

“In a democracy, every citizen, regardless of his interest in politics, holds office; every one of us is in a position of responsibility. The kind of government we get depends on how we fulfill those responsibilities.”

—John Fitzgerald Kennedy

**Debra Shore, Commissioner
Metropolitan Water Reclamation District**



2011 ANNUAL REPORT

Two actions by the Board of Commissioners in 2011 will have an enduring effect on the culture of the agency and on the quality of life for Cook County residents. The appointment of David St. Pierre as executive director represents the first time in 50 years that the Board has hired someone from outside to fill the top leadership role. He's brought fresh ideas and a fresh perspective. Second, the vote to support disinfection of the treated water discharged from two of the largest treatment plants is a dramatic shift from the Board's prior position and will make the Chicago waterways cleaner and healthier. I am proud to have had a hand in these big changes.

Ready, Set, Disinfect!

On March 1, 2016, someone at the Metropolitan Water Reclamation District will flick a switch at the Calumet and North Side treatment plants and disinfection of the wastewater being discharged into the Chicago Area Waterway System (CAWS) will begin. May the Hallelujahs resound!

Let me explain. "Disinfection" refers to an additional step in the wastewater treatment process that kills bacteria and other harmful microorganisms still present in the treated wastewater. There are three principal methods used for disinfection: ultraviolet (UV) irradiation; chlorination; and ozonation. That the District does not disinfect the water released from its three largest treatment plants has been a contentious issue for many years. Clean water advocates, recreational users of the waterways, and, beginning in late 2007, the Illinois Environmental Protection Agency (IL EPA), all called upon the MWRD to install disinfection technology and join nearly every other major city in the US in adding this treatment step. Many District staff and Board members, wary of the cost and unconvinced of the public health benefits of disinfection, resisted and even fought new water quality standards proposed by the IL EPA. Indeed, the Board approved an \$8 million epidemiological study conducted by the University of Illinois at Chicago's School of Public Health to determine if recreational exposure to waters with high levels of bacteria posed health risks higher than swimming in Lake Michigan.

📄 [Download PDFs of EPA fact sheets at debrashore.org/disinfection](http://debrashore.org/disinfection)

Why didn't the MWRD disinfect the effluent? Because it was not required to. The permits for the three largest treatment plants did not require the District to perform this additional step because the treated water is discharged into man-made waterways that were not previously considered suitable for recreational use (unlike many cities that discharge wastewater effluent into "general use" waterways). Remember, when the Sanitary & Ship Canal, the North Shore Channel, and the Cal-Sag Channel were constructed beginning in 1889, they were essentially open sewer pipes meant to convey human, animal, and industrial waste away from the lake and to provide a route for commercial barge traffic between Lake Michigan and the Mississippi watershed. For 30 years or more, no sewage treatment existed. No one imagined that someday people would want to canoe or kayak or fish along these waterways!

Yet, largely due to MWRD efforts to reduce pollutants through industrial pre-treatment programs, through improved sewage treatment, and through reduced stormwater runoff, the water quality in the CAWS has improved exponentially following the Clean Water Act of 1972. The Chicago River is now frequented by kayakers, canoeists, crew teams, and fishermen.



Even so, with more and more people using the waterways, the District argued against installing disinfection technology because storms resulting in combined sewer overflows (CSOs) would still cause high bacteria counts in the river and canals. Until the reservoirs that are the final components of the Tunnel and Reservoir Plan (TARP) are completed, some said, it would be foolish to spend the money to disinfect the effluent. There would still be bacteria in the water.

Most victories include moments of high drama, reversals of fortune, obstacles overcome and serendipity. The vote in June 2011 by the Board to support disinfection is no different.

Ready, Set, Disinfect!

A Very Important Letter

As readers of last year's annual report will remember, the Illinois Pollution Control Board (IPCB) has been conducting hearings on the issue of new water quality standards for the CAWS since 2007. In the first half of 2010, the IPCB was nearing a decision on what those designations for recreational use in certain parts of the waterways should be. Suddenly, however, the U.S. Environmental Protection Agency (EPA) made the decision for them.

In May 2011, Nancy Stoner, Acting Assistant Administrator at the EPA, sent a long letter to Lisa Bonnett, Deputy Director of the IL EPA, the purpose of which can be summarized in one sentence: If Illinois doesn't designate most of the CAWS as swimmable, the EPA will do it for them. The letter was shocking. It called for swimmable sections of the Chicago River (from North Side WRP to Bubbly Creek), the Little Calumet River (from its confluence with the Grand Calumet River to the Cal-Sag Channel), and the Cal-Sag Channel (from the Little Calumet River to its confluence with the Sanitary and Ship Canal).

The IPCB was expected to designate much of the CAWS as "incidental contact" recreation—safe enough for boaters and fishers. No one thought that major stretches of the CAWS would be designated as primary contact (i.e. swimmable). A primary contact designation makes any debate about disinfection irrelevant. If people are allowed to swim in the river, any water discharged to it needs to be disinfected first—plain and simple.

