local expertise, have been key participants in the implementation of the MLPA. The state has appointed CCA to the Statewide Interests Groups for all three study regions to date, enabling

California's Waterkeepers to present their perspectives. In particular, CCA has emphasized the need to protect water quality in the marine protected areas, a critical issue that might otherwise be given insufficient attention in a process driven not by a water-resources agency but by the state's Fish and Game department. For their part, the individual Waterkeepers, with their close connections to local communities, have been actively involved in the development of the proposed boundaries of the marine protected areas in their regions.

In the Central Coast region, the Monterey Coastkeeper and San Luis Obispo Coastkeeper have tasked themselves with educating the public about the 29 newly-designated protected areas in that region, along with supporting enforcement. (Observing that many of the designated areas overlap areas protected by water-pollution laws, San Luis Obispo Coastkeeper Gordon Hensley wryly notes that Waterkeepers' pollution experience is essential to marine-life protection, because "water shouldn't kill the things that live in it.")

In the North-Central Coast region, along the San Francisco Peninsula north to Mendocino County, the Russian Riverkeeper and San Francisco Baykeeper have been making the case for a strong network of protected areas to the Fish and Game Commission, which will make its decision on this network in August. "I took part in the MLPA process after I repeatedly saw endangered salmon and steelhead being targeted by recreational fishermen offshore, where the fish had no protection," says Don McEnhill, Russian Riverkeeper. "Together with other stakeholders, we proposed a no-take marine conservation area in the Russian River estuary and just offshore of the river, which would protect critical summer juvenile nursery habitat in the estuary and adult pre-migration staging offshore."

In the South Coast Region, San Diego Coastkeeper, Orange County Coastkeeper, Santa Monica Baykeeper, Ventura Coastkeeper and Santa Barbara Channelkeeper all have been working to develop marine protected area proposals that best ensure the conservation of important marine ecosystems. San Diego and Orange County sit on that area's Regional Stakeholder Group, and Ventura Coastkeeper is advocating for the first marine protected area to be co-managed by the state and Native American tribes, to best achieve the cultural preservation and education goals of the MLPA. CCA and Southern California Waterkeepers' Giant-Kelp Restoration Project has provided data to guide the Southern California MLPA process, as have Santa Monica Baykeeper's aerial surveys and sub-tidal rocky-reef research. "The sub-tidal research in Santa Monica Bay that we have done with Occidental College now comprises the most comprehensive rocky-reef data set in our area," says Santa Monica Baykeeper Tom Ford, "and we aim to improve it even more

Easy Glider: A sea lion enjoys one of Southern California's giant kelp forests.



to ensure that the MLPA uses the best science to protect our ocean."

