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They are the largest group of freshwater lakes on earth, containing 95 percent of the United States' supply of fresh surface water and 20 percent of the world's. They touch eight U.S. states and two Canadian provinces, and are often called the U.S.'s "third coast," since they contain more coastline than the east and west coasts of the lower 48 states combined.

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PHOTO BY BRENT FOSTER

The Great Glacier's Greatest Gift By Cheryl Nenn, Milwaukee Riverkeeper

THE U.S. AND CANADA ARE BLESSED WITH THE WORLD'S LARGEST FRESHWATER SYSTEM, AND ARE MASSIVELY CHALLENGED TO PROTECT AND SAVE IT.

They are the largest group of freshwater lakes on earth, containing 95 percent of the United States' supply of fresh surface water and 20 percent of the world's. They touch eight U.S. states and two Canadian provinces, and are often called the U.S.'s "third coast," since they contain more coastline than the east and west coasts of the lower 48 states combined. The lakes are so large that they create their own climates and microclimates, as well as their own version of tides called "seiches," which create standing waves caused by wind and atmospheric pressure. These vast and splendid inland seas were a gift from the glaciers, and only one percent of the water is renewable.

Today the Great Lakes face many threats. There is increasing evidence of climate change in the Great Lakes region—air and waters are warming, causing frequent and unusually strong storms that have resulted in massive flooding and an increase in sewage spilling into the Lakes from the rivers that flow into them. While ocean levels are predicted to rise with climate change, due primarily to melting ice, Great Lakes water levels are predicted to decline, because of increased evaporation caused by higher water temperatures in summer and lower ice-levels in winter. Lake Michigan and Huron water levels are projected to fall by one-to-two feet by the end of the century. Such changes would be especially problematic in fragile ecosystems such as Huron's

Georgian Bay, where wetlands perched on rocky shores would be unable to "migrate" or adapt to changing water levels, leading to loss of fish habitat and, in certain areas, ecosystem collapse.

Old, failing infrastructure in communities around the Lakes contributes to an increase in sewage overflowing into waters that abound with swimmers and provide drinking-water for more than 40 million people. Four of the five poorest major cities in the U.S. border the Great Lakes—Detroit, Buffalo, Cleveland, and Milwaukee—and many are hard-pressed to fund repairs of failing pipes and sewage treatment plants. Stormwater overflows, from farms as well as more-populated areas, carry nutrients into the Lakes that cause algal blooms, most dramatically in western Lake Erie. Algae make beaches less palatable for swimming, and some forms, such as blue-green algae (cyanobacteria), threaten human health.

In addition, the Great Lakes are threatened by aquatic invasive species that enter the freshwater system from the ballast of ships traveling from the Atlantic Ocean and the St. Lawrence Seaway. Such ships take on water to stabilize themselves while sailing without cargo, and often dump that water when loading cargo in their destined ports. This ballast water contains a wide variety of living organisms, and in the Great Lakes a new invasive species is now being detected every eight months. Meanwhile, another highly conspicuous invasive species, the Asian carp, has reached the edge of the Great Lakes from the Mississippi River system. These aggressive fish can consume up to 40 percent of their own biomass in one day and have been known to grow to well over 100 pounds. Their voracious feeding habits pose a huge threat to the very fragile fisheries of the Lakes and their many tributaries.

Further threats to the Lakes include conversion of pristine natural areas to housing developments, including summer homes, and the excavation of sulfide mines. The vast quantities of Great Lakes water are also being increasingly considered for supplying shortages in the U.S. Southwest and Southeast, as well as elsewhere in the world. (The United Nations recently estimated that by 2020 more than 50 nations will be challenged by water shortages.) Eleven Great Lakes Waterkeepers in the U.S. and Canada are working separately and together to address these dire issues. They have joined forces to advocate for passage of the Great Lakes Compact, a 2008 agreement involving eight states and two provinces that assures that Great Lakes water will stay in the Great Lakes by regulating diversions and in-basin consumptive uses of water. Waterkeepers have also commented jointly on proposed U.S. Coast Guard ballast-water rules and on a planned policy that would legalize partial treatment of sewage, and they have helped defeat the Coast Guard's proposed "live fire exercise" or "ammo testing" on the Lakes. The Great Lakes Waterkeepers have also combined their voices to comment on important policy issues such as Asian-carp control and the International Upper Great Lakes Water Levels study (proposing water level management for the Lakes that is more consistent with natural patterns). And they work with the International Joint Commission and other binational agencies tasked with developing a plan to manage and guard the Lakes for future generations.

The Great Lakes of North America are one of the world's most astonishing wonders. They might well be called "The Very Great Lakes," and very great also are the challenges that confront the 11 Waterkeepers dedicated to preserving and protecting them.

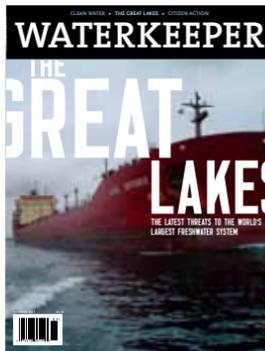


PHOTO COURTESY OF OTTAWA RIVERKEEPER



PHOTO COURTESY OF MILWAUKEE RIVERKEEPER

LEFT: OTTAWA RIVERKEEPER MEREDITH BROWN SURVEYS THE RIVER SHE HELPS PROTECT. ABOVE THIS PAGE: A PUBLIC BEACH ADVISORY ON THE GREAT LAKES. BELOW THIS PAGE: MILWAUKEE RIVERKEEPER VOLUNTEERS LEARN HOW TO TEST STREAM FLOW AND IDENTIFY MACROINVERTEBRATES, 2007.



ON THE COVER:
While residents have adapted to the large shipping channel in their backyards, the St. Lawrence Seaway has had a significant negative impact on the St. Lawrence River's environment.

Photographer: Janet Sullins

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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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more than 190 waterways

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Photo: Rick Dove

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We are a powerful worldwide coalition of nearly 200 local Waterkeeper groups—Riverkeeper, Baykeeper, Coastkeeper and other grassroots Waterkeeper organizations—connected as a unified international force to defend the world's waters during this period of unprecedented crisis.

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Ripples

PHOTO COURTESY OF RUSSIAN RIVERKEEPER



A VIEW ALONG THE RUSSIAN RIVER IN SONOMA COUNTY, CALIFORNIA.

Northern California Groups Raise Their Voices against Gravel Mining

After exhausting all other remedies, Russian Riverkeeper in Sonoma County, California, and the Redwood Empire Chapter of Trout Unlimited filed a lawsuit in January challenging a massive gravel-mining operation that had been approved by the Sonoma County Board of Supervisors in December.

The county's decision allows for the withdrawal of up to 350,000 tons of gravel from the Russian River every year for 15 years, although an environmentally superior alternative that meets most project objectives had been identified in an environmental-impact report. The alternative called for removal of a maximum of 132,000 tons of gravel per year, which would greatly reduce impacts on endangered salmon.

The mining will take place on a 6.5-mile stretch of river located in the lower Alexander Valley near the town of Geyserville. Known as the Syar Alexander Valley Instream Mining Project, it is the first mining project of significance in the lower Alexander Valley in over 10 years. "This approval fast-tracks the mining of gravel at a rate beyond what nature can replenish," says Don McEnhill, Russian Riverkeeper. "That's an approach providing a short-term gain for one business at the long-term expense of residents and wildlife." The project as planned, he explained, would increase air-pollution bank-erosion, and threaten economically important salmon and steelhead that have been prized by generations of anglers.

The county's own gravel-monitoring report in 2009 concluded that the river can only naturally replenish about 181,000 tons of gravel per year, and adverse impacts from

instream gravel-mining to salmon and steelhead are well documented. As recently as the 1960s, tens of thousands of these species returned each year to the river, which once attracted anglers from around the globe to match wits with them. But today, precious little habitat remains for these fish, and they are on the brink of extinction.

"Our kids and grandkids should be able to have the experience of finding, and maybe even catching, native California trout, salmon and steelhead in their historic range," insists Dr. Julie Carlson, president of the Redwood Empire Chapter of Trout Unlimited.

The removal of millions of tons of gravel from the Russian River over the past century has also been blamed for ruining water quality. "Our goal" says McEnhill, "is to see a sustainable project that truly addresses all impacts and not the old boom-and-bust gravel-mining projects that take too much gravel from our river and then shut down for years after harming the river while not offering stable employment."

Greg Loarie, an attorney for Earthjustice, which is providing legal representation for Riverkeeper and the Redwood Empire Chapter of Trout Unlimited, explains that these groups are not categorically opposed to all gravel-mining in the river.

"If there's surplus gravel that can be taken from the river without harming it," he said, "then let's figure that out, but it's clear that this mining plan is way too big for the size of this river."

"The Russian River," he added, "is one of northern California's jewels."

"Our kids and grandkids should be able to have the experience of finding, and maybe even catching, native California trout, salmon and steelhead in their historic range."



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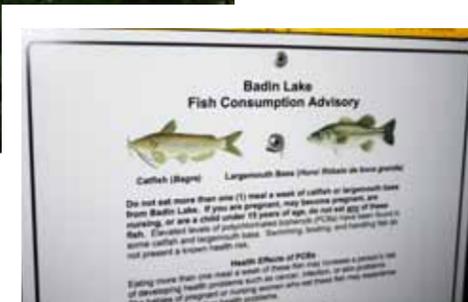
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PHOTOS COURTESY OF YADKIN RIVERKEEPER

LEFT: HIGH ROCK DAM—ONE OF FOUR DAMS ALCOA OPERATES ON THE YADKIN RIVER.
BELOW: A FISH-CONSUMPTION ADVISORY SIGN ON NORTH CAROLINA'S BADIN LAKE



Yadkin Riverkeeper Wins Major Legal Challenge Against Alcoa

Yadkin Riverkeeper's legal challenge to Alcoa Inc.'s attempts to renew its 50-year federal license to operate four hydroelectric dams along a 38-mile stretch of the Yadkin River came to fruition on December 1, when, in a stunning reversal, the North Carolina Department of Environment and Natural Resources revoked Alcoa's 401 Water Quality Certification. The 401 Certification is required for Alcoa to receive another 50-year license from the Federal Energy Regulatory Commission (FERC) to continue to operate the four dams. Alcoa earns millions of dollars by generating electricity from the river and selling it outside North Carolina.

Yadkin Riverkeeper, represented by the Duke Environmental Law and Policy Clinic, partnered with Stanly County (a rural county in North Carolina's Piedmont region) to legally challenge Alcoa's Water Quality Certification. Internal Alcoa documents uncovered in the discovery phase of the legal proceedings revealed that Alcoa intentionally withheld critical information regarding the fact that Alcoa's four dams had been suffocating river life downstream for years by discharging oxygen-poor waters from the bottom of their reservoirs. Yet, Alcoa suggests the emails were a big misunderstanding and is appealing the decision.

"Alcoa continues to mislead the public about its faltering dam operations and ongoing contamination of the Yadkin River," said Yadkin Riverkeeper Dean Naujoks. "It must be investigated and held responsible to fully remediate the damage caused to the land and

water surrounding its Badin facility." Alcoa's now-closed aluminum smelting plant in Badin has left behind a 90-year legacy of cyanide and arsenic as well as cancer-causing PCBs and PAHs, Naujoks asserts.

Yadkin Riverkeeper's recent success, which River Network ranked as one of the top national river victories in 2010, is a pivotal turning point in the campaign to recapture the Yadkin River on behalf of the citizens of North Carolina.

According to Naujoks, recapture provisions championed by President Theodore Roosevelt and Gifford Pinchot over 100 years ago have never been exercised in the U.S. since the creation of the 1920 Federal Power Act. "The Yadkin Relicensing issue has national, precedent-setting implications for all rivers if we are successful with public recapture on the Yadkin," said Naujoks.

Revocation of Alcoa's Water Quality Certification is crucial to the efforts of North Carolina Governor Beverly Perdue, Secretary of Commerce Keith Crisco, dozens of business leaders, and a growing coalition of bipartisan supporters seeking public recapture of the Yadkin River Hydroelectric Project.

"FERC has a clear obligation to the citizens of North Carolina to deny Alcoa's fraudulent 50-year federal license application," said Naujoks, "as Alcoa has repeatedly demonstrated that it cannot be trusted to be a good steward of the people's resources. Alcoa has proved by its own actions that it is a bad corporate citizen and does not deserve another 50 years to perpetuate further abuse of the Yadkin River."



"Alcoa continues to mislead the public about its faltering dam operations and ongoing contamination of the Yadkin River."



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Catawba River Fish—Consumption Advisories Drastically Expanded

After years of constant prodding by Catawba Riverkeeper, state officials in North and South Carolina finally issued the first health advisories urging the public to stay away from largemouth bass and channel catfish in large portions of the Catawba River and its lakes due to contamination from polychlorinated biphenyls or PCBs.

A public announcement released in January by the North Carolina Department of Health and Human Services placed the first-ever PCB consumption advisory in the Catawba River system on Mountain Island Lake, which is the primary source of drinking water for the communities of Charlotte, Mt. Holly, Belmont, Matthews and Pineville. Similarly, the South Carolina Department of Health and Environmental Control expanded its existing fish—consumption advisory for PCBs to Lake Wylie, Fishing Creek Reservoir, Cedar Creek Reservoir and the Catawba River from Lake Wylie to Fishing Creek, a recently named South Carolina Scenic River.

A release from the North Carolina Department of Health and Human Services stated, “Health officials are recommending that people avoid eating channel catfish from Mountain Island Lake.” The announcement also advised consumers to eat no more than one meal per week of largemouth bass from Mountain Island Lake.

South Carolina Department of Health and Environmental Control issued additional health advisories for Lake Wylie, the Catawba River from Lake Wylie to Fishing Creek, Fishing Creek Reservoir and Cedar Creek Reservoir. Due to high levels of PCBs found in fish tissue, DHEC recommended that the public eat no more than one meal per

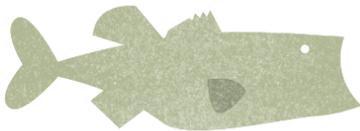
week of largemouth bass from Lake Wylie and the Catawba River from Lake Wylie to Fishing Creek. DHEC recommends that the public eat no more than one meal per month of largemouth bass from Fishing Creek Reservoir and Cedar Creek Reservoir.

“These results undoubtedly show us that PCB contamination is a widespread problem in the Catawba River and its lakes,” said Catawba Riverkeeper David Merryman. “We need to continue sampling the Catawba from Lake James to Lake Norman to make sure the proper advisories are in place and to protect residents from contaminated fish. Furthermore, the source of this contamination must be found and stopped from further contaminating our river and its fish,” PCBs can lead to the development of cancer, neurological—development delays in children, infection, and skin—and—nail irritations and problems with the immune and reproductive systems.