MWRD staff had estimated that the cost of disinfection would be a staggering \$977.73 million in 2008, but that estimate included Stickney, the District's largest plant by far. The EPA did not ask for the Sanitary & Ship Canal to be designated as a primary contact waterway. That means that the Stickney plant, which discharges into the canal, would not have to disinfect its wastewater. Without Stickney, the cost of disinfection (at the Calumet and North Side plants only) dropped to \$586.0 million. I'll discuss later how that still sizable number dropped further.

MWRD Board Takes Action

Since the beginning of the disinfection debate, the Board had never taken a policy vote on disinfection. Had I sought to bring the matter to a vote when I arrived in late 2006, I might have gotten two votes in favor. By June 2011, however, we had two new members of the Board—Commissioners Mariyana Spyropoulos and Michael Alvarez—who both supported disinfection. In addition, Senators Dick Durbin and Mark Kirk, Chicago Mayor Rahm Emanuel, a majority of the Chicago City Council, the *Chicago Tribune* and *Chicago Sun-Times* all strongly supported disinfection. That public support and the letter from the EPA proved to be game-changers in the minds of several other members of the Board. Thus, on June 7, 2011, the Board voted 8–1 to disinfect the effluent at Calumet and North Side plants. In so doing, the Board preempted the IPCB, which, two months later, finalized its recreational use designations per the EPA’s demands, cementing the need for disinfection at the two plants.

Disinfection Price Drops

In March 2012, a task force of MWRD employees recommended the adoption of UV technology for disinfection at the North Side plant and chlorination at the Calumet plant for an estimated cost of about \$310.5 million, more than \$275 million *less than the previous estimate*. The new figures include both the capital cost and 60 years of operating and maintenance cost. I am thrilled to report that the MWRD will not need to raise taxes to pay for this water quality improvement.

The Next Part of the Story

March 2016 will mark an important turning point in the history of the CAWS. During the last ice age, a mile-high sheet of ice covered the Chicago region. The gouges left by the retreating glacier became meandering prairie rivers, which have endured for thousands of years. In the 19th and 20th centuries, those same rivers were sacrificed to save our region from the scourge of disease. What will the next chapter of history read? I believe the waterways can become a civic centerpiece, providing unparalleled recreational, cultural, and ecological amenities. A lot of work has been done, and remains to be done, to make this vision a reality. Disinfection is a step in the right direction.

The Eagles Have Landed

The Eagles Have Landed, or, More from the Ongoing Saga of the Proposed Outdoor Police Firing Range



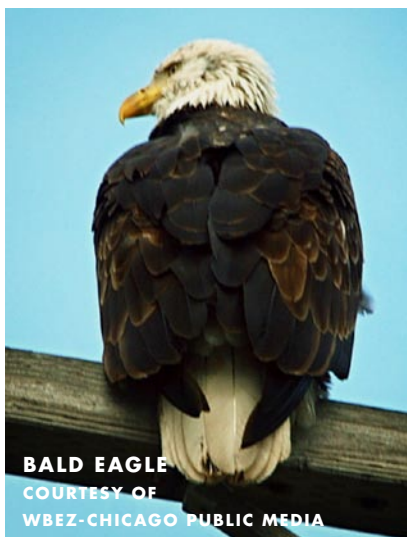
Supporters of mine will recall that one of the issues tying me up in knots last year was the proposal by the Chicago Police Department to build an outdoor firing range on 33 acres of MWRD land near 134 St. and Torrence Ave. on Chicago's far south side. While I understood the need for such a training facility, the proposed site—next to Whitford Pond and immediately across the Calumet River from Hegewisch Marsh (where the City of Chicago someday plans to build the Ford Calumet Environmental Center)—was wrong for this purpose.

After reviewing the proposal, my colleagues and I insisted that a noise study be expanded to include the sensitive natural areas surrounding the site, not just the closest residential neighborhoods. The noise study determined that, indeed, gunfire would be audible in nearby natural areas, including part of the recently announced, 140,000-acre Millennium Reserve. Moreover, for about the same cost as the firing range, roughly \$1.5 million, the 33 acres could have been converted into a wetland that could sequester up to 11 million gallons of stormwater runoff—a function far more in keeping with the District's mission.

Responding to concerns of many birders and conservation advocates, the District asked the Illinois Department of Natural Resources (IDNR) to conduct a wildlife survey to determine if any threatened or endangered species were nesting at the site. That study, conducted last summer, found no threatened species and noted that while the habitat was degraded it had potential for restoration. For months the issue lay dormant.

Many thought that new Chicago Mayor Rahm Emanuel had decided to re-evaluate plans for the firing range, but the request to lease the 33-acre parcel appeared on the Board's agenda at the first meeting of 2012. Residents of the area and representatives from various environmental groups came to voice their opposition to the range. Again, I stated that I felt this was a worthy project in the wrong place, but the proposal to allow the Chicago Police Department to lease MWRD's land passed by a narrow 5-4 vote. A little over a month after the Board's vote, however, a reporter from radio station WBEZ was touring the firing range site in preparation for a story when she and a member of the Chicago Audubon Society saw a bald eagle nesting in a tree nearby. An American Bald Eagle! Heraldic national symbol! Right here in Chicago!