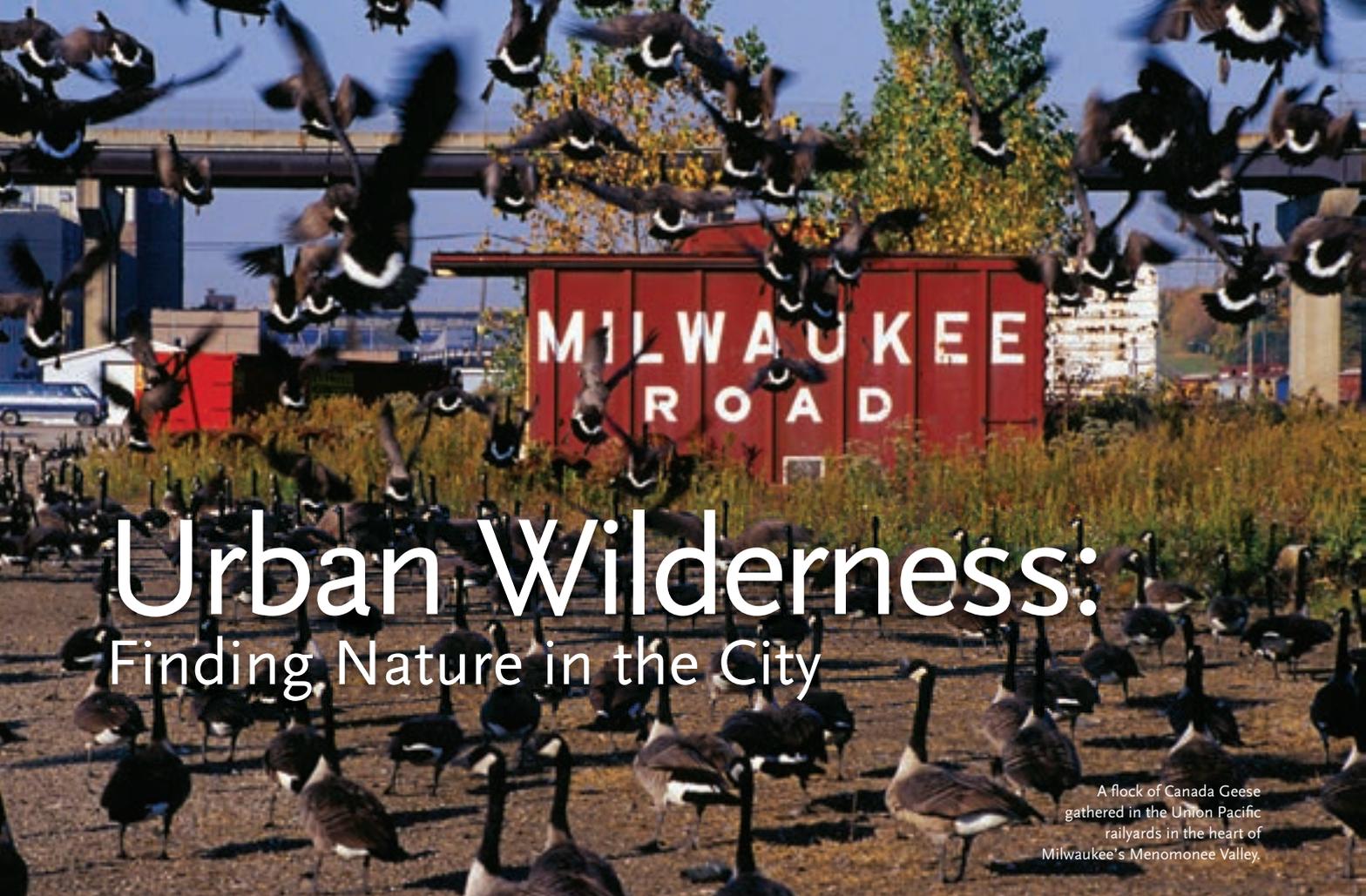
San Diego Coastkeeper's operations director, Kate Hanley, has been coordinating much of the Southern California Waterkeepers' effort. "The Waterkeepers have brought their local expertise and strong voice for marine ecosystem protection to the MLPA Initiative," she says, "and their active role in bridging gaps among interest groups will lead to more effective marine protected areas."

Humboldt Baykeeper will be actively involved in the upcoming North Coast study region process in coordination with Klamath Riverkeeper, and San Francisco Baykeeper will closely track the last study region, in San Francisco Bay.

In addition to weighing in at official MLPA sessions, Waterkeepers send out action alerts and messages to their members to mobilize interested parties throughout the state to give testimony and send in letters in support of marine protected areas. CCA supports the local groups with statewide funding assistance and is coordinating MLPA advocacy. As an appointee of a key state bond oversight committee, CCA also works to provide specific recommendations on bond funding for clean-water projects in designated marine protected areas.

"The California Coastkeeper Alliance's local engagement and statewide reach are a perfect fit for the MLPA," observes CCA's Angela Haren, an appointee to both the current MLPA Statewide Interests Groups and the state task force charged with directing state water-quality funding to projects that prevent pollution in marine protected areas. "Together, the statewide Alliance and regional Waterkeepers are leading the way in California for healthy, thriving marine ecosystems."

For more information on the California Coastkeeper Alliance's marine ecosystem protection program and Giant Kelp Restoration Project, see <http://www.cacoastkeeper.org/marine-protected-areas.php> and <http://www.cacoastkeeper.org/kelp-restoration.php>. For information on the Alliance's 12 Waterkeeper organizations, see <http://www.cacoastkeeper.org/california-waterkeepers.php>. To learn more about California's Marine Life Protection Act Initiative, see <http://www.dfg.ca.gov/MLPA/>.



Urban Wilderness: Finding Nature in the City

A flock of Canada Geese gathered in the Union Pacific railyards in the heart of Milwaukee's Menomonee Valley.

EDDEE DANIEL

By Eddee Daniel

Eddee Daniel is a photographer, writer, activist and arts educator, and serves on the board of directors of Milwaukee Riverkeeper. He is the author of *Urban Wilderness: Exploring a Metropolitan Watershed*, published in 2008 by the Center for American Places at Columbia College, Chicago and distributed by the University of Chicago Press. It is the result of Daniel's six-year exploration of an urban watershed, the Menomonee River in Southeastern Wisconsin.

We put in, as usual, next to the concrete fishing pier in Lincoln Park. At this annual event, sponsored by Milwaukee Riverkeeper, about 40 people, in 15 canoes and a handful of kayaks, pick up their paddles and leave Milwaukee behind. Immediately the natural world surrounds us. Three painted turtles drop off a log as a kayak veers toward them. A great blue heron looks up from its catch in the shallows, then erupts into flight. A dense wall of foliage lines the banks of the impounded lake.