Catawba Riverkeeper released largemouth bass fish tissue results in early June 2010 showing elevated PCB concentrations in Mountain Island Lake from fish collected at the end of April 2010. “There’s no reason it should take months to get the science out to the fishermen and people who need it,” said David Merryman. “Right now the first and most important thing is to control exposure and to go (and test) Lake Norman and northward.”

South Carolina officials said they plan to expand their fish sampling in cooperation with North Carolina and the Environmental Protection Agency. After pressure from Catawba Riverkeeper, S.C. officials issued an initial PCB advisory for Lake Wateree, the last reservoir in the Catawba chain, in May of 2010.

A LARGEMOUTH BASS (MICROPTERUS SALMOIDES) CAUGHT FROM THE CATAWBA RIVER AT MOUNTAIN ISLAND LAKE.



North Carolina Department of Health and Human Services placed the first-ever PCB consumption advisory in the Catawba River system on Mountain Island Lake.



PHOTO COURTESY OF COOSA RIVER BASIN INITIATIVE

Upper Coosa Riverkeeper Named to “Top 100 Georgians” List

Georgia Trend Magazine has named Upper Coosa Riverkeeper Joe Cook (left) to its annual “100 Most Influential Georgians” list, which was dominated by the state’s leaders in business and government. Cook, 44, is also the executive director of the Coosa River Basin Initiative (CRBI), which was established in 1992 to protect the Coosa, Oostanula and Etowah Rivers, and is the parent organization of Upper Coosa Riverkeeper. He was cited by the magazine for winning a settlement that provided funding to begin a 160-mile water trail on the

Etowah as well as for his efforts to strengthen the regulations of inter-basin transfers.

“This recognition is really a testament to the efforts of all of Georgia’s Riverkeepers, the Georgia Water Coalition and CRBI’s staff, board of directors and volunteers,” Cook said. “Over the past eight years, we have worked together so that today our message is being heard by decision makers in our state. We’ve got a long way to go, but at least they are paying attention.”



PHOTO BY DON THOMPSON

TRUSTEES (BACK ROW, LEFT TO RIGHT): JAMES CURLEIGH, GREY HECHT, VICE CHAIR GORDON BROWN, TORE STEEN, WATERKEEPER ALLIANCE PRESIDENT ROBERT F. KENNEDY, JR. TRUSTEES (FRONT ROW, LEFT TO RIGHT): KAREN PERCY LOWE, WENDY ABRAMS, CARLA ZILKA, MONA STEEN, KATHY KENDRICK, CHAIR GLENN RINK



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Waterkeeper Trustee Retreat 2011

Waterkeeper Alliance extends its sincere gratitude to our friends and partners who donated so generously to our Board of Trustees retreat in February 2011 in Scottsdale, Arizona. The success of any meeting is dependent on many things, not least of which are creating a professional and peaceful atmosphere. We thank Trustee Ed Hubenette and JW Marriott Camelback Inn for their unparalleled expertise in creating just the right blend of businesslike atmosphere and peaceful setting, which played no small part in the meeting’s highly successful and productive outcome; Deanna and Bob Clarkson for hosting us for a wonderful meal at the iconic El Chorro Lodge; and El Chorro owners, Jacquie and Bennett Dorrance, and Managing Partners, Tim and Kristy Moore, for their warmth and hospitality.



Ripples

After More than a Century, Steeling for Battle along the Chesapeake

On July 9, 2010, Baltimore Harbor Waterkeeper and the Chesapeake Bay Foundation (CBF) filed suit against the current and former owners of the Sparrows Point steel plant, which has illegally discharged hazardous waste into the surrounding land and waters for decades. The complaint, filed in federal court and joined by several local residents, calls for a full investigation and cleanup of pollution. The plaintiffs are concerned for the health of neighbors of the plant, as well as the environment of Bear Creek and the Patapsco River, which flow into the Chesapeake Bay.

The steel plant has a long history in Baltimore. Founded in 1887 by Maryland Steel, the plant is located in Sparrows Point, a peninsula that juts into the Patapsco River. It was sold in 1916 to Bethlehem Steel, which in its heyday employed over 30,000 people in the area, and operated the plant until 1997. It is now owned and operated by a Russian company, Severstal, which accepted legal responsibility for existing pollution when it purchased the property in 2008.

As the steel industry grew, the plant expanded its footprint along the Patapsco River and Bear Creek. Originally encompassing about 300 acres, today the industrial complex sits on more than 2,300 acres of "land" created by filling in coastal wetlands with contaminated fill material produced by steelmaking operations and other local industrial plants. Over the years, the steel plant has caused severe contamination of the land and water. In 1997, the U.S. Environmental Protection Agency (EPA) and the Maryland Department of the Environment (MDE) sued Bethlehem Steel for hazardous-waste violations related to disposing toxic waste in unlined landfills around the complex. As a result of the lawsuit, these agencies required extensive onsite and offsite investigation of the contamination in preparation for a cleanup, plus interim remedial measures to stop the ongoing pollution. However, in 2007, when Waterkeeper assessed the company's compliance with those requirements, it became clear that, despite the passing of 10 years, very little remediation and no offsite cleanup of the contaminants had been completed. Together with CBF, Baltimore Harbor Waterkeeper decided to take action.

Contaminants found in Bear Creek and the Patapsco River and in sediments surrounding the facility included benzene, chromium, lead, naphthalene and zinc, all of which are a danger to public health. At one location, benzene, a human carcinogen, was found in groundwater at 100,000 times the legal level, and other sediments from some areas surrounding the facility are toxic to aquatic organisms.



TOP: THE ERODING SHORLINE NEAR THE SPARROWS POINT STEEL PLANT.
BOTTOM: THE SPARROWS POINT STEEL PLANT SITUATED ALONG THE PATAPSCO RIVER IN EDMERE, MARYLAND, HAS A LONG HISTORY AND LEGACY OF POLLUTION.

PHOTOS COURTESY OF BALTIMORE HARBOR WATERKEEPER

Despite the clear evidence of harm to surrounding communities, Severstal, says Baltimore Harbor Waterkeeper Eliza Steinmeier, at first "showed no intention of cleaning up their pollution. That is unacceptable. We, the people, own this river and nobody has a right to contaminate it."

After Baltimore Harbor Waterkeeper and CBF threatened a lawsuit in 2009, and EPA and MDE stepped up enforcement of the original consent decree, Severstal indicated its intention to begin preliminary cleanup of the hydrocarbon plume in the Coke Point area of the plant. But no steps have been taken to mitigate offsite contamination. Severstal has challenged its legal obligation to investigate contamination that has migrated beyond the plant's borders into adjoining waterways, and disputes EPA's and MDE's authority to require the company to undertake an assessment of the in-river contamination.

Baltimore Harbor Waterkeeper and CBF believe legal pressure is necessary to prompt speedy and full corrective action. Their lawsuit asks the court, among other things, to order Severstal and the previous owner, ArcelorMittal, to fully investigate offsite contamination, take emergency measures to more fully prevent pollution leaving the facility, and to remove and remediate offsite contamination. These steps are very long overdue.



West/Rhode Riverkeeper Wins Council Seat

Chris Trumbauer (left) has been the West/Rhode Riverkeeper since July 2008. Recently, he was elected to the County Council in Anne Arundel County, Maryland. Chris represents the greater

Annapolis area, a community which has a strong attachment to the Chesapeake Bay and its local rivers. As a Riverkeeper, Chris is a strong advocate for clean water issues. He decided to become part of the political process to try to better implement good policy in that area, in particular. "I don't like complaining about things," Chris says, "I like working to make them better." His County Council position is part-time, and Chris will continue as Riverkeeper. Good luck, Chris!

TROUBLED WATERS- NO NATURAL RESOURCE IS MORE PRECIOUS THAN FRESH WATER. NONE IS SHRINKING FASTER AS PEOPLE CONSUME MORE AND MORE.

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our common waters Our Common Waters, Patagonia's new environmental campaign, is about balancing human water use with the needs of animals and plants. The more water we waste, the more we pollute our streams and lakes, the more habitat we destroy, the harder it is for other creatures that also depend on fresh water to survive. Help protect your local waterways. Visit patagonia.com/ourcommonwaters to find out how. JONATHAN WATERMAN



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Hudson Riverkeeper's Showdown at Newtown Creek

In late November, Hudson Riverkeeper marked a significant moment in its history when it joined with then-Attorney General Andrew Cuomo in announcing a landmark settlement against ExxonMobil that holds the company responsible for cleaning up between 17 million and 30 million gallons of oil that were spilled and leaked from its refinery and storage facilities into the soil and groundwater in Greenpoint, Brooklyn, over many decades.

These petroleum discharges formed underground petroleum plumes of over 50 acres that underlie local businesses and a residential section of Greenpoint. The contamination has also been leaching into Newtown Creek for decades.

Riverkeeper discovered the oil spill during a boat patrol of Newtown Creek in 2002, when it found the first evidence of seeping oil from the Exxon refinery site. In 2004, Riverkeeper initiated the first citizens' case against Exxon for failure to clean up the spill.

The case quickly led to independent court filings by Brooklyn officials and others in 2005. Andrew Cuomo started his own action almost immediately after becoming Attorney General in 2007. Cuomo then led the negotiations that produced the settlement. Riverkeeper was an integral part of these negotiations, thanks in large part to the great and diligent work done by the Pace Environmental Litigation Clinic.



HUDSON RIVERKEEPER PAUL GALLAY ADDRESSES THE MEDIA AT A PRESS CONFERENCE ANNOUNCING THE LANDMARK SETTLEMENT AGAINST EXXONMOBIL.

HERE'S WHAT MAKES THIS SETTLEMENT SUCH A BIG WIN:

EXXON HAS TAKEN FULL RESPONSIBILITY FOR AN AGGRESSIVE CLEANUP, BOTH ON AND OFF THEIR SITE IN GREENPOINT.

THE SETTLEMENT SETS FIRM DEADLINES FOR ACTION AND ESTABLISHES PENALTIES FOR MISSING THESE DEADLINES.

GREENPOINT GETS \$19.5 MILLION FOR PARKS AND COMMUNITY-BASED ENVIRONMENTAL PROJECTS [THE BIGGEST IN STATE HISTORY].

RIVERKEEPER GETS TO MONITOR PROGRESS IN IMPLEMENTING THE SETTLEMENT AND CAN GO BACK TO COURT IF IT FALTERS.

While this ends a chapter in the Exxon case, it is not the end of the story. Next steps are to help local citizens organize to monitor the progress of the cleanup and also the distribution of the \$19.5 million for community benefit projects. Riverkeeper looks forward to sharing cleanup milestones and community-benefit-project updates.

A "Central Park" for Milwaukee

After years of complex negotiations involving Milwaukee County, three cities and numerous organizations, including Milwaukee Riverkeeper, the original fiscal agent for the project, a major milestone has been reached in the effort to protect a unique seven-mile stretch of the Milwaukee River corridor.

In January 2011 the City of Milwaukee Common Council unanimously endorsed the Milwaukee River Greenway Master Plan, which provides guidelines for recreational use and habitat restoration in the designated Greenway. This follows the creation in May 2010 of a district overlaying the Greenway that includes a variety of guidelines for any nearby commercial and multi-family construction. Together these measures will protect an area on both sides of the river in Milwaukee County that, at 878 acres, is comparable to New York's Central Park in size and significance. A popular recreation spot within a completely urbanized region, the Milwaukee River Greenway also has been likened to an urban wilderness because of its natural character and views that are free of any visible signs of the city.

The new guidelines will prevent the construction of any new buildings within the primary environmental corridor, require a 50-foot setback for construction on top of the river bluffs, and limit building heights in the area surrounding the corridor. Thanks to tenacious lobbying by Milwaukee Riverkeeper Cheryl Nenn, the stormwater guidelines for the district will be the strictest in the city. A forestry protection plan also is being developed. Over 500 acres of the river corridor will be restored to enhance its ecological integrity and sustain diverse species of birds, fish, bats, reptiles and amphibians. A jewel in this crown is a \$5 million, 40-acre arboretum. Prime existing natural areas are being protected at the same time that access for recreation in the corridor is being improved.

Milwaukee Riverkeeper has joined with a growing coalition of partners to ensure that the Master Plan is implemented. Details of the plan, maps and information about the coalition are available at www.protectmilwaukeeiver.org.



TOP: AUTUMN COLORS ALONG THE MILWAUKEE RIVER GREENWAY. BOTTOM: CANOEING ALONG THE MILWAUKEE RIVER GREENWAY.

RECESS IS BACK



• ORIGINAL HYBRID •
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PHOTO COURTESY OF OGEECHEE RIVERKEEPER



PHOTO COURTESY OF DAVID BRINE CUMMINGS

TOP: A CYPRESS SWAMP NEAR THE BLACK WATERS OF THE OGEECHEE RIVER.
BOTTOM: DAVID CUMMINGS COLLECTS FISH FOR MERCURY TESTING FROM THE OGEECHEE RIVER, 2009.

Setback for Dirty Coal in Georgia

In December, a Georgia state court rejected Georgia's air quality permit for Plant Washington, a proposed 850 megawatt coal-fired power plant in Sandersville, GA. According to today's ruling, the state permit for Plant Washington violated Clean Air Act safeguards to limit harmful air pollution.

GreenLaw and the Southern Environmental Law Center challenged the state air quality permit in court on behalf of Ogeechee Riverkeeper, the Fall-line Alliance for a Clean Environment, Sierra Club's Georgia Chapter, and Southern Alliance for Clean Energy.

The Georgia Environmental Protection Division must reconsider its permit after the court found it failed to set safe limits on harmful emissions from the plant, including dozens of hazardous air pollutants that can cause cancer, birth defects, heart disease, developmental disorders, and other serious injuries.

Plant Washington is a project of Power4Georgians, a company organized by Cobb Electric Membership Corporation (EMC), three other EMCs from the metro-Atlanta area and Washington EMC in central Georgia.

"This ruling is great news and an early Christmas present for our families," said Chandra Brown, Ogeechee Riverkeeper. "We are thrilled that the judge ruled in favor of protecting the people who would be forced to breathe the hazardous air pollution from this proposed dirty coal plant. Now, if only the state environmental regulators would quit wasting taxpayers' money by defending permits that allow illegal levels of pollution, we will be celebrating a happy New Year and progress for Georgia's communities."

"Throughout this case, the State took the untenable position that the Clean Air Act does not apply in Georgia," said Kurt Ebersbach, a senior attorney with GreenLaw. "This decision affirms that it does apply and that EPD failed to follow its dictates in setting appropriate limits for the many hazardous air pollutants that this proposed coal plant would emit in large quantities."

"The Plant Washington permit flouted basic Clean Air Act laws established to protect people and the environment from highly toxic air pollutants," said John Suttles, a senior attorney at the Southern Environmental Law Center who argued the case before the court. "By holding this massive coal-burning plant to the letter of the law, the ruling is a landmark victory for clean air and the health of Georgia residents."