If the dam that creates this lake is removed, as advocated by Milwaukee Riverkeeper, this voyage will become even more organic. After we portage around the dam, there are fewer and fewer signs of the city as we wade into the rocky backwaters. Enormous black willows and cottonwoods lean over and nearly obstruct the two narrow channels. All of the canoes and most of the kayaks portage the four-foot tumbling falls that come next. A few daring kayakers take the plunge.

A trio of radio towers briefly reminds us that we are not nearly as isolated as we've come to believe. Then, below the Capitol Drive bridge, the wooded riverside bluffs become steeper and higher, and again we are free to imagine ourselves anywhere but in a densely populated city. We scrape the river bottom, push on to deeper pools and watch the fish alongside. An angler in hip boots knows his secluded spot has been compromised; he casts idly,

waiting for our flotilla to pass.

We proceed, running gentle rapids, trying to identify birds and wildflowers, soaking up sunshine; until, three hours later, we shoot the flume at North Avenue. Then, catching our breath, we stare at the canyon of condominiums ahead, suddenly confronting a cacophony of construction noise. It is hard not to be stunned by the contrast. For several miles, only the occasional bridge and a couple of tall buildings broke our spell. And although it has been a near magical interlude, it is no trick, the feeling of having had a wilderness experience in the middle of the city: it is an essential part of the character of the Milwaukee River.

Efforts are under way to preserve not only the land along the river corridor, but also the viewshed within it, thus maintaining the enchantment of urban wilderness. The Milwaukee River Greenway efforts are being spearheaded by Milwaukee Riverkeeper, along with the River Revitalization Foundation and the Urban Ecology Center, to protect over eight miles of river and a combined 800 acres of natural area within the city. Like many cities around the country, Milwaukee is rediscovering and reinterpreting its relationship with its rivers and with nature.

The value of urban natural areas has been recognized since Frederick Law Olmsted formulated his widely emulated principles of

landscape design in the 19th century. Olmsted believed in cities, but he also believed that their inhabitants should live near the tranquility of natural scenery to relieve the stresses of work and the oppressiveness of enclosed spaces or hard surfaces. Olmsted's justly famous Central Park in Manhattan is the crown jewel of New York City's 38,000 acres of parkland, many of which still provide the element of surprise and discovery that my fellow boaters and I experienced along the Milwaukee River.

During the early 20th century, many cities across the United States created beautiful park systems based on Olmsted's ideas. Milwaukee had the advantage of not only three parks designed by Olmsted himself, but perhaps more significantly, a vision and plan implemented by his admirer, Charles Whitnall. As the first parks director, Whitnall took Olmsted's model and organized Milwaukee's park system along its network of rivers and streams. Cheryl Nenn, Milwaukee's Riverkeeper, says enthusiastically, "Milwaukee is unusual among American cities because it has such an extensive system of riverside parks and natural areas."

In Milwaukee and elsewhere, the impetus to create urban parks diminished in the rush to live in ever-expanding suburbs. More recently, the importance of urban natural areas has regained the respect it once commanded, the combined result of the realization of the limitations and excesses of suburban sprawl, and the urgency of contemporary environmental issues such as biodiversity, habitat degradation, water quality, and sustainable living. Urban green space, important as it is for a variety of recreational uses, contributes much more to the community, especially when it includes "wilderness" areas. The concept of an urban wilderness is a relatively new one, and its success at capturing the public's imagination is due in large part to a hunger for what it represents, as well as its inherent virtues.

Defining urban wilderness proves to be a bit of a Rorschach test, revealing more about a person's perspective and values than the characteristics of a particular landscape. Definitions range from the simply aesthetic—the unkempt appearance of low-maintenance parklands, for example—to the scientific, with its concern for native species, soil conditions and biodiversity.

In my book, *Urban Wilderness: Exploring a Metropolitan Watershed*, I wander freely among these often divergent conceptual terrains. But the definition I prefer does not involve physical conditions in the landscape, but rather the psychological, and even spiritual, experiences that are available to people who are immersed in a natural environment. When we shoot the Milwaukee River rapids, fish in its pools, or



EDDIE DANIEL

simply walk along riparian trails in the shade of silver maples and poplars, stopping to sample wild black raspberries in thickets, it is not mere recreation. These experiences provide a wondrous connection to the earth and to the wholeness of existence. And when children are exposed to these experiences they learn something much more important than natural sciences, biology and ecology. They learn the value of conservation and the appropriate stewardship of nature.

Where we can go to have these experiences is a critical question at this point in our nation's history. "It's immeasurably important," says Nenn, "to have a refuge to go to in the middle of the city, to calm your mind, especially in current economic conditions when people have less money to travel." Even in better times there are people in inner cities all across the country without the resources to travel to and explore distant parks or nature preserves. Nenn points out that states usually preserve large or pristine areas, and land trusts tend to acquire high quality land with an eye for conserving critical species habitats. Smaller urban properties with less biological significance are given lower priority. However, they serve a much greater population, and a much greater purpose, perhaps.

The urgency of this issue is illustrated by the contrasting experiences of two other urban Waterkeepers. Sally Bethea, Atlanta's Upper Chattahoochee Riverkeeper, says that although Atlanta created parkland in a "string of pearls" along a 48-mile stretch of the river, "metro Atlanta has very minimal green space as compared to other cities of its size. Development has been taking place at a rate of 55 acres of hard surfaces every single day for the past decade."

The autumn colors of a young poplar underneath the freeway bridge that crosses over the Menomonee Valley in downtown Milwaukee.

The concept of an urban wilderness is relatively new...its success at capturing the public's imagination is due in large part to a hunger for what it represents.



A small dam and a concrete channel were removed from this section of the Menomonee River to improve water quality and enable fish migration—a collaborative effort by Milwaukee Riverkeeper and the Milwaukee Metropolitan Sewerage District.

EDDIE DANIEL

Farther north, Baltimore is home to the most polluted river entering the Chesapeake Bay—the Patapsco. According to Baltimore Harbor Waterkeeper Eliza Steinmeier, because urban rivers so often are covered over with concrete and freeways, many residents don't even know where they are. The waterfront is also industrialized and mostly bulkheaded. But two efforts are under way in Baltimore to reclaim some of the natural heritage: a trail system linking parks along tributaries to the Patapsco River and a major waterfront master plan that includes preservation of what little remains of natural shoreline. "It's amazing that despite over 100 years of pollution, we still have life in our rivers," Steinmeier says. "It's truly a testament to the resilience of the river system. You can see fish, turtles, crabs, and all kinds of birds. People are often astonished at this fact." Steinmeier recalls once, when she was on patrol in the Waterkeeper boat, a group of schoolchildren called to her hysterically from the shore to come see something. "I thought it was going to be some kind of chemical spill," she says. "But they were pointing to a crab attached to a bulkhead. We need to bring people to the river, show them a living river running through our city, and then they might start to think about how to protect it."

Seeing a crab on a steel bulkhead may seem far from a wilderness experience, but it is a start. Milwaukee may be luckier than most cities, but creating an urban wilderness is an important strategy for conservation everywhere. Indeed, because of the size of the populations they serve and the relative difficulty conservationists face in such settings, cities must be in the forefront of the environmental movement. Some cities have stepped up to the plate, with new standards for "green" building and new awareness of sustainability. But research has made it clear that proximity to nature is critical to developing what environmentalist and author Aldo Leopold called the "conservation ethic." Providing young people with places nearby, where they can form connections with nature, will ensure that this ethic and the values embodied in the Waterkeeper mission will endure.

Cheryl Nenn observes that the density of cities is desirable since it reduces the effects of sprawl, thereby allowing for the preservation of suburban and exurban lands. But it is this very virtue of cities that makes it essential to provide that paradoxical urban wilderness experience in order to prevent alienation from nature, and to create a citizenry that values its stewardship.

EDDIE DANIEL



Colorful dame's rocket reflected through a concrete culvert.

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The Thimpu River in Bhutan, one of many rivers in the region whose health is threatened by the rapid melting of the Himalaya's glaciers.

The Struggle for Water at the Top of the World

Almost half of the world's people depend on the water flowing out of the Himalayas. Climate change is making it harder to share it.

SCOTT EDWARDS

By Scott Edwards,
Legal Director,
Waterkeeper Alliance

For centuries the Kosi River swept south from its sources in the Himalayas in Nepal and Tibet, ignoring all the artificial political boundaries as it carried more than 80 million tons of fresh silt deposits and monsoon waters to the plains of northern India every day. Once it crossed into India, the Kosi followed a myriad of ancient, braided pathways through the state of Bihar before joining the Ganges River to the south. And for countless generations, inhabitants of the Bihar plains lived with the periodic flooding and unpredictable course of the river. They also suffered the sometimes devastating effects of the seasonal flows that earned the Kosi River the nickname "The Sorrow of Bihar."

In the mid-1950's, the Indian government decided to try to tame the Kosi River. With the cooperation of Nepal, the government began constructing a series of embankments along the eastern and southern riverbanks in southern Nepal. The plan was to deny the river its historic route through the Bihar plains and force a consistent pattern of flow down one of its more western channels. These embankments were completed in the early 1960's.