This ruling marked the second legal setback for the proposed dirty-coal plant. Legal challenges to the water pollution and usage permits were brought by Altamaha Riverkeeper, Fall-line Alliance for a Clean Environment, and Sierra Club. In July 2010, a judge ruled those permits invalid as well.

Despite the continued setbacks and rising legal and engineering costs for their customers, Cobb EMC says it plans to continue with plans to site a dirty-coal plant in rural south Georgia. "Ogeechee Riverkeeper and Altamaha Riverkeeper will continue to fight the pollution and water loss from this proposed coal plant and promote a cleaner energy future for Georgia by encouraging energy conservation, efficiency and alternative energy sources," says Ogeechee Riverkeeper's Brown.



TOP: LIANGJIWAN RESIDENT SHOWING UNTREATED WATER FROM THE YELLOW RIVER BEFORE A PIPE FROM A WATER TREATMENT PLANT IS INSTALLED IN HER VILLAGE.

In One Chinese Town, No More Orange Water from the Yellow River

The Yellow River, revered as the cradle of Chinese civilization, flowed filthy and undefended until 2004, when two of its most passionate advocates, Zhao Zhong and Ran Liping, founded Green Camel Bell, an environmental organization based in Lanzhou, the capital of Gansu Province in western China and one of the most polluted cities in the world. Since 2007, Zhao Zong and Ran Liping have been working in some of the small villages on the outskirts of pollution and to pressure local agencies to supply clean drinking water to residents.

In May 2010, the Upper Yellow River Waterkeeper joined

Waterkeeper Alliance as a program of Green Camel Bell. Led by Ran Liping, it was the third Waterkeeper program in China (there are now four). As Upper Yellow River Waterkeeper, Ran Liping advocates for the people who rely on the river for daily uses. One glaring example of unsanitary conditions Liping discovered was in Liangjiawan, a village of about 1,500 people where the residents had been drinking untreated water piped in from the Yellow River for decades.

The villagers were relying on their own home-made water treatment: when orange-looking water

poured out of the household faucet, it would be left in a bucket for a day to allow the sediments to sink to the bottom. This process would be repeated two more times and then the water would be boiled for 15 minutes before it was deemed drinkable.

"But after a hydropower station was built next to the village's drinking water pipe," says Ran Liping, "the quality of their drinking water got even worse."

"We collected water quality data," Liping says, "and conducted a health and disease investigation," which revealed that cancer rates in the village had risen dramatically from 2003 to 2008. They published and distributed a citizen's guide to water pollution. "We recorded a video and invited the local and international press as well as Chinese and foreign NGO delegations to the village to draw attention to the plight of its residents. We held countless negotiations with the local government and the Caijixia Hydropower Station to pressure them to find a long-term solution for Liangjiawan."

Finally, in early 2010, an agreement was reached to build a new pipe that will deliver clean water from the hydropower station's own treatment facility to the village. "We were very pleased with the victory," says Ran Liping. "But Liangjiawan village is only one case in Gansu. Lack of safe drinking water is a problem that large numbers of the population face. This is a big crisis. We need to promote hard-hitting environmental policy and to popularize clean-water awareness. It must involve the cooperation of government, business and NGOs. We must learn how to lead a clean-water campaign together."

Watching the River Flow

After a long wait, the Victorian provincial government has announced that it is ready to provide Australia's Yarra River with much-needed "environmental flows" designed to mimic the river's natural flow pattern, which has been severely altered by water-supply reservoirs. "The government has at long last honored its promise, made four years ago, to provide the Yarra with these environmental flows," said Yarra Riverkeeper Ian Penrose.

In 2005, a government-sponsored scientific study found that the health of the Yarra and the plants and animals it supports were suffering from poor river flows because Melbourne, Australia's second largest city, depends on the Yarra catchment for most of its water. The study showed, firstly, that the river was receiving 60 percent of the natural runoff (the rest taken for water supply) and secondly, that the altered pattern of flows was damaging the river's health.

To tackle the unhealthy flow pattern, the study recommended minimum passing flows plus an environment entitlement of 17 billion litres per year to compensate for unanticipated circumstances such as dry summers. The scientists stated that these were minimum requirements for a healthy river.

Prior to the 2006 state election the Government announced with much fanfare that the Yarra would get these environmental flows. But a year later it deferred them and lowered the minimum flows by another 20 billion litres per year resulting in a total loss of 37 billion litres annually to the ailing Yarra.

"The Yarra Riverkeeper Association objected strongly to these decisions and the threat they posed to the river's health," said Penrose. They campaigned vigorously ever since for the promised and needed environmental flows.

"Today's announcement is unquestionably good news", Penrose said. "But they amount to only a small percentage of the river's natural flow, and the amount of water being taken from the Yarra is still of grave concern." In each of the last three years, 2007-9, excessive water extraction



YARRA RIVERKEEPER IAN PENROSE (RIGHT) SHOWING THE VICTORIAN WATER MINISTER THE BEAUTY OF THE YARRA AND ADVOCATING FOR IMPROVED RIVER FLOWS.

has left the river with only 30 percent of the natural runoff—the lowest on record

"Our Yarra has shrunk drastically," said Penrose. "It has been hit doubly hard; by the dry decade and by the disproportionate amount of water extracted from it. Melbourne must reduce its over-exploitation of the Yarra and aim to source most of its water supply from recycling and capturing urban stormwater. In that way, the Yarra can retain 60 percent of its natural runoff. Anything less is inconsistent with the true meaning of living sustainably."



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AT A CROSSROAD

They are the largest group of freshwater lakes on earth, containing 95 percent of the United States' supply of fresh surface water and 20 percent of the world's. They touch eight U.S. states and two Canadian provinces, and are often called the U.S.'s "third coast," since they contain more coastline than the east and west coasts of the lower 48 states combined.

But today, the Great Lakes face a daunting variety of threats—from climate change, and the increasingly powerful storms it is

causing, to declining water levels from more and more invasive aquatic species brought in with ships' ballast, to increased sewage overflows caused by old, failing infrastructure in scores of communities around the Lakes.

In spite of the long odds, however, the Great Lakes' 11 Waterkeeper organizations are determined to play a major role in meeting the challenges and restoring these magnificent bodies of water to their past glory.



ABOVE: THE HOAN BRIDGE MARKS THE POINT WHERE THE MILWAUKEE RIVER ENTERS LAKE MICHIGAN.

THE CITY THAT POLLUTED DRINKING WATER MADE INFAMOUS

MILWAUKEE RIVERKEEPER CAN COUNT MANY VICTORIES FOR THE CITY'S THREE RIVERS AND ONE GREAT LAKE

BY CHERYL NENN, MILWAUKEE RIVERKEEPER

Most Americans can identify Milwaukee as a Great Lakes city, situated on southwestern Lake Michigan, but it is not as well known that it is served by three rivers—the Milwaukee, Menomonee and Kinnickinnic—which have long been vital natural, economic and cultural pathways. Native Americans, including the Menominee, traveled and harvested these rivers for untold centuries before European settlers moved into the area in the late 1700s, after which the rivers quickly became main commercial and shipping arteries for transporting wheat, lumber, coal, beer, machinery and other products.

But trade and industry eventually polluted these lovely waterways, and, as roads, railways and airplanes gradually replaced rivers for transportation in the 19th and 20th centuries, Milwaukee turned its back on its rivers. More

recently their water quality has vastly improved, and people are once again embracing their rivers for recreation; yet the goal of making them fishable, swimmable and drinkable waters remains difficult to reach.

Major threats to water quality in the 900-square-mile Milwaukee River Basin include polluted runoff from urban and rural areas, sewage overflows, and the legacy of industrial contamination. In 1993, Milwaukee heard a wake-up call when an outbreak of Cryptosporidium in its drinking-water supply from Lake Michigan killed 100 residents and sickened over 400,000. Arguing over the exact source of the pathogen—agricultural runoff or sewage overflows—is still a favorite local exercise.

After this incident, in 1995, a concerned group of residents formed what is now Milwaukee Riverkeeper to protect the water quality and wildlife habitat of the Menomonee River. This initiative was led by Bob Boucher, who had become increasingly upset by the sorry state of local rivers he had enjoyed as a boy. He and his allies began to organize river cleanups and community events to raise awareness of problems facing the rivers, and the first battle that they engaged was to prevent Milwaukee County's sale of a 235-acre natural area adjacent to the Menomonee River called the County Grounds. The group drew strong community support for that cause, and the sale was blocked. A portion of the site became a state forest, and the county executive was eventually recalled from office.

In the late 1990s, the group appealed to the Milwaukee Metropolitan Sewerage District

(MMSD) to remove a small dam and 14,000 linear feet of concrete from the channel of the Menomonee River to enable improved fish-passage. The effort succeeded, and the project was completed in 2000. Shortly afterward, members advocated successfully for removal of the North Avenue Dam on the Milwaukee River, which has improved water quality and fish passage dramatically.

In 1999, this already-effective organization was licensed as the 24th member of the newly formed Waterkeeper Alliance, and it expanded its jurisdiction to cover all three local rivers entering Lake Michigan. At the same time, the new Milwaukee Riverkeeper began investigating larger sources of pollution, including sanitary-sewer overflows from MMSD, which treats sewage for the City of Milwaukee and 27 other municipalities. From 1995 to 2001, MMSD discharged more than one billion gallons of untreated sewage into local rivers and Lake Michigan, endangering public health and precipitating Milwaukee Riverkeeper's first lawsuit – joined by the Alliance for the Great Lakes – in July 2001. Although the suit was dismissed after eight years of procedural wrangling, it spurred the State of Wisconsin to file its own suit, which pre-empted the earlier citizen suit but resulted in a settlement with MMSD requiring the expense of more than \$900 million for infrastructure improvements and other programs to reduce sanitary-sewer overflows.

I joined Milwaukee Riverkeeper in 2003. I grew up in the Chicago area, swimming and



ABOVE LEFT: MINERS ROCK, PART OF LAKE SUPERIOR'S PICTURED ROCKS NATIONAL LAKESHORE ON MICHIGAN'S UPPER PENINSULA. ABOVE RIGHT: PICTURE OF A SANITARY SEWAGE OVERFLOW (SSO) ENTERING THE MENOMONEE RIVER. SEWAGE FROM THE SSO FLOWS DOWN THE MENOMONEE, INTO THE MILWAUKEE RIVER AND OUT INTO LAKE MICHIGAN. BELOW LEFT: MILWAUKEE RIVERKEEPER VOLUNTEERS CLEAN TRASH FROM THE KINNICKINNIC RIVER. THE KINNICKINNIC WAS LISTED AS ONE OF THE U.S.'S MOST ENDANGERED RIVERS IN 2007. BELOW RIGHT: PADDLERS ENJOYING MILWAUKEE RIVERKEEPER'S ANNUAL CANOES & BREWS PADDLE EVENT ON THE MILWAUKEE RIVER, 2005.



boating further south along Lake Michigan. I hold a bachelor's degree in biology and a master's degree in natural resource ecology and management. A onetime Peace Corps volunteer, I brought to the Riverkeeper valuable experience in managing natural areas, conducting biological and water quality surveys, and participating in sustainable agricultural and forestry projects.

Among the organization's many accomplishments under my leadership, a few can be mentioned chronologically:

In 2005, the organization released the "Milwaukee Urban Water Trail Map," a guide for canoeists and kayakers. The trail that it describes has been designated by the Department of the Interior as a "National Recreational Trail," and by the American Canoe Association as a "Recommended Water Trail for 2006." Last year The New York Times listed the Milwaukee as one of seven rivers it recommended for paddling.

In 2006, Milwaukee Riverkeeper purchased a boat for conducting regular patrols and looking for signs of pollution and other threats to the river's health. The group also initiated a citizen-based water monitoring program that year, which has trained hundreds of residents to monitor water quality.

In 2007, the Riverkeeper nominated

the Kinnickinnic River as one of "America's Most Endangered Rivers," a move that helped raise \$22 million in federal and state funds for cleanup of 170,000 cubic yards of contaminated sediments from industrial pollution. After two years of hard work by Riverkeeper and its partners, new life returned to this forgotten river, which had been given up for "dead"

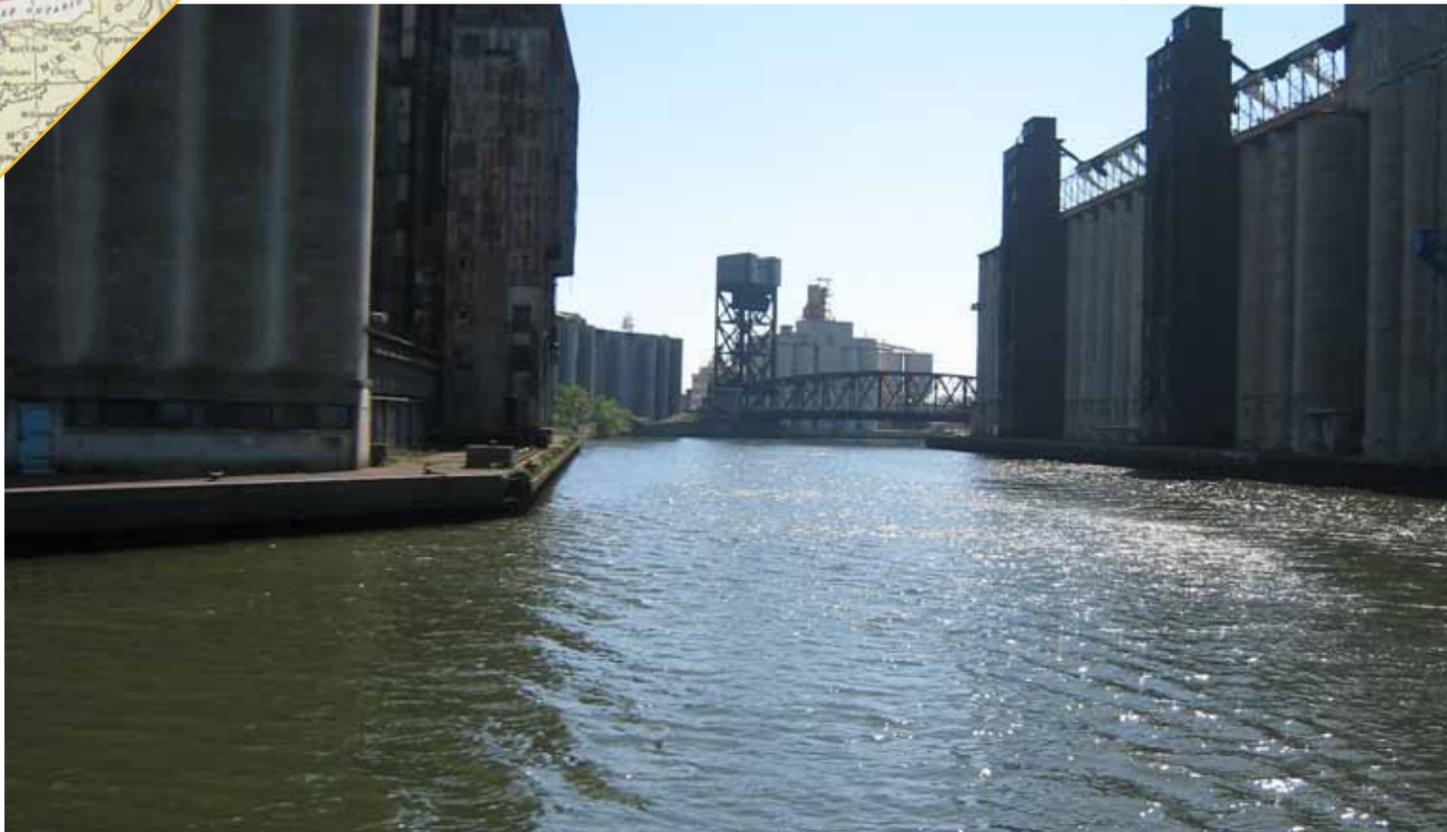
In 2008, Milwaukee Riverkeeper and its partners secured the passage of legislation creating the "Milwaukee River Greenway Overlay District in the City of Milwaukee," which protects eight miles and more than 800 acres of riparian area from development. The overlay district is regulated to protect natural areas adjacent to the river; provide stronger guidelines for stormwater management, and restrict building height to protect the "viewshed" of the river valley.