On August 18, 2008, the Kosi River decided it was time to reclaim its past. The southern Nepal embankments failed and the waters once again

roared down the plains of Bihar, charging through dry riverbeds that had been long since settled and cultivated by millions of people. The flood destroyed 250,000 homes, leaving more than two million people homeless and causing scores of deaths. A quarter-of-a-million acres of much-needed crops, including vegetables, wheat and rice, were submerged and destroyed. The total economic impact is still being calculated.

In January 2009 I visited Dr. Vandana Shiva, physicist, environmental activist and the founder of Waterkeepers India, and representatives from India's 12 Waterkeeper organizations, in New Delhi for an update on the local programs. I was also there to take part in a planned regional meeting among all of our Asian Waterkeeper programs in China, India and Nepal. Also attending this gathering was one of our newest Riverkeepers, Sharif Jamel, from the Buriganga River in Dhaka, Bangladesh.

The time we spent together provided a unique opportunity for the Indian and Bangladeshi Waterkeepers to learn about one another's cultures and watersheds, to share ideas and strategies and to talk about mutual concerns. Given the recent Kosi flooding, damming and the regional effects of other water-diversion projects were at the top of the list of items for discussion and reflection.

The conversation quickly expanded to the issue of cross-boundary impacts of governmental decisions that were often made in a vacuum, with little regard for the consequences on neighboring states. For example, the Indian Waterkeepers were surprised to learn from their Bangladeshi colleague that government plans in eastern India to dam the Brahmaputra River would lead to a 40 percent loss of water for an already drought-ridden Buriganga River watershed in downstream Dhaka.

After two days of discussion, it became abundantly clear that one of the biggest water issues facing southern Asia is the failure of Himalayan nations to recognize the impact that their actions are having on neighboring countries and communities. River embankments in Nepal burst wide open causing devastating flooding in downland areas of India. While India is rushing to build dams across the northern reaches of the country, China seeks to outdo the Indians on the same river in Chinese territory. Neither government contemplates the dire consequences that their activities will have on Bangladesh and its reliance on seasonal flows from both Indian- and Chinese-originated rivers. At the same time, both China and India are constructing mega coal-fired power plants with little regard for their impact on climate change and the glaciers in Nepal, Tibet and Bhutan, which are melting at a rate faster than anywhere else on earth.

Luckily, largely driven by concerns of climate change and water scarcity issues, there is a growing awareness among Himalayan communities of the need to build systems of communication and cooperation that transcend political boundaries. Fixing problems on a local level, while critical in many ways, cannot solve the many problems facing a region where hundreds of rivers flow out of mountains controlled by other governments.

Dr. Shiva and India's Waterkeepers have taken the lead in developing strategies to form relationships among community activists across national borders. They are planning a *satra* – a community-based march and gathering – that will wind its way along the Brahmaputra River on the Indian side of the border with Bangladesh. The Buriganga Riverkeeper, Sharif Jamel, will lead a similar march on the Bangladesh side, and the two groups plan to meet right on the boundary between the two nations for a day of peaceful protest, awareness-building and consensus. Other possible *satras* being considered include one where the Kosi River flows from Nepal into India, the site of a recent devastating flood in India caused by the breach of an artificial embankment in Nepal.

To compensate for the lack of communication and cooperation among neighboring Himalayan nations, Dr. Shiva has also proposed a treaty among all Asian Waterkeepers and other Asian advocates. Where governments are failing, the treaty would represent



SCOTT EDWARDS



SCOTT EDWARDS

a successful effort by ordinary citizens to craft an agreement for dialogue, education and cooperation.

At the 2009 Waterkeeper Alliance conference in New York City in June, Waterkeepers from India, Bangladesh, Nepal and China will be working on the wording of the pact. It is our hope that the treaty can be finalized for an Asian regional meeting in late 2009 or early 2010. Waterkeepers India is planning a range of activities to mark and celebrate the signed treaty during the 2010 Kumbh, one of the holiest of river festivals, which is held in India only once every 12 years.

Top: Boatmen on Bangladesh's Buriganga River, which could lose critical amounts of water to the diversion schemes of neighboring nations upriver.

Above: Child at a Katmandhu pottery market, one of many water-intensive local industries threatened by the effects of climate change on Nepal's glacial-fed rivers.

Middle Han Waterkeeper operates China's first nongovernmental pollution-control boat.



Green Leap Forward?

China's Middle Han Waterkeeper is a leader in the country's bottom-up movement to put sustainability in front of economic growth.

STEPHANIE VON STEIN

By Stephanie von Stein, Asia Program Coordinator, Waterkeeper Alliance

Even in the midst of the global economic downturn, China's leadership continues to push for rapid economic development, but forces stronger than the global financial system may threaten China's future growth. After decades of breakneck economic expansion, China's natural resources have been poisoned and virtually exhausted. And of all the country's environmental challenges, it is the water crisis that could cause China's economy to slow dramatically in the near future.

I recently visited China with Pete Nichols, the Humboldt Baykeeper in Northern California, to assess the fledgling Chinese Waterkeeper movement. It is easy to lose hope as you travel around China seeing the constant construction going on to satisfy the needs of a vast population requiring food, water and shelter, and desiring a modern standard of living. But when you board the Middle Han Waterkeeper's boat—the first nongovernmental pollution-patrol boat in China; or when you watch Yun Jianli, the Middle Han Waterkeeper, in action, spiritedly educating practically every human being she encounters; or when you attend a routine river cleanup organized by the Middle Han Waterkeeper, and 15,000 people show up, you begin to have hope that China yet

may be able to reverse its environmental crisis.

Economic development and climate change are moving China toward overall water scarcity. Climate change is exacerbating the shortage of water in China's already arid industrial north, and rampant water pollution throughout the country renders a large portion of available water unusable for consumption, agriculture or even industry. In order to partially alleviate the water shortages facing the North China Plain, home to 200 million people, the Chinese government has embarked on a massive water diversion plan, first conceived by Mao Zedong in 1952.

The South-North Water Transfer Project, as it is officially known, would channel 12 trillion gallons of water per year from the relatively wet southern and western regions of China to the drier north via three main water channels—an eastern, central and western route. In 2002, the plan was approved and construction begun on the eastern route, running from the southeastern provinces of Zhejiang and Jiangsu up to Beijing. A year later, construction began on the central route, which originates in Hubei Province. Work has not yet begun on the controversial western route, which would involve tunneling through the Himalayas in

Tibet to channel water from the Yarlung Tsangpo River to China's northwestern cities. The total *internal* cost of the project is estimated to be about \$62 billion. The external costs of the project will be enormous. Many prominent scientists and environmentalists have sounded alarms about those heavy external costs, which include massive forced relocations, loss of cultural artifacts, and irreparable damage to rivers connected to the system.

The Han River in Hubei Province, home to the Middle Han Waterkeeper, is the river that will suffer most when the central route begins operating in 2014. A tributary of the Yangtze, the Han will be the water source for the route. Yun Jianli, Middle Han Waterkeeper, is working against time to ensure that her river is clean enough to withstand the impending loss of one third of its flow to the South-North Water Transfer Project's Danjiangkou Reservoir, 50 miles upstream of her hometown, Xiangfan.

Yun's parent organization, Green Hanjiang, began working to clean up the central section of the Han River in 2002. Yun says that because the water transfer project cannot be stopped, the best strategy to save her river is to work to reduce pollution in it as much as possible, so that the quality of the remaining river water will not plummet to an unusable level after the opening of the water transfer project in 2014.

Since Yun joined Waterkeeper Alliance as the Middle Han Waterkeeper in the spring of 2007, she and her small staff have trained hundreds of villagers along the central reaches of the Han River and its tributaries to serve as local water quality monitors, who can alert the Waterkeeper to changes in water quality in their local stretch of the river. Armed with their reports, she and her staff can work with the local environmental authorities to resolve problems at their source.

Since the acquisition of a patrol boat in March 2008, the ability of the Middle Han Waterkeeper to patrol and educate has improved significantly, and the Waterkeeper frequently assists the local environmental authorities in investigating suspected water pollution violations. For example, while on patrol the Middle Han Waterkeeper staff discovered higher than normal pollution levels in the river near two chemical fiber manufacturing plants. The Waterkeeper worked with local environmental authorities over the course of several months and finally secured a commitment from the two manufacturers to install improved wastewater treatment facilities at their factories.

The Middle Han Waterkeeper believes that, in addition to the enforcement of water pollution laws, citizen education is a key to the future of the Han River. Yun estimates that the Middle Han Waterkeeper program reached 22,000 citizens

over the course of 2008, including students, office workers, villagers and officials up and down the central section of the Han River. Waterkeeper provides information on sources of pollution, and teaches the practical steps individuals can take to avoid polluting their waterway. The fact that the Middle Han Waterkeeper receives at least one tip per week on its water pollution hotline evidences a growing awareness on the part of local citizens about water pollution and their right to be citizen advocates for their rivers.

The Middle Han Waterkeeper is part of a small national network of water advocates who provide data for a web-based water pollution map run by a private, not-for-profit organization in Beijing headed by one of China's most prominent environmental heroes, Ma Jun. The map is an exciting and important tool in China's efforts toward solving its water pollution crisis. Thanks to its constant presence on the river and its extensive network of volunteer monitors, the Middle Han Waterkeeper program is pioneering citizen-led environmental advocacy in China, a movement that must play a prominent role if China is to move toward a more sustainable future.

Middle Han Waterkeeper Yun Jianli, right, with another local water activist, at the Danjiangkou Dam, which will siphon off one-third of the Han River's water when the central route of China's South-North Water Diversion Project begins operation in 2014.