Phosphorous pollution is one of the most serious water-quality problems in the Great Lakes and adjacent rivers, and one over which Milwaukee Riverkeeper has threatened to sue the U.S. EPA

THE WORK TO PROTECT MILWAUKEE'S RIVERS WILL LIKELY NEVER BE DONE, BUT THE VISION OF A FUTURE IN WHICH ALL THOSE WHO LIVE WITHIN THE MILWAUKEE RIVER BASIN CAN ENJOY CLEAN DRINKING WATER AND SWIMMABLE, FISHABLE RIVERS NEVER FADES.

for failing to put standards in place for the State of Wisconsin. This advocacy, strongly reinforced by pressure from U.S. EPA, led the State to approve rules to address the issue in 2010. Found in fertilizers and in agricultural and human waste, phosphorous causes growth of algae, turning water green, depleting oxygen levels and killing fish and other aquatic life. Wisconsin's new rules put it in the forefront among states in the battle to control these noxious nutrients.

Many of the dedicated volunteers and activists who helped its predecessor organization get off the ground more than 15 years ago continue to serve and support Milwaukee Riverkeeper on the environmental battlefield. Each year, hundreds of new volunteers join them each year, laboring to clean up river and stream corridors, to monitor water quality, and to advocate for clean-water laws and regulations. They provide renewed energy that is essential for fighting the battles that constantly arise and sometimes resume after they seemed to have ended. The original engagement to protect the County Grounds, for example, has still not completely been won, as threats from new development push at the edges of that natural area. The work to protect Milwaukee's rivers will likely never be done, but the vision of a future in which all those who live within the Milwaukee River Basin can enjoy clean drinking water and swimmable, fishable rivers never fades. What has already been achieved provides a great source of hope. **W**



ABOVE: GRAIN ELEVATORS ON THE BUFFALO RIVER DATING BACK TO THE INDUSTRIAL AGE MAKE UP AN AREA NOW KNOWN AS ELEVATOR ALLEY.



ABOVE: A RAIN BARREL CAPTURES RAIN WATER FROM A HOME AS PART OF A DOWNSPOUT DISCONNECTION PROGRAM IN BUFFALO, NY.



ABOVE RIGHT: VOLUNTEERS COLLECT TRASH ALONG THE WATERWAYS DURING A SEMI-ANNUAL CLEANUP THAT ENCOMPASSES 77,000 LINEAR FEET OF SHORELINE. BELOW RIGHT: BUFFALO NIAGARA RIVERKEEPER'S NIAGARA RIVER RIPARIAN RESTORATION PROGRAM ADDS NATURAL HABITAT TO LOCAL SHORELINES, AND ENGAGES LANDOWNERS AND CITIZEN VOLUNTEERS IN ENVIRONMENTAL STEWARDSHIP.

PROGRESS IN AND AROUND A WORLD-FAMOUS WATERWAY

AFTER MORE THAN 20 YEARS, BUFFALO NIAGARA RIVERKEEPER IS SEEING SOME OF ITS FOUNDERS' VISIONS FULFILLED

BY JULIE BARRETT O'NEILL, BUFFALO NIAGARA RIVERKEEPER

THE BUFFALO RIVER CORRIDOR

Buffalo Niagara Riverkeeper formed in 1989 with the intent to restore the Buffalo River as a vital part of a region of western New York State. Over the past generation it has joined with the U.S. Environmental Protection Agency, the U. S. Army Corps of Engineers, the State Department of Environmental Conservation and Honeywell International to form the Buffalo River Restoration team, and this collaboration will culminate this year when the Corps begins dredging a navigation channel to remove contaminated sediments in what is known as the "Area of Concern" (AOC). At that moment the vision of the founders of Buffalo Niagara Riverkeeper will be partially realized.

Dredging will continue into 2012 and extend

to an area outside the navigation channel. The project is funded by the Great Lakes Restoration Initiative (GLRI) and the Great Lakes Legacy Act (GLLA), and is projected to bring \$40 million in federal money to the region's economy.

The Riverkeeper's approach to restoring and protecting waterways is multi-faceted. It has participated for years in the South Buffalo Brownfield Opportunity Area project, one of the largest waterfront reclamation projects in North America and winner of a New York State Showcase Community award. Now another planned GLRI project, called "RiverBend," will restore a one-mile-plus riparian stretch in the Buffalo River Corridor along the site of a former steel plant.

Recently, one Riverkeeper staffer led a team of mapping consultants and a technical advisory group in compiling "The Buffalo and Niagara Rivers Habitat Assessment and Conservation Framework," the most comprehensive environmental study of the region ever undertaken.

Funding has proved, and continues to prove, invaluable. A U.S. Fish and Wildlife Foundation grant enabled Riverkeeper to lead a team effort to preserve and protect an oxbow wetland—one of three in the Buffalo River watershed—upstream of the AOC. The area was removed from private ownership through a conservation easement and was transformed into a perpetual nature preserve. And, more activity is in the works. Riverkeeper, again applying a GLRI grant, will conduct a natural-habitat planting in a park at one end of the "Area of Concern."

THE NIAGARA RIVER

The hydroelectric-power-generating capacity of the Niagara River, serving both the U.S. and Canada, is one of the ten largest in the world. In 2007, the Federal Energy Regulatory Commission's license for the Robert Moses Power Plant, a hydroelectric facility of the New York Power Authority (NYPA), was due to be renewed. But as 2007 approached, the NYPA decided to replace the traditional relicensing process with an alternative that invited public input. During that time Riverkeeper led a group of more than thirty environmental organizations that secured more than \$112 million for habitat and ecological mitigation, and another \$400 million to implement "The Niagara River Greenway Plan" for the area between Lakes Erie and Ontario. Riverkeeper serves as a watch-dog of the license agreement, and it implements license-funded initiatives such as "The Niagara River Riparian Restoration Program," a three-year project for planting 25 natural habitats along the Niagara and its tributaries.

COMMUNITY SUPPORT

Community engagement has always been a priority for Riverkeeper. It has formed a volunteer "Riverwatch" team that conducts more than 1,500 year-round, and it recruits and coordinates more than 1500 more volunteers -- the "Citizen Action Team" -- to perform its semi-annual shoreline sweeps at up to forty

sites in the region. These occur each April on Earth Day weekend, and in September during with the International Beach Sweep. More than one hundred volunteers have also been trained in activities like water sampling and pipe monitoring.

Riverkeeper staff and volunteers are the only people testing water quality in many of the Niagara's tributaries. And monitoring these tributaries and the rivers themselves has led to a program to educate residents about the hazards of eating locally caught fish. Contamination in the Niagara and Buffalo is such that the New York State Department of Health warns that children under the age of 15 and women under the age of 50 consume no fish from either river. This is particularly important in an area with disproportionate number of immigrants from Asian and Latin American countries where people fish for sustenance. In their new home they may be unaware of the risk of continuing this practice.

To raise awareness of this and many other realities, Riverkeeper and a local community college have formed "River Academy," which will offer instruction and training in stream science, stream restoration and watershed management. The syllabus will include field-oriented classes presented by local experts as well as hands-on restoration workshops on Niagara River tributaries.

NEW INITIATIVES

Greenway is a new Riverkeeper team that aims to develop green-infrastructure solutions to the area's water problems, primarily the pollution caused by stormwater runoff from Buffalo's sewer systems. In 2010, this team worked with the Buffalo Sewer Authority (BSA) in a pilot program to disconnect downspouts in a South Buffalo neighborhood along the Buffalo River. At the homes of those who participated, Riverkeeper and BSA staff disconnected the downspouts that piped directly into the sewers and installed rain barrels. This year, Riverkeeper's Greenway team will work with the City's public works department to reshape several blocks to incorporate features that will retain stormwater rather than direct it into the river.

LOOKING TO THE FUTURE

In 2011, new grants have enabled Buffalo Niagara Riverkeeper to increase its staff from 17 to 25, adding a lawyer, landscape architects and other professionals. This growth, happily, is symptomatic of progress in many areas and of an expanding effort to better connect the region's communities to its waterways.

More information about Buffalo Niagara Riverkeeper can be found at bnriverkeeper.org.

CONTAMINATION IN THE NIAGARA AND BUFFALO RIVERS IS SUCH THAT THE NEW YORK STATE DEPARTMENT OF HEALTH WARNS THAT CHILDREN UNDER THE AGE OF 15 AND WOMEN UNDER THE AGE OF 50 CONSUME NO FISH FROM EITHER RIVER.



ABOVE: FOLLOWING A RAIN STORM, SEDIMENT-LADEN WATER FROM THE ROUGE RIVER MEETS AND MIXES WITH WATER FROM THE DETROIT RIVER. BELOW RIGHT: THE DETROIT RIVER IS A MAJOR TRANSPORTATION LINK TO CANADA; A WATER ROUTE FOR BULK TRANSPORT, BOATING, FISHING AND RECREATIONAL OPPORTUNITIES. IT ALSO PROVIDES DRINKING WATER FOR MILLIONS OF PEOPLE.

RESURGENCE IN MOTOWN: NOT JUST CARS, BUT THE RIVER TOO

BUT FURTHER IMPROVEMENT DEPENDS ON CONTINUED FUNDING

BY ROBERT BURNS, DETROIT RIVERKEEPER

The Detroit River is, in fact, a 32-mile strait that connects Lake St. Clair to Lake Erie and contains, down its center, the international dividing line between Detroit and Windsor, Ontario. More than two million people live along its banks and in connecting watersheds, and most of them depend upon the river for drinking water. Below these cities, the Detroit River corridor provides some interesting opportunities and challenges when dealing with water quality issues. The mid river is highly industrialized, and the lower river borders smaller communities and remnants of coastal wetlands. In the lower section also there are a number of islands that provide important habitat for local wildlife and many recreational opportunities for people. The river also offers some of the best spring walleye fishing in the Great Lakes.

You can walk down the city riverfront and walk under the skyscrapers of Detroit at the upper end of the river, and a short time later be paddling around native wetland habitats and uninhabited islands in the lower river.

Beginning with the French fur trade in the 1700s, and continuing through the shipbuilding period in the 1800s and the tremendous growth of the auto industry in the 1900s, the Detroit River has been an important hub for commerce on the Great Lakes. But along with commercial growth came the great costs of urban sprawl, unregulated sewage discharges, contaminated sedimentation, loss of natural habitats and the introduction of invasive species.

The enactment of the Clean Water Act in 1972 did much to reduce the effects of these developments. We have come a long way in the Detroit River corridor to address many of the historical problems that were created over the last 100 years. With the reduction of industrial-waste discharges and the removal of some of the contaminated sediment areas, we are seeing the return of native wildlife that had disappeared, such as lake sturgeon, whitefish, bald eagles and mink.

Since its inception in 2003, the Detroit Riverkeeper program has worked closely with local, state and federal agencies, communities and non-governmental organizations to solve the river's problems. It has pushed for upgrades of local municipal-sewage facilities to reduce the amount of combined sewer overflows discharged into the river. It has worked with local sporting groups and the State's Department

of Fisheries and Wildlife to improve natural habitats. It cooperates with local watershed districts to reduce the amount of stormwater entering the river, and with state agencies to better regulate the discharge of industrial effluent. And, it promotes public education to increase awareness and encourage stewardship of the river.

However, that continued resurgence of the Detroit River will require funding for projects to upgrade sanitary systems, increase treatment capacities, re-create lost habitats and extend pollution-reduction programs. And, in recent economic time, such money has become scarce. Hard-strapped communities large and small have had to cut back efforts to take on environmental problems as their revenues have shrunk, even as population growth exacerbates these problems.

Fortunately, the Great Lakes Restoration Initiative has obtained federal grants over the past couple of years. And, working in concert, Detroit Riverkeeper, its parent organization, the Friends of the Detroit River, and the Detroit River Area of Concern group have helped to bring \$3.2 million of federal grant money in the past year to conduct three large habitat restoration projects. These projects will help to replace some of the lost shoreline habitat and fish-spawning grounds along the upper and mid river. More of this funding, will be needed.

There are many issues still to tackle. W

DURING PERIODS OF HEAVY RAINS, LARGE TRIBUTARIES LIKE THE ROUGE PUSH AN OVERABUNDANCE OF SEDIMENT, SEWAGE AND OTHER POLLUTANTS FROM SURFACE RUNOFF INTO THE DETROIT RIVER.



ABOVE: AERIAL VIEW OF EAGLE PROJECT. THE YELLOW DOG RIVER AND THE MINE SITE ARE IN CLOSE PROXIMITY. THE HURON MOUNTAINS AND LAKE SUPERIOR—THE LARGEST BODY OF FRESHWATER IN THE WORLD BY SURFACE AREA—PROVIDE A BACKDROP.

A BIRD'S EYE VIEW OF MICHIGAN'S MINING MADNESS

AS METAL EXTRACTION RETURNS TO THE UPPER PENINSULA, A RIVERKEEPER WATCHES FROM ABOVE

BY EMILY WHITTAKER



Mining is coming back to Michigan's Upper Peninsula, and Yellow Dog Riverkeeper Chauncey Moran is watching closely. Some days he watches from thousands of feet in the air, and he brings his camera. Moran is no novice when it comes to protecting Michigan's waterways, but the Yellow Dog Riverkeeper is relatively new to Waterkeeper Alliance. It was founded as a program for the Yellow Dog Watershed Preserve in 2009, and Moran was named the first Yellow Dog Riverkeeper.