STEPHANIE VON STEIN



Numbers Game

Maybe the biggest obstacle to getting most people to stand up and take notice of global climate change is that it can all sound pretty abstract—as if it were someone else’s, someplace else’s problem. So here’s a number that should bring things down to earth—350.

Three-hundred-and-fifty turns out to be the most important number in the world, even though no one knew it just 18 months ago. Our best climatologists now tell us that 350 parts per million is the most carbon dioxide we can have in the atmosphere without wrecking the planet. Problem is: we’re already at 387 ppm. That’s why the Arctic is rapidly melting; why Lake Powell, the second largest reservoir in the U.S., may never fill in again; why the pH of the oceans is rapidly changing, with dire consequences for everything that lives there.

As part of the giant 350.org global day of action, on the 24th of October, it is vital that Waterkeepers everywhere help organize actions and raise awareness. If we don’t, our already rising oceans will cause salt pulses to enter inland rivers; melting snowpacks and increasing drought will turn many streams into trickles; and vanishing icepacks will mean the Great Lakes will be increasingly exposed to the sky, dramatically lowering their levels.

But the real reason to take on action on the 24th is because Waterkeepers, and their thousands of supporters in communities across America and across the world, have boats. And we need your boats: canoes, rafts, schooners, yachts, sailboats, dinghies, those inner-tubes-with-legs that fly fishermen use. If it floats, we need it. Badly.

If scientists have gotten the message, our political leaders haven’t. They’re gathering in Copenhagen in December to draw up a new treaty on the climate. But so far their drafts are too timid — they don’t reflect the latest science, which calls for urgent action, and soon.

So come fall, about six weeks before Copenhagen, we at 350.org are organizing one heck of a global bash. On October 24, there will be rallies and events in thousands of locations around the world, all designed to draw attention to that number: 350. If we do our job well, by the next day the most important number in the world will also be the most well-known. Think of it as a march on Washington, except different.

For one thing, it’s going on where you already are. It’s incompatible with our message to drive to Washington, D. C. to protest global warming, sure, but more to the point, you know what counts in your community, what aspects of the natural world make your neighbors love it and want to defend it, whether it’s eating crabs, fishing for trout or rafting whitewater.

For another, this won’t involve quite so much standing around listening to speeches. It’s fine

to do a little of that, but what we really need is for you to come up with something creative that will drive home that number. We’ll have climbers high in the Himalayas stamping the number into the snow, and 350 scuba divers off the Great Barrier Reef. The other day we received an email from Abakaliki, Nigeria, where organizers are planning to get 3,500 people to plant 3,500 trees. I’d never heard of Abakaliki before — but then, the people of Abakaliki have probably never heard of Winston-Salem, or Portland, or Tallahassee, or Augusta, or wherever you might be.

That’s the point. When the day is over, we’ll have thousands of images from around the world, and we’ll make sure that every delegate to that conference in Copenhagen, and every member of every parliament, knows what happened in their district or state or capital. (Something else about Abakaliki, and the Maldives, and Bangladesh, and the Congo, and Quito, and a thousand other places we’ve heard from about participating: they haven’t put much carbon into the atmosphere. This predicament isn’t their fault.)

We will have succeeded on October 24, if delegates arrive in Copenhagen knowing that they must do more than simply produce a treaty. They must produce a treaty that actually respects the science, that answers the question: Will this stabilize the planet? Will it keep rivers flowing, marshes thriving, fish swimming?

There are no guarantees. Some scientists think we’ve already waited too long to start now, that the changes occurring in the Arctic and elsewhere have built up such momentum that they can’t be reversed. Some political scientists think that the big energy companies have so much political power, they will inevitably defeat our best efforts. They may be right — we clearly should have gotten started long ago. But the best science shows there’s still a narrow window, closing fast, through which we can scamper.

We can’t do it one light bulb at a time — that won’t bring change fast enough. But we can do it one rally at a time. I close my eyes and imagine 350 fishermen fly-casting from the same bank, or a team of canoes forming a “350” in a river somewhere, or 350 people swinging off a rope swing...

Waterkeepers know how to organize people. They know how to spread the message that both their local waterway and the global water system are under grave threat. That knowledge, and the selflessness that goes with it, are what we’re counting on at 350.org, and on October 24th.

By Bill McKibben

Environmentalist and author Bill McKibben led the organization of the largest demonstrations against global warming in U.S. history in 2007. His first book, *The End of Nature*, published in 1989, is regarded as the first book for a general audience about climate change. He is a scholar in environmental studies at Middlebury College where he also directs the Middlebury Fellowships in Environmental Journalism. He is now leading a global campaign to fight climate change with the group 350.org.