Although the peninsula is historically an iron/copper mining region, in 2002 the Anglo-Australian mining conglomerate Rio Tinto announced its intention to open a nickel mine in the watershed of the Salmon-Trout River, which is adjacent to the Yellow Dog watershed. After reviewing the company's track record for environmental and human

rights violations, The Yellow Dog Watershed Preserve, partnering with the National Wildlife Federation, campaigned to protect communities and wildlife habitats from acid mine drainage. Expanding its water quality protection program, Watershed Preserve began using an EPA-established protocol for sending water samples to a lab to be tested for low-level metal concentrations. Since then it has done more water testing than the government and the mining company combined.

The Watershed Preserve recently received funding from the Norcross Wildlife Foundation to purchase groundwater conductivity meters, which will significantly expand the gathering of critical information about such operations.

After that initial mining prospect was announced, however, many companies from all over the world began exploratory drilling across the Upper Peninsula. One of them, Kennecott Eagle Minerals Company, a subsidiary of Rio Tinto, has received permits from the State of Michigan to open a metallic-sulfide mine in an area known as the Yellow Dog Plains. In cash-strapped Michigan, promises of high-paying jobs, tax revenue and royalties have trumped environmental protection in the eyes of most politicians. And, companies have spent millions of dollars lobbying elected officials. But, Riverkeeper Moran has been chronicling the project, in part through aerial photographs, and discovering violations of those permits. He has found evidence of exploratory drilling 500 feet from the river's edge, overflowing contact-water basins and failing basin liners. His presence

both in the air and on the ground has forced the company operate more honestly.

Three years ago, before any surface facilities were built for the project, he detected a violation of the Clean Water Act. The company had installed a pump in a small creek to remove thousands of gallons of water to wash drilling equipment. When Moran determined that it was large enough to raise the creek's water temperature beyond Clean Water Act limits, he reported this to the Michigan Department of Environmental Quality, which instructed the company to cease that operation. That development put Kennecott on notice that it would have to behave more responsibly in Michigan's Upper Peninsula.

Moran produces and widely distributes a newsletter that features many of those photos from the sky. He recently sent one of the issues to over 1500 people in the surrounding communities. In its 8.5 x 22 inch centerfold was a full-color comparison of the mine construction site before it was leveled and in November 2010, when it was surrounded by a 25-foot berm and pockmarked with wastewater basins and rock storage facilities. The response, much of it expressing shock and awe, has been voluminous. Public determination to stop the mining operation is growing.

More information about what is being done to protect Yellow Dog River and its watershed is available at www.yellowdogwatershed.org. **W**

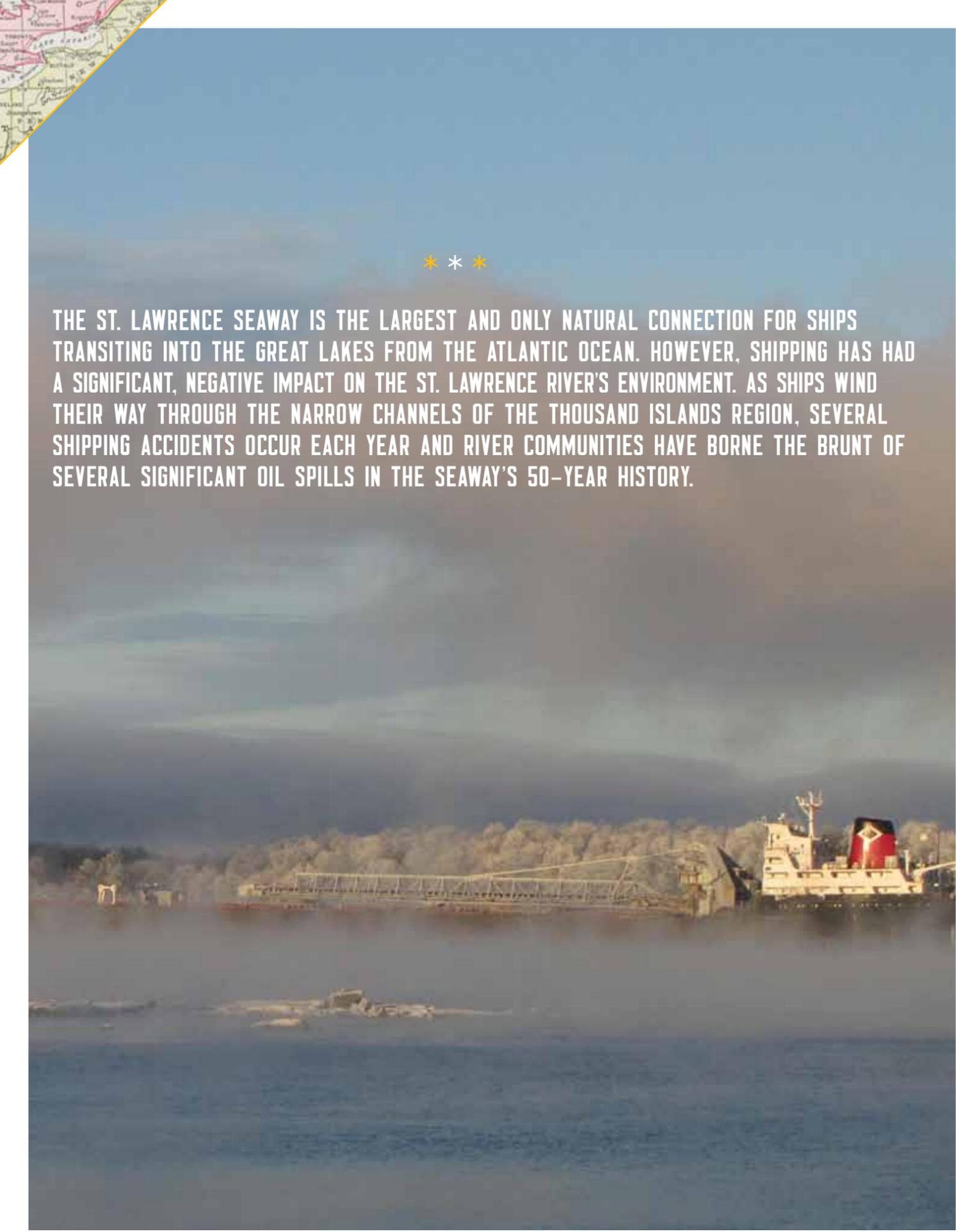


ABOVE: THE YELLOW DOG RIVERKEEPER, CHAUNCEY MORAN, FOCUSING IN ON HILLS FALLS ALONG THE YELLOW DOG RIVER.

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MINING IS COMING BACK TO MICHIGAN'S UPPER PENINSULA, AND YELLOW DOG RIVERKEEPER CHAUNCEY MORAN IS WATCHING CLOSELY.

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THE ST. LAWRENCE SEAWAY IS THE LARGEST AND ONLY NATURAL CONNECTION FOR SHIPS TRANSITING INTO THE GREAT LAKES FROM THE ATLANTIC OCEAN. HOWEVER, SHIPPING HAS HAD A SIGNIFICANT, NEGATIVE IMPACT ON THE ST. LAWRENCE RIVER'S ENVIRONMENT. AS SHIPS WIND THEIR WAY THROUGH THE NARROW CHANNELS OF THE THOUSAND ISLANDS REGION, SEVERAL SHIPPING ACCIDENTS OCCUR EACH YEAR AND RIVER COMMUNITIES HAVE BORNE THE BRUNT OF SEVERAL SIGNIFICANT OIL SPILLS IN THE SEAWAY'S 50-YEAR HISTORY.



ABOVE LEFT: THE UPPER ST. LAWRENCE RIVER IS DOTTED WITH MORE THAN 1,800 ISLANDS. ABOVE RIGHT: ZEBRA MUSSELS (DREISSENA POLY MORPHA). BELOW LEFT: THE ST. LAWRENCE SEAWAY IS THE LARGEST AND ONLY NATURAL CONNECTION FOR SHIPS TRANSITING INTO THE GREAT LAKES FROM THE ATLANTIC OCEAN. BELOW RIGHT: AN ANGLER RELEASES A NATIVE MUSKELLUNGE (ESOX MASQUINONGY) BACK INTO THE RIVER.

ABBIE HOFFMAN'S LITTLE-KNOWN LEGACY

THE MOVEMENT HE BEGAN TO PROTECT THE UPPER ST. LAWRENCE AND THE THOUSAND ISLANDS STILL GUIDES LOCAL COMMUNITIES

BY JENNIFER CADDICK, UPPER ST. LAWRENCE RIVERKEEPER

The St. Lawrence River is the natural outflow for the entire Great Lakes system and one of the longest rivers in North America, extending 744 miles from Lake Ontario, the furthest east of the Great Lakes, and northeasterly into the world's largest estuary, the Gulf of St. Lawrence. The Upper St. Lawrence, consisting of roughly the first 80 miles of river, flowing over ancient glaciated rock and dividing New York State and Canada's Ontario Province, has formed a unique archipelago known as the Thousand Islands. These islands, actually numbering more than 1,800, provide shelter, breeding grounds and nurseries for a wide variety of wildlife. The river is renowned as a great freshwater sport-fishing resource for pike, bass and muskellunge, and the islands are tourist magnets dotted with quaint cottages and offering excellent locations for swimming, camping, boating, hunting and scuba diving.

But there is trouble in this paradise. Breathtakingly beautiful scenery hides serious ecological damage below the river's surface. Fish and wildlife populations, and the habitats they need for survival, are declining. Invasive species are entering the ecosystem at a rate of about one every eight months. Development pressures are severe, and commercial navigation presents a daily risk of hazardous spills. Compounding these problems is a 50-year-old plan for water-level regulation that has enabled persistent and severe damage of coastal wetlands that are the lifeblood of the ecosystem.

"Save The River," the parent organization for the Upper St. Lawrence Riverkeeper, was organized in 1978 by a dedicated group of citizens determined to fight back against commercial navigation interests and to push for protections for the river's ecosystem. Led by activist Abbie Hoffman (who at the time was living on the river under an assumed name), they succeeded in blocking a proposal to expand shipping in winter months, which would have devastated delicate shoreline habitats. To this day, the St. Lawrence Seaway is closed during winter months.

The Upper St. Lawrence Riverkeeper was organized as a component of Save The River in 2004, and today I serve both as the Riverkeeper and executive director of Save The River. Living six months of each year on one of the Thousand Islands, I have ample opportunity to observe the river as I commute to work by boat each day.

Continuing the 30-plus-year tradition of grassroots community action, area residents recently stopped proposals to widen and deepen

the St. Lawrence Seaway to allow much larger ships into the Great Lakes—a project that would have ecologically damaged the river and the islands and yielded no economic benefit for the surrounding area.

As matters already stand, ships continue to ply the river without technology on board for cleaning their ballast tanks and preventing the invasion of harmful aquatic species into the river. And shipping accidents occur about once a year, further imperiling the river's ecosystem and hurting the tourism economy. On another front, outdated regulation of flows through a massive hydropower dam has allowed nearly 50 percent of the river's wetlands to be damaged.

Thanks, however, to community advocacy and political pressure from the Riverkeeper, agencies that regulate water flows have promised to create a new management plan to protect the river's ecosystem. Last year, New York State announced the imposition of some of the strongest rules in the region concerning clean-up of ship ballast.

Through the decades, the combined entity of Save The River and the Upper St. Lawrence Riverkeeper has added education and research to its mission and goals. But, as it has grown and changed, what has remained constant is that the people who love the St. Lawrence River, whether year-round or seasonal residents, whether one-time or frequent tourists, entrust its health and safety to this organization that an incognito American activist helped to launch in the late 1970s. **W**



ABOVE: BAYKEEPER JOHN NELSON PILOTS THE GRAND TRAVERSE BAYKEEPER PATROL BOAT.



LEFT: GRAND TRAVERSE BAYKEEPER'S PATROL BOAT IS ALWAYS READY TO GO. TOP RIGHT GRAND TRAVERSE BAYKEEPER JOHN NELSON. BOTTOM RIGHT WATERSHED CENTER EXECUTIVE DIRECTOR ANDY KNOTT (LEFT) AND GRAND TRAVERSE BAYKEEPER JOHN NELSON DISCUSS AQUATIC PLANT BEDS IN GRAND TRAVERSE BAY.



A NORTHERN PARADISE AT RISK

GRAND TRAVERSE BAYKEEPER AND WATERSHED CENTER STRIVE TO PROTECT IT

BY SARAH U'REN, PROGRAM DIRECTOR, THE WATERSHED CENTER GRAND TRAVERSE BAY



There's a joke in northern Michigan that pilots flying into Traverse City sometimes check with the control tower to make sure they're not in the Caribbean. They've been surprised by Grand Traverse Bay's beautiful aquamarine hues, by a northern paradise that no one had told them about.

The bay, jutting into the northwest corner of Michigan's Lower Peninsula, is the stretch of Lake Michigan that separates the peninsula's "pinkie finger" from the rest of its "mitten." Its watershed covers 976 square miles of majestic, glaciated terrain bejeweled with cerulean lakes. But this glorious natural landscape, and the Bay itself, are imperiled by the intrusive realities of modern living.

Excess nutrients, such as phosphorus, derived from lawn fertilizers and septic systems, are one of the two top threats to the watershed. Sedimentation, largely due to erosion, is the other. The battle against these threats was first seriously engaged when the

Watershed Center Grand Traverse Bay was formed in 1994, and has been reinforced since 2002, when Grand Traverse Baykeeper John Nelson was hired.

Since 2003, through its EPA-approved Grand Traverse Bay Watershed Protection Plan, the Center has implemented more than \$2.7 million in state, federal and private funding and conducted projects that have prevented more than 7,000 tons of sediments and more than 8,000 pounds of nutrients from entering Grand Traverse Bay. And locally secure millions of dollars in additional funding by using the plan to obtain conservation easements that prevent development of private lands.

Another project was the restoration, in Traverse City, of a section of Kids Creek, which was once in a pasture for the largest buffalo herd east of the Mississippi. More than 30 erosion sites along a 3,000-foot stretch of the creek were restored, and 18 acres surrounding the meandering stream were placed in a conservation easement. Kids Creek is still on Michigan's list of impaired waters, because of its anemic aquatic insect community, sedimentation and altered flow, all resulting from runoff. But the Baykeeper and staff are now working with the State Department of Environmental Quality to address these problems and remove Kids Creek from the list.

Excess nutrients cause harmful overgrowth of otherwise beneficial aquatic plants known as macrophytes. In 2009,

Baykeeper Nelson and Watershed Center staff plied the bay in the aluminum-hulled tugboat Bay Monitor to complete a macrophyte-bed study. Program Director Sarah U'Ren flew with a local pilot to locate the aquatic plant beds and mark them on maps. Then she, Nelson and Program Associate Maureen McManus spent 162 hours on the boat locating the plant beds and sampling them to determine their types and densities. They found that the presence of these aquatic plant beds has tripled since 1998.

The eco-friendly Bay Monitor features an energy-efficient diesel engine fueled by bio-diesel, a clean bilge system, dry exhaust and a composting head. All of its trim, cabinetry and flooring are fashioned from wood native to the Grand Traverse Bay watershed.

The other culprits behind the aquatic plant beds are invasive zebra and quagga mussels, which filter micro-organisms out of the water, allowing sunlight to penetrate farther and stimulate plant growth. And, the high phosphorous content of the mussels' waste may further increase plant growth.

Part of Grand Traverse Bay is also on Michigan's list of impaired waters due to high levels of *E. coli*, which can be flushed during heavy rains from Traverse City storm drains. The Watershed Center recently received \$250,000 from EPA's Great Lakes Restoration Initiative to improve stormwater management and the quality of runoff at a local beach where two storm drains discharge just offshore of the swimming area.

In summer 2010, the Baykeeper and Watershed Center staff worked with Environmental Canine Services to sniff out illicit wastewater pipe connections to the stormwater system and leaks in sanitary sewer systems. The shaggy agent in this adventure answers to the name of "Sable," a German shepherd mix scent-trained to detect human waste and detergents. Since he barked several times during his walk along the storm drain system, Watershed Center staff will begin working with Traverse City officials to further pinpoint exact areas where there are leaks or illegal hookups.

This particularly satisfying episode, it is hoped, will result in another victory for the Watershed Center and Baykeeper, joining such as these:

Supporting the efforts of a coalition that forced Williamsburg Receiving and Storage to pay \$350,000 in damages in 2007 for illegally discharging cherry-processing wastewater for six years. Rife with chloride, this wastewater was contaminating groundwater and killing trees and vegetation. WRS also had to agree to haul all wastewater to treatment plants, install a wet scrubber to control odor, and install \$100,000 worth of monitors to measure air levels of hydrogen sulfide. And, under a separate judgment, it had to pay Michigan \$100,000 in fines after a million-gallon wastewater spill into a lagoon.

Convincing city and county commissioners in 2009 to remove the upper three dams on the Boardman River, setting in motion the largest river restoration project in Michigan's history. More than 250 acres of wetlands and nearly 60 acres of upland habitat will be restored. The Boardman supplies 30 percent of the bay's surface water.

Helping to convict the owner of Cherry Tree Inn for illegal beach grooming, which involved plowing a bulldozer 120 feet into the bay. His sentence included fines, jail time, beach restoration and community service.

Local governments, businesses and shoreline property owners now seek the Baykeeper's and the Watershed Center's input before undertaking projects that could affect water quality. Property-owners ask Baykeeper Nelson to visit their homes and offer his input on how to establish riparian buffers. Businesses and townships contact the Center for advice about how to install rain gardens to treat runoff. This makes the Baykeeper and the Center proactive, not just responding to problems and crises, but protecting and improving water quality as an ongoing process – and being integral to a freshwater community that understands that water quality defines its quality of life. Perhaps that's the Waterkeeper ideal. W

WATERSHED PROTECTION PLAN PROJECTS HAVE INCLUDED:

IMPROVING FOUR ROAD CROSSINGS AND 25 STREAM BANK STABILIZATION SITES

INSTALLING MORE THAN 5,550 SQUARE FEET OF PERVIOUS PAVEMENT

PLANTING MORE THAN 18,000 SQUARE FEET OF RIPARIAN RIVER OR OTHER BANK BUFFERS

ESTABLISHING MORE THAN 4,300 CUBIC FEET OF RAIN GARDENS.



ABOVE LEFT: LAKE ONTARIO WATERKEEPER MARK MATTSON HOLDS A DEAD FISH FOUND ON THE ST. CLAIR RIVER. BELOW LEFT: MARK MATTSON ON THE DON RIVER IN TORONTO. RIGHT: YOUNG ANGLERS ON LAKE ONTARIO.

ABOVE: WOODBINE BEACH ON LAKE ONTARIO.

A VISION FOR THE FUTURE OF LAKE ONTARIO

LAKE ONTARIO WATERKEEPER HAS STOPPED MULTINATIONAL CORPORATIONS FROM POLLUTING THE AIR AND WATER. BUT THEY'VE ALSO CREATED A VIBRANT COMMUNITY OF PEOPLE WHO UNDERSTAND THE LINK BETWEEN THE ENVIRONMENT AND THEIR OWN WELL-BEING

BY MARK MATTSON, LAKE ONTARIO WATERKEEPER

Today, Lake Ontario Waterkeeper (LOW) is a large and successful environmental organization. It has fought many legal battles on behalf of the environment, and won. It has also educated thousands about the need and means to protect and celebrate our lake. And, it has a large and growing list of supporters. But, this was not always the case. Every organization needs to start somewhere and it was no different for Lake Ontario Waterkeeper. With little money and few supporters, we set out to achieve our vision of a swimmable, drinkable, fishable future for everyone.

Long before contemplating starting up our Waterkeeper organization, I was a criminal lawyer. My partner, Doug Chapman, now the Fraser Riverkeeper, involved me in environmental prosecutions, environmental assessments and public regulation over hydro and gas utilities. I learned a great deal in this time. Working with Doug, we prosecuted polluters and secured convictions for discharging toxins into the Great Lakes. We were the first to send a serious polluter to jail in Canada and we were instrumental in undermining the biggest nuclear expansion in Canadian history. We were public interest lawyers with a focus on environmental law.

In the mid 1990's, everything changed for the worse when the Ontario government decided to cut environmental enforcement budgets and rid itself of the need for public hearings and oversight. Almost overnight, I saw the departure of some of the best and brightest environmental lawyers, scientists and investigators. The government intentionally reduced the ability of green police to do their job. As a result, Doug Chapman and I enlisted one of our clients to help establish a group called the Environmental Bureau of Investigation, which relied on volunteer experts, scientists and investigators to try to fill the enforcement vacuum that government had created. In our first four years we were successful in private investigations and prosecutions of government bodies that allowed pollution to enter our waters. We secured the biggest

finest in Canadian history for landfill pollution and private prosecutions. We helped write a book about our experiences called "A Citizens Guide to Private Prosecutions." It was as a result of that book that Murray Fisher, outreach coordinator for Waterkeeper Alliance, called me in 1999.

Murray understood the need for full-time environmental advocates for waterbodies and he had the passion to illustrate how exciting a Lake Ontario Waterkeeper organization would be. When I first met Murray, I also invited Krystyn Tully over to talk. Krystyn was working for my client at the Walkerton Inquiry and was instrumental in helping with cross examination and argument in one of Ontario's most important reviews of environmental law and policy. Murray became an immediate friend with Krystyn and me, and we agreed that we would go ahead and apply for a license to start Lake Ontario Waterkeeper. After one failed application and two appearances at WKA conferences, in California and Florida, Lake Ontario Waterkeeper was launched in December 2001.

Despite the success of our launch with Robert F. Kennedy, Jr. and former Prime Minister John Turner present, things were tough for many years. We had little money for salaries. Our membership was small and our offices were more like a barn with furniture. We prosecuted polluters, participated in environmental assessments, educated law students, and communicated our work to whoever would listen. We also spoke to many

who didn't want to listen. A few years into our efforts, we embraced the idea that we needed to be more than just a tough and dogged pursuer of polluters, but also a creative, open, fun organization that had a vision for Lake Ontario. Despite winning legal battles and recognition for environmental expertise, we understood that most people just wanted clean water... swimmable, drinkable, fishable water. Accordingly, we began to operate on two levels: one in environmental law enforcement and environmental decision making over natural resources, and the other as artists painting a picture of what our environment could be.

Over the last five years, Lake Ontario Waterkeeper has proved the success of our model. As legal advocates, we've helped stop multinational corporations from polluting our air and water with dioxins and furans, mercury and other toxins from burning dirty fuels. We've forced clean-ups by landfill operators and industrial polluters where government regulators had failed. We've held polluters and governments accountable in many hearings and public processes and made sure the environment wasn't traded off for increased profits. In addition, we've increased our membership and our support, and created a community of people who understand the link between the environment and their own well-being.

DESPITE WINNING LEGAL BATTLES AND RECOGNITION FOR ENVIRONMENTAL EXPERTISE, WE UNDERSTOOD THAT PEOPLE JUST WANTED CLEAN WATER... SWIMMABLE, DRINKABLE, FISHABLE WATER.

Lake Ontario Waterkeeper has been trying to figure out how to introduce more people to Great Lakes' beaches. We want to make it easier for them to find their beach and to know when it is safe to swim.

This summer, we launched the Swim Guide. The Swim Guide is a free application for your smartphone (and a website, too). It shows you where the closest beaches

are, gives you real-time status updates, and lets you compare your local beach to other beaches in Canada and the United States. The Swim Guide started out as a project for Lake Ontario, then spread to the Great Lakes, Fraser River, the North Saskatchewan River, and Biscayne Bay. In a few years, we hope there's a Swim Guide for every beach in North America.

It's been a long, strange and often difficult road—from the idea of forming a Waterkeeper organization to celebrating 10 years of success. But, here we are, as energized and optimistic as when we began. Our organization has always been a fun place to work, an amazing place to meet people and an effective and professional environmental watchdog. Lake Ontario Waterkeeper is no longer just Krystyn Tully and myself, but includes other passionate and professional leaders who not only help keep LOW the best friend Lake Ontario ever had, but ensure it will continue to grow and prosper in the future. **W**



ABOVE: A VIEW OF OTTAWA'S PARLIAMENT BUILDINGS, 2006.

WILD AND DIVIDED

BRINGING PEOPLE TOGETHER TO PROTECT THE OTTAWA RIVER

BY MEREDITH BROWN, OTTAWA RIVERKEEPER

Imagine you are deep in the woods of Northern Quebec, following a small stream just outside a wildlife refuge. The stream grows larger as it flows through lakes and reservoirs on its way to giant Lake Timiskaming. It has become a fast-moving river, and it takes you past cliffs rich with scientific history, through old-growth forests that are home to 150-foot white pines that are the tallest in Ontario. Along one 12-kilometer stretch of the river that contains some of the world's wildest whitewater, you'll find daring canoeists, kayakers, and rafters trying their luck. The river calms and flows on, dividing the provinces of Quebec and Ontario and passing through the heart of Ottawa and Parliament Hill. Downstream, 1,271 kilometers further, the Ottawa River wraps around the island of Montreal, where it meets the St. Lawrence River as it flows freely to the Atlantic Ocean.

This wild and beautiful river hosts a diverse range of ecosystems. It is a critical recreational and economic resource, and has played a profound role in Canadian history and culture since it was timiskaming by Samuel de Champlain,

accompanied by Algonquin guides, in 1615.

The Ottawa River drainage basin spans 146,000 square kilometers – a greater area than Switzerland, Denmark and The Netherlands combined. About 1.7 million people live in more than 250 municipalities in its watershed, more than 1.2 million of them in the cities of Ottawa and Gatineau. These numbers may be impressive, but they subject the river to overlapping and conflicting municipal, provincial and federal overseers. Put simply, protecting the Ottawa River is a jurisdictional conundrum.

The challenge falls heavily on me as the Ottawa Riverkeeper. I have discovered over seven years in that post that the river is severely threatened by a lack of collaboration among these diverse, complex and underfunded regulatory agencies. As a result, accountability for the long-term health of the river is lacking.

In an average year Ottawa Riverkeeper investigates about 50 issues of concern that are raised by people around the watershed. But its staff of four cannot tackle every issue in depth; so prioritization is essential. We've got just about everything you can imagine impacting our river. The list includes pulp mills, a leaking nuclear reactor, 50 major dams and more proposed each year, sewage, mining, development in the floodplains, invasive species, and wetland destruction. You can still enjoy a swim in the river in downtown Ottawa – if you choose your time and place carefully.

In 2004, members of Canada's national paddling team approached me to express their

concern about frequently floating through what looked and smelled like raw sewage. These athletes train seasonally within sight of Parliament Hill and just downstream of one of the city's largest combined sewer pipes. Following up on the paddlers' complaint, I discovered that the City of Ottawa was dumping about one billion liters of untreated sewage and stormwater into the Ottawa River each year. And, this filthy deluge is augmented by other municipalities in Ontario and Quebec. In neither province is there a regulatory requirement for localities to disclose combined sewer overflow spills, either to regulators or to the public. The City of Ottawa, in fact, is practically the only municipality on the river that even estimates or keeps track of the amount of sewage it pours into the river.

In 2006, a large and continuous sewage spill from Ottawa forced the closing of downstream beaches for over a month. Although it was not reported to the regulators, the breach was eventually uncovered and the city was fined \$562,000 for violations of the Ontario Clean Water Act. This precedent-setting case also led to a requirement that future spills be publicly disclosed, and, as a result, the City of Ottawa developed the "Ottawa River Action Plan," a \$250-million infrastructure-upgrade to reduce combined sewer overflows to zero during the swimming season.

Proud as I am of these developments, our work is far from over. Across the river, in the City of Gatineau, sewage spills are just as frequent as they've been in Ottawa, and the City



ABOVE: SCHOOL CHILDREN DRIVE HOME OTTAWA RIVERKEEPER'S MESSAGE. BELOW LEFT: KAYAKS PULLED OUT ALONG THE OTTAWA RIVER'S SHORELINE. BELOW RIGHT: A FLOTILLA PADDLES PAST OTTAWA'S PARLIAMENT HILL ON CANADA RIVERS DAY IN 2008.

makes no effort to reduce them – it does not even monitor them. Nor do most of the smaller, rural communities on the river.

Most residents of these towns and villages use septic tanks that must be pumped every few years. But, as Ottawa Riverkeeper discovered, to its further amazement, it is perfectly legal in Ontario to spread on the land the untreated septage that is removed from these tanks. The Ministry responsible for regulating sewage officially discourages this practice, but does nothing to prevent it.

For this and many other reasons, I have worked to bring municipal leaders and regulators in and around the watershed together. It soon became clear that they had a lot to learn from each other. Some municipalities had built successful septage treatment facilities, while others were still paying consultants huge sums to investigate options for treatment. There were local leaders who thought it was acceptable to dump poorly treated sewage into the river, rationalizing that their volumes were much less than Ottawa's. It was time to share information about and responsibility for this situation, and to initiate collective action throughout the watershed.

So, in 2010, Ottawa Riverkeeper hosted the first-

ever Ottawa River Summit, a meeting of 200-plus elected municipal leaders, First Nation chiefs, conservation authorities and representatives from relevant provincial and federal agencies. Sharing projects, debating models for coordination, and speaking freely about their concerns for the river, participants laid the groundwork for collective action to protect it. Algonquin Elder William Commanda (Order of Canada) described the summit as a necessary step towards creating a collective sense of responsibility for the great waterway that is shared by all who had gathered.

There are parts of the Ottawa River that look much as they did the on the day that Champlain discovered it. But, the eye cannot

detect many cumulative and unmitigated impacts, such as what has happened to the life beneath the water's surface. The Ottawa River is home to 96 species of fish, including migratory species such as lake sturgeon, muskellunge and American eel. These three, which travel to the Sargasso Sea to spawn, are at risk of extinction. The eel particularly are impeded in their upstream routes by the river's numerous dams, and, going downstream, are often fatally caught in turbines at hydroelectric facilities.