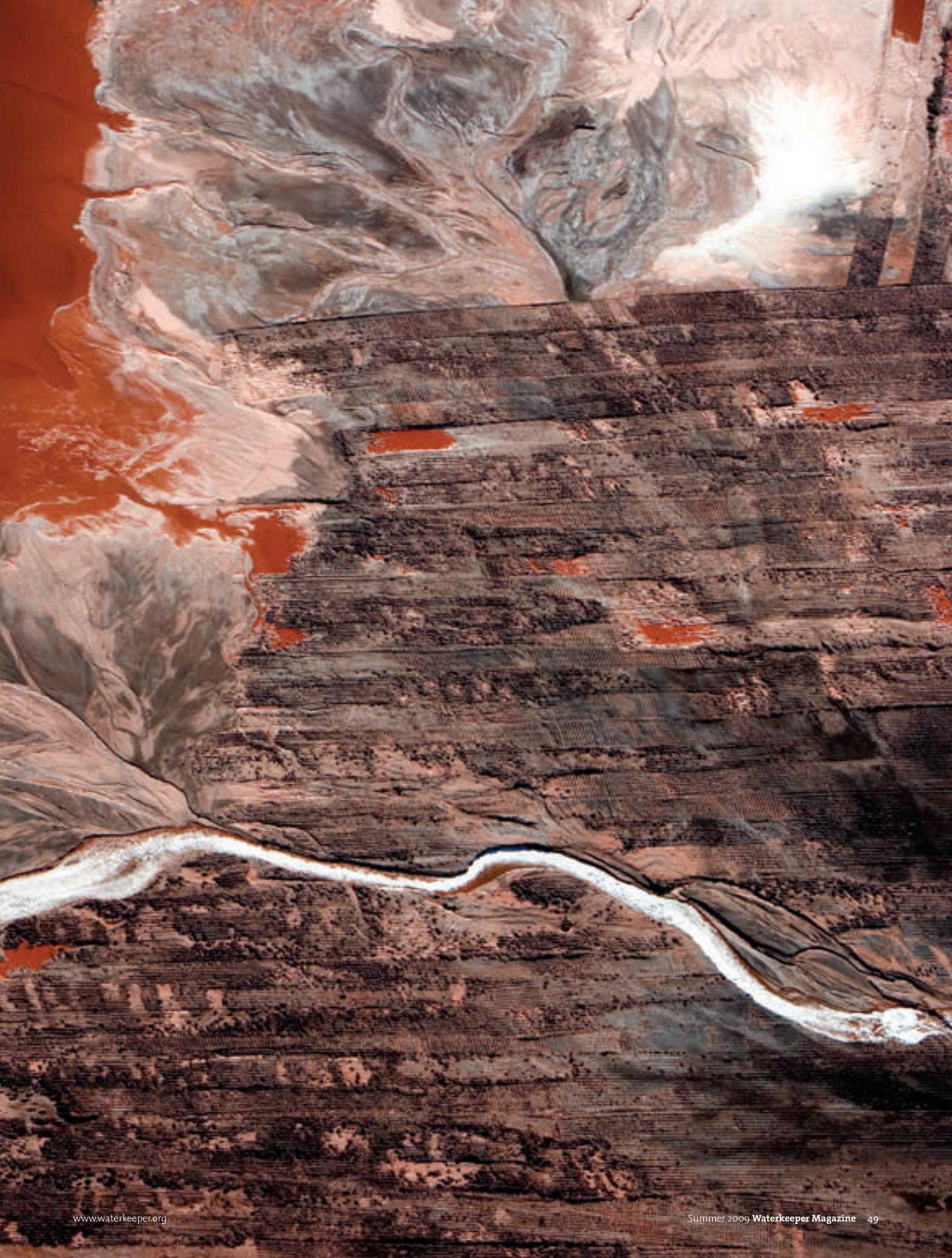
On The Water

J Henry Fair

In the images in his “Industrial Scars” series, photographer J Henry Fair documents the unsustainable consumption of the earth’s natural resources. His aim, he says, is to make the photos “beautiful and frightening simultaneously.”

This aerial photo, titled “Expectoration,” shows a plume of foam in bauxite waste—called “red mud”—in the impoundment at an aluminum processing plant in Louisiana. Producing aluminum metal involves refining bauxite ore, using caustic chemicals and tremendous amounts of electricity to produce alumina, and the electrolytic reduction of alumina to produce aluminum. This captures the disposal of the byproducts, which include large amounts of toxic lead and mercury. Also, during primary aluminum production, PFCs (CF4 and C2F6) are emitted as byproducts of the smelting process, both significant greenhouse gases. You can view more of Fair’s amazing, alarming photos at <http://www.industrialcars.com>.







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