In 1902, a newspaper vividly depicted what "must have been hundreds of thousands" of American eels caught in a mill-wheel at Gatineau. Today, catching an eel in the Ottawa River is rare, even for the fisheries-biologists who search for them. This alarming attrition saddens me, as it does everyone who cherishes this great waterway. But, ever the optimist, I see the revelation of such grim developments as an opportunity to increase awareness of the river's problems and address the unfairness of corporate operations conducted at the expense of biodiversity, recreation and cultural heritage. It's time to turn the tide. **W**

IN AN AVERAGE YEAR OTTAWA RIVERKEEPER INVESTIGATES ABOUT 50 ISSUES OF CONCERN THAT ARE RAISED BY PEOPLE AROUND THE WATERSHED. BUT ITS STAFF OF FOUR CANNOT TACKLE EVERY ISSUE IN DEPTH; SO PRIORITIZATION IS ESSENTIAL.



ABOVE: ANGLERS PROTEST MASSIVE FISH KILLS CAUSED BY WATER INTAKES AT THE BAYSHORE/FIRST ENERGY POWER PLANT AT THE OUTFALL OF THE MAUMEE RIVER IN TOLEDO, OHIO.



ABOVE: LAKE ERIE WATERKEEPER SANDY BINH WALKS THE SHORES OF LAKE ERIE.

WHEN GREEN'S THE WRONG COLOR

AFTER DECADES OF PROGRESS, FAST GROWING TOXIC ALGAE IMPERIL LAKE ERIE AGAIN

BY SANDY BINH, LAKE ERIE WATERKEEPER

Two-hundred-and-forty miles long and 57 miles wide, Lake Erie is the 12th-largest lake in the world, and the fourth-largest, southernmost and shallowest of the Great Lakes. It is 24-feet-deep at its western end, 210 feet at its eastern end, and its waters turn over every 2.6 years. It provides drinking water to 11 million people and contains more consumable fish than all the other Great Lakes combined. But, it is a lake in trouble.

Satellite photos show muddy water in West Erie due to the sediment deposits from the Detroit and Maumee Rivers and ongoing re-suspension from wind-and-wave action. More than 80 percent of Erie's water is supplied through the Detroit River from Lakes Huron and Superior, and along that route flow sewage from Detroit and chemicals from the city of Sarnia, Ontario and the agriculturally-based Thames River.

The 1969 burning of the Cuyahoga River where it reaches Lake Erie in Cleveland spurred the adoption of the Clean Water Act

when it was publicized in Time and Newsweek and, featured on The Tonight Show. But a less discussed problem than industrial pollution for Lake Erie was algae. The water in the western basin of the lake had become very green, and fish populations were declining.

As the environmental movement grew from the 1970s to the 1990s, Lake Erie's water, quality improved. In the latter decade about 1,200 charter boats plied the lake. But, there are only about 800 today, because once again "the comeback lake" is sick with algae. The summer of 2010 was the worst toxic algae season in decades, a sad development marked by signs on some western Lake Erie beaches warning bathers to avoid contact with this harmful vegetation. Ohio EPA reported that such contact was causing illness.

The Lake Erie Waterkeeper (LEW) program, focusing on the western end of the lake, formed in 2004 and immediately took on the issue of algae and the declining number of fish. This involved the investigation and confrontation of causes such as factory farms, open-lake dumping and fish kills from intakes at West Erie power plants. LEW bought together fishermen, farmers, yacht-club members, shoreline property owners and others interested in Lake Erie's growing problems.

Since 2004, LEW has made headway on the tough issues of fish killing at the Bayshore Power Plant and open-lake dumping of sediments dredged from Toledo Harbor.

The Bayshore/First Energy Power Plant

is probably the Great Lakes largest fish-killing plant, simply because it is located at the outfall of the Great Lakes region's most biologically productive river, the Maumee. During some months of the year, all of the water in the Maumee River is drawn into the power plant intake. Company studies in 2005 and 2006 showed that annually about 48 million juvenile fish are caught against the screens and 2.1 million juvenile or larval fish pass through the screens. A recent University of Toledo study states that the 2010 fish entrainment was 12 billion.

Under Bayshore's National Pollution Discharge Elimination System (NPDES) permit, issued by Ohio EPA in 2010, the company may install louvers, which have not proven effective in reducing fish destruction. Moreover, Bayshore's narrow intake channel is a particularly unsuitable one in which to place louvers. The NPDES permit is being appealed by the Natural Resources Defense Council, Ohio Environmental Council and Waterkeeper.

Toledo Harbor is the Great Lakes' most-dredged shipping channel, from which 750,000 cubic yards of bottom is dredged annually. Almost all of the dredged sediments are dumped in the open lake where the depth is about 22 feet. The Army Corps of Engineers contends that these sediments do not re-suspend and have no impact on algae growth, but boaters in the area refute that, and they are supported by technical studies. National Wildlife Federation, Lake Erie Charterboats,

and Waterkeeper have appealed the permit that allows open-lake dumping. At the appeal hearing, boaters testified to having observed resuspension of sediments during heavy winds. Waterkeeper is working with government agencies, the port of Toledo and local industries to find innovative solutions to the problem, such as the possibility of using the sediments to create fish-spawning areas and a nutrient sump.

Early this year, LEW expanded its representation to cover the entire lake, and it has begun a program to increase advocacy for the lake in the Cleveland area. Still, western Lake Erie grows greener, and the central basin's "dead zone," an oxygen-depleted area caused by dying algae, grows larger. An Army Corps study in December 2010 determined that the Maumee River and the Detroit River each contributes about 50 percent of the sediment, while the phosphorous input is 67 percent from the Detroit and 28 percent from the Maumee. Agriculture is the major source of phosphorous, but Detroit's wastewater overflows also dump more than a billion gallons of it each year into the shallow West-Erie waters. A cohesive analysis and plan for nutrient reduction is sorely needed in West Erie and in lake tributaries, for the huge yearly growth of algae is again threatening this Great Lake, as it did before the 1970s. Lake Erie Waterkeeper's battle to save Lake Erie is daunting, but its commitment is absolute. **W**

THE SUMMER OF 2010 WAS THE WORST TOXIC ALGAE SEASON IN DECADES, A SAD DEVELOPMENT MARKED BY SIGNS ON SOME WESTERN LAKE ERIE BEACHES WARNING BATHERS TO AVOID CONTACT WITH THIS HARMFUL VEGETATION.

* * *

THE GREAT LAKES CALL TO ACTION

BY JANELLE ROBBINS,
ASSOCIATE DIRECTOR OF WATERKEEPER SUPPORT



ISTOCKPHOTO.COM/DORIN_5



The Great Lakes are an international resource of immense proportions—the Lakes are the largest group of freshwater lakes on Earth, and hold an astounding 20 percent of the world’s fresh surface water. With freshwater resources diminishing in quantity and quality worldwide, you can make a difference today by protecting the Great Lakes and your own water resources.



NATIONAL AND INTERNATIONAL ACTION

Reduce your water footprint. Check out visualizing.org/html5/16506 to see how your country’s average rates against others.

The Great Lakes Water Quality Agreement is an agreement between the U.S. and Canada “to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes basin ecosystem.” Learn more about how this global model for natural resources management works and take action to improve it at www.glu.org/campaigns/healthy_waters/glwqa/act.

If you’re in a Great Lakes state or province, tell your elected officials to make the Great Lakes Compact a reality by passing legislation to implement the Compact to ensure the binational water management strategy is a success. In the U.S., you can visit www.waterkeeper.org/ElectedOfficials to write to your legislators.

LOCAL MOTION

Tell U.S. elected officials to support the Great Lakes Restoration Initiative to provide vital funding for habitat restoration, monitoring and legacy pollution clean up in the Great Lakes.

Tell U.S. elected officials to support the State Revolving Funds in the Great Lakes and beyond to provide critical infrastructure repairs and upgrades, especially green infrastructure, to prevent combined sewer overflows and sanitary sewer overflows that cause drinking water contamination and beach closures.

INDIVIDUAL RESPONSIBILITY

Conserve precious drinking water by installing certified water-saving (and money-saving) products; www.epa.gov/watersense has a great list to get started.

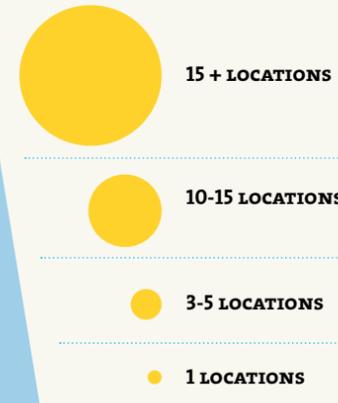
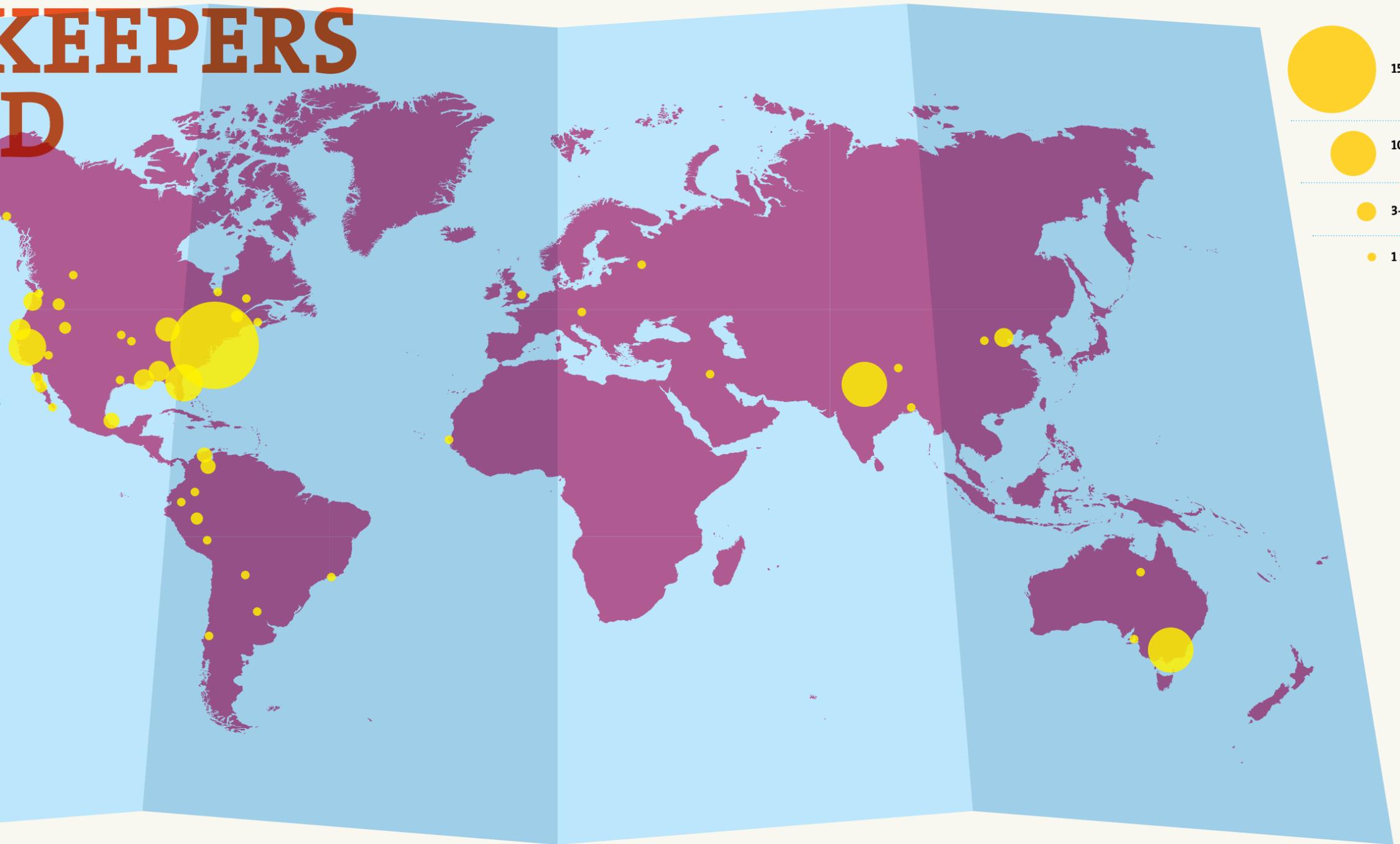
Conserve water and prevent pollution by landscaping with native vegetation, trees and shrubs that reduce the need for irrigation and polluting pesticides and fertilizers; go to www.wildflower.org to find what’s right for your location.

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

LEFT: THE RUGGED SHORELINE OF LAKE HURON'S GEORGIAN BAY. THE BAY IS LOCATED ENTIRELY WITHIN CANADA'S ONTARIO PROVINCE.

WATERKEEPERS AROUND THE WORLD

Waterkeeper Alliance is the most effective advocate for clean water because we act locally and organize globally. Waterkeepers are on patrol in more than 190 watersheds around the world—standing up to polluters and enforcing your right to clean water



AFRICA

SENEGAL:
Hanin Baykeeper

ASIA

BANGLADESH:
Buriganga Riverkeeper

CHINA:

Beiyun Waterkeeper
Middle Han Waterkeeper
Qiantang River Waterkeeper
Upper Yellow River Waterkeeper

INDIA:

Lower Betwa Riverkeeper
Lower Ganga Riverkeeper
Lower Ken Riverkeeper
Lower Yamuna Riverkeeper
Mid Lower Ganga Riverkeeper
Mid Upper Yamuna Riverkeeper
Upper Betwa Riverkeeper
Upper Ganga Riverkeeper
Upper Ken Riverkeeper

Upper Yamuna Riverkeeper
IRAQ:
Upper Tigris Waterkeeper

NEPAL:

Bagmati Riverkeeper

AUSTRALIA

Acheron Riverkeeper
Alpine Riverkeeper
Avon Riverkeeper
Bramble Bay Wetlandskeeper
Coorong and Murray Lakes Waterkeeper
Hawkesbury River Waterkeeper
Mimosa Waterkeeper
Port Phillip Baykeeper
Snowy Estuarykeeper
Surry Riverkeeper
Upper Hunter Waterkeeper
Upper Snowy Riverkeeper
Yarra Riverkeeper
Yarriambiack Creekkeeper

EUROPE

CZECH REPUBLIC:
Morava Riverkeeper

RUSSIA:

Vyatka Riverkeeper

UNITED KINGDOM:

London Canalkeeper

NORTH AMERICA

CANADA:

Fraser Riverkeeper
Fundy Baykeeper
Georgian Baykeeper
Grand Riverkeeper, Labrador
Lake Ontario Waterkeeper
Moose Riverkeeper
Ottawa Riverkeeper
Saskatchewan Riverkeeper
Petitcodiac Riverkeeper

MEXICO:

Bahia de los Angeles Coastkeeper
La Paz Coastkeeper
Loreto Coastkeeper
Los Cabos Coastkeeper
Magdalena Baykeeper

Mexico Valley Waterkeeper
Punta Abreojos Coastkeeper
Rio Grijalva Waterkeeper
Rio Verde Waterkeeper
Tijuana Waterkeeper

U.S. GREAT LAKES:

Buffalo Niagara Riverkeeper
Detroit Riverkeeper
Grand Traverse Baykeeper
Lake Erie Waterkeeper
Milwaukee Riverkeeper
St. Clair Channelkeeper
Upper St. Lawrence Riverkeeper
Yellow Dog Riverkeeper

U.S. GULF OF MEXICO:

Alamosa Riverkeeper
Apalachicola Riverkeeper
Atchafalaya Basinkeeper
Black Warrior Riverkeeper
Cahaba Riverkeeper
Choctawhatchee Riverkeeper
Coosa Riverkeeper
Emerald Coastkeeper
Flint Riverkeeper

French Broad Riverkeeper
Galveston Baykeeper
Grand Riverkeeper, Oklahoma
Hurricane Creekkeeper
Kansas Riverkeeper
Kentucky Riverkeeper
Louisiana Bayoukeeper
Lower Mississippi Riverkeeper
Mobile Baykeeper
Ouachita Riverkeeper
Poudre Waterkeeper
Quad Cities Waterkeeper
Sabine Riverkeeper
St. Louis Confluence Riverkeeper
Tennessee Riverkeeper
Three Rivers Waterkeeper
Upper Chattahoochee Riverkeeper
Upper Coosa Riverkeeper
Upper Watauga Riverkeeper
Wabash Riverkeeper
West Virginia Headwaters Waterkeeper
Youghiogheny Riverkeeper

U.S. NORTH ATLANTIC:

Anacostia Riverkeeper
Assateague Coastkeeper

Baltimore Harbor Waterkeeper
Buzzards Baykeeper
Casco Baykeeper
Chester Riverkeeper
Choptank Riverkeeper
Delaware Riverkeeper
Gunpowder Riverkeeper
Hackensack Riverkeeper
Housatonic Riverkeeper
Hudson Riverkeeper
Lake Champlain Lakekeeper
Lake George Waterkeeper
Long Island Soundkeeper
Lower James Riverkeeper
Lower Susquehanna Riverkeeper
Miles-Wye Riverkeeper
Narragansett Baykeeper
New York/New Jersey Baykeeper
Patuxent Riverkeeper
Peconic Baykeeper
Potomac Riverkeeper
Raritan Riverkeeper
Sassafras Riverkeeper
Severn Riverkeeper
Shenandoah Riverkeeper
South County Coastkeeper

South Riverkeeper
Upper James Riverkeeper
Virginia Eastern Shorekeeper
West/Rhode Riverkeeper

U.S. PACIFIC:

Animas Riverkeeper
Big Blackfoot Riverkeeper
Black Mesa Waterkeeper
California Coastkeeper Alliance
Colorado Riverkeeper
Columbia Riverkeeper
Cook Inletkeeper
Humboldt Baykeeper
Inland Empire Waterkeeper
Klamath Riverkeeper
Lake Pend Oreille Waterkeeper
Monterey Coastkeeper
North Sound Baykeeper
Orange County Coastkeeper
Prince William Soundkeeper
Puget Soundkeeper
Rogue Riverkeeper
Russian Riverkeeper
San Diego Coastkeeper
San Francisco Baykeeper

San Luis Obispo (SLO) Coastkeeper
Santa Barbara Channelkeeper
Santa Monica Baykeeper
Silver Valley Waterkeeper
Spokane Riverkeeper
Tualatin Riverkeeper
Ventura Coastkeeper
Willamette Riverkeeper

U.S. SOUTH ATLANTIC:

Altamaha Coastkeeper
Altamaha Riverkeeper
Biscayne Bay Waterkeeper
Blackwater/Nottoway Riverkeeper
Cape Fear Riverkeeper
Catawba Riverkeeper
Charleston Waterkeeper
Congaree Riverkeeper
Haw Riverkeeper
Indian Riverkeeper
Lower Neuse Riverkeeper
Ogeechee Riverkeeper
Pamlico-Tar Riverkeeper
Santee Riverkeeper
Satilla Riverkeeper
Savannah Riverkeeper

St. Johns Riverkeeper
Upper Neuse Riverkeeper
Waccamaw Riverkeeper
White Oak-New Riverkeeper
Yadkin Riverkeeper

SOUTH AMERICA

ARGENTINA:
Parana Waterkeeper

BOLIVIA:
Choqueyapu Riverkeeper

BRAZIL:
Guanabara Baykeeper

CHILE:
Maule Itata Coastkeeper

COLOMBIA:
Bocas de Ceniza Waterkeeper
Bogota Riverkeeper
Cartagena Baykeeper
Jordan Riverkeeper
Meta Waterkeeper
Rio Cravo Sur Waterkeeper

Rio Inirida Waterkeeper
Rio Pauto Waterkeeper
ECUADOR:
Estero Salado Waterkeeper
Guayllabamba Waterkeeper

PERU:
Central Huallaga Riverkeeper
Ramis Riverkeeper
Rio Mapacho Waterkeeper



RIGHTS OF THE WATERWAY

BY LINDA SHEEHAN

Tucked into a recent report by California's top scientists, legal minds and policymakers on that quintessential California conundrum—water—is a striking recommendation to consider “endangered species triage” as a way of ensuring “aggregate species recovery” in the face of competing water uses. The report unrestrainedly adds that the Endangered Species Act “constrains [water] reconciliation activities” because of its lack of a “provision for allowing species to go extinct.”

Putting aside for the moment the astonishing hubris of assuming that we can accurately predict which species are essential to “aggregate species recovery,” and tabling the much larger moral and ethical implications of baldly pronouncing that we are now ready to play God, how did we get to this incredible “solution”? In fact, this “solution” exemplifies, and is an outgrowth of, a fundamentally flawed world-view that is destroying our ecosystems, preventing needed reform, and taking us down a path that leads to our scrabbling for the remnants of a once-beautiful and flourishing world.

Our current legal approach to interactions with our environment derives from an operative—and faulty—perspective that water, land, forests, air and wildlife are “resources” or “wealth” to be extracted, manipulated and controlled for human benefit. At the turn of the 20th century, the first chief of the United States Forest Service, Gifford Pinchot, attempted to establish the fast-growing nation's “conservation ethic” by myopically focusing on such “controlled” use of natural “resources.” Pinchot's contemporary and rival, John Muir, provided eloquent arguments to the contrary, which recognized and respected our integration with the natural world:

“When we try to pick out anything by itself, we find it hitched to everything else in the universe. One fancies a heart like our own must be beating in every crystal and cell”

The sun shines not on us but in us. The rivers flow not past, but through us”

Muir's observations reflected centuries of indigenous traditions throughout the continent. For example, California's native peoples understood their environment to have an intrinsic value of its own, and that “nature was neither the enemy nor simply a means to an end or a commodity to be exploited for wealth or power.” Many indigenous groups believed that plants, animals, springs and trees could think and feel. As one modern-day California tribal leader explains, “The salmon are our relatives, are sacred, and necessary for the continuation of life.” Although native communities protected their water sources, the concept of “private” rights in the use of water was unknown. Water was essential to life, and it could not be bartered or sold.

The tension between these attitudes—Pinchot's view of conservation policy as a strategy for “controlled” use of the environment, and Muir's conservation ethic of healthy, functioning ecosystems respected for their own existence—eventually resolved in Pinchot's favor. Today, Pinchot's tenet of human superiority over a servile environment is so ingrained in our national consciousness that we rarely notice, let alone challenge, it. But it is, in fact, merely an assumption that we can change to our collective advantage.

We built our modern environmental laws on Pinchot's philosophical foundation, structuring them to allow for our continued, destructive use of the natural world to suit our desires, rather than our needs. We set up an elaborate network of permits and regulations to “control” these uses, slowing the associated environmental decline just enough to avoid inconvenient, short-term human impacts. We chose to make the ecosystems' needs, and our collective long-term requirements, mere afterthoughts. By ignoring the reality that the natural world is an extension of our own bodies, we dismissed, to our growing detriment, the

alternative goal: incorporating into our legal system a fundamental respect for the natural world, and recognition that it is an integrated whole, of which humans are just one part.

The California water report's proposed “reform” of “endangered species triage” demonstrates how flawed legal foundations, set in place long ago, will come home to roost. Not only endangered species, but also humans have strikingly become part of the “triage” process, a fact the California water report notably omits. For example, clean water today bypasses many poorer California communities, forcing families to buy bottled water with limited funds in order to avoid illness and even death by drinking from the tap. The ethical system underlying a water “reform” process that chooses which species will live or die parallels one that requires underprivileged communities to choose between purchasing clean water or food. Without genuine reform based on legitimate assumptions about our place in the world, this triage process will continue to spread within the natural world and outward to humans. If we decide it is acceptable to select which other species may share the world's water, we set up an ethical structure that will lead to denying water to our own. Indeed, it already has.

A look at existing water law in California and the Great Lakes helps illustrate the type of reforms that are needed. California water law recognizes private rights in the use of water, but only indirectly addresses the need for healthy, clean flows, through such mechanisms as pollution permits and conditions on water diversion. Water use permits are regularly issued with little awareness of the amount of water already being used or diverted, and with little regard for ecosystem impacts. Recent estimates indicate, incredibly, that the State has allocated formal, private rights to more than eight times the water that actually exists in the vast Bay-Delta Estuary. Meanwhile, the basic water needs of rivers, estuaries and other aquatic ecosystems go unrecognized. As a result, the integrity of California's water



**“THE SUN SHINES NOT ON US BUT IN US.
THE RIVERS FLOW NOT PAST, BUT THROUGH US.”**

— JOHN MUIR

WE MUST EMBRACE THIS REALITY, AND INSIST ON THE INHERENT RIGHTS OF ALL OF THE EARTH'S ECOSYSTEMS AND CREATURES TO THRIVE AND EVOLVE.

systems are increasingly dependent on last-gasp applications of the Endangered Species Act, followed by predictable political pushback.

By contrast, the Great Lakes Water Compact acknowledges the need for “protecting and restoring the hydrologic and ecosystem integrity of the [Great Lakes] Basin,” and provides much stronger tools for water management than in California. Unlike California’s regulations, the Compact requires data collection on “the location, type, quantity, and use of [water] resources and . . . of Withdrawals, Diversions and Consumptive Uses,” and it provides for application of this data to oversight of new and increased diversions of water within the Great Lakes Basin. It also allows for citizen enforcement.

Despite these significant milestones over California water law, the Compact still misses the mark. Rather than advancing reforms in governance that would measurably improve the health of an increasingly stressed Basin, the Compact chooses only to “prevent significant adverse impacts of withdrawals and losses on the Basin’s ecosystems and watersheds.” In other words, even this innovative Compact fundamentally accepts that ecosystems must degrade in order to satisfy human desires. The pace of ecological decline may be slower in the Great Lakes Basin than in California, but the downward trajectory is set.

It is time to set a different trajectory. The assumption that we should manipulate the environment as we choose to maintain a (false) sense of security in our lives is dangerously outmoded, and it ignores the lesson Muir and indigenous peoples taught us; that we are bound to the Earth. We must embrace this reality, and insist on the inherent rights of all of the Earth’s ecosystems and creatures to thrive and evolve.

The California Coastkeeper Alliance has been working to advance this doctrine by advocating for formal, legal water rights for rivers and other waterways, rights that balance human needs for their water. Because legal rights may be assigned only for diversion for human uses in California,

ecosystems will lose in every confrontation. The Coastkeeper Alliance recommends that water rights be assigned to ecosystems through science-based assessment of the ecosystems’ needs, so that the ecosystems have a seat at the planning table. These water rights would be upheld and enforced by independent legal guardians acting on behalf of the ecosystems. Fees charged to human users for the privilege of water diversions would pay for these efforts.

Sufficient information exists now to assess how much water ecosystems need to maintain health and diversity. We can use these figures to “harvest” enough legal water rights for the affected ecosystems by reviewing unexercised “human” water rights, collecting rights for water “unreasonably” or “wastefully” used, conducting new adjudications for water use, re-assessing allocation of federal water rights, enhancing conservation, encouraging reuse, and other actions. Formalizing water rights for ecosystems in amounts that meet waterway needs will help ensure that we fully consider and address those needs, that we plan more effectively overall, and that we share our water for the maximum benefit of both people and the natural world.

Water law in the Great Lakes can similarly begin to address the rights of ecosystems and their inhabitants to thrive and evolve. A 2001 agreement signed by Great Lakes governors and premiers recognized the need to develop “measures of improvement to the waters and water-dependent natural resources of the Great Lakes Basin” – “improvement” being defined as ensuring “additional, beneficial, restorative effects to the physical, chemical, and biological integrity of the waters . . .” Rather than simply slowing inevitable decline in the face of the inexorable human pressure to lay claim to water, these “improvement” provisions focused on advancing the ecological health of waterways.

The ensuing Compact, however, failed to include this directive. That decision should be reconsidered. The “improvement” provisions should be integrated into the Compact, and guardians should be empowered to enforce

them on behalf of affected ecosystems. These amendments should apply not only to new or increased withdrawals and diversions, but also to existing water rights, which should be regularly re-evaluated to

ensure that they too promote better ecological health. Such actions would begin to reverse the downward trend caused by current laws and enforce the inherent rights of ecosystems and their inhabitants to flourish, thrive and evolve.

These reforms do not stop at our environmental laws. Our nation’s economic, financial and corporate governance systems similarly arose from a flawed foundational principle of “control over nature.” American governance in general should reflect a deep understanding of our connectedness with the natural world. Because it does not, even environmental laws that fully incorporate respect for the rights of ecosystems will likely fail when corporate “rights” to “resources” are asserted, or when financial analyses are presented that focus almost exclusively on short-term economic impacts to (often wealthier) humans. In view of this, California Coastkeeper Alliance has been working with one Southern California municipality to develop a model “sustainability bill of rights” that recognizes the community’s “environmental footprint” and defines the actions needed to become self-sufficient in water, energy and food. It then establishes the rights of the community and affected ecosystems to fulfill these needs in competition with corporate attempts to thwart them, and sets up an enforcement system for protecting these rights.

As other communities, states and nations take up similar initiatives, the premise of our governance systems will hopefully start to shift away from relentless destruction and species “triage,” and toward truly sustainable, respectful relationships with the natural world. Along this path, “environmentalism” itself would evolve from a small segment of the population acting to safeguard the planet, into a deeply felt awareness in the hearts and minds of all individuals—a consciousness that guides our lives, and that leads to choices that benefit all Earth’s inhabitants.

LINDA SHEEHAN IS THE EXECUTIVE DIRECTOR OF CALIFORNIA COASTKEEPER ALLIANCE.

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hybrid living



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me.*

*Here's the brewery
I own.*

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