The news immediately drew the attention of IDNR and the U.S. Fish & Wildlife Service. The Bald Eagle, while no longer federally endangered, is still protected under the Bald and Golden Eagle Protection Act, which stipulates that the birds cannot be disturbed. Subsequent visits by wildlife experts confirmed that this was the first time since the 1880s that Bald Eagles have been found nesting in Chicago. Joyful posts spread through local birding websites. Stories appeared in newspapers and on television. Soon thereafter, the Chicago Police Department decided to drop its plans for the site.

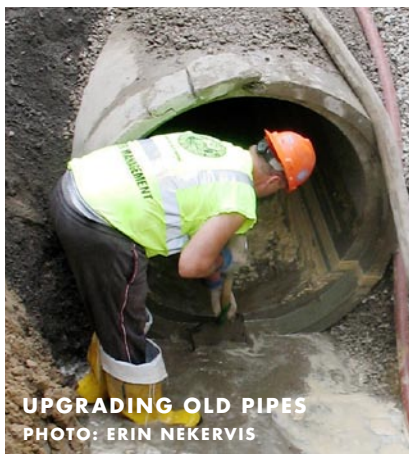


How fitting that the eagles found a site to make their nest in the midst of a degraded, post-industrial landscape. Yet this is an unmistakable sign that wild nature—rare nature—exists in and around the great metropolis, that we can make way for eagles as well as ducklings. Although I am happy that 33 acres in the middle of the Millennium Reserve will be spared, I still feel an outdoor firing range is warranted. The MWRD is one of the largest landholders in Cook County. My hope is that we can collaborate with the Chicago Police Department to find a more suitable location.

Transition Planning

I was honored when Mayor-elect Rahm Emanuel asked me to serve on one of his transition teams—specifically the Energy, Environment, and Public Space Committee—charged with helping to develop a plan for the mayor's first 100 days in office and outlining a list of priorities for his first term.

▶ [Read the Transition Plan at *debrashore.org/transition_plan*](http://debrashore.org/transition_plan)



One priority our committee identified was to upgrade 9,000 miles of aging water and sewer pipe in the city to help eliminate millions of gallons of water leaking from old pipes every year. In his first budget, Mayor Emanuel proposed and Chicago's city council approved a water rate increase of 25 percent in 2012 and 15 percent in 2013, 2014, and 2015

with the increased revenues devoted to water and sewer infrastructure repair. Although the increase sounds huge, Chicago's water rates will still be well below most other major U.S. cities.

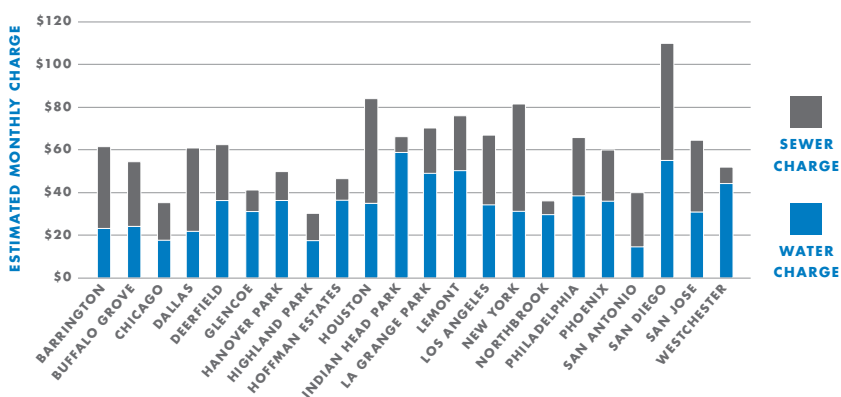
Moreover, unlike many other fee or tax increases, just because rates increase, doesn't mean the water bill has to increase. In fact, many people report that when they've had a water meter installed in their home and can monitor their use, their bills have gone down. Problem: more than 300,000 single-family and two-flat homes in Chicago still have no water meters. Owners pay a flat fee no matter how much water they use—or don't use.

Other recommendations from the transition team include launching a city-wide recycling program and increasing access to public space. Mayor Emanuel's administration has already made progress. Curbside recycling will be made available to all Chicago residents by 2013. \$46 million has been dedicated to the first phase of the 2.7-mile Bloomingdale Trail that will add much-needed park space to an underserved area of the city.

Water & Sewer Rates

Chicago pumps and treats nearly a billion gallons a day of fresh water from Lake Michigan at two large filtration plants and sells approximately a third of that to other municipalities in Cook County. Residential, commercial, and industrial use in Chicago consumes the remaining 600 million gallons a day. When Chicago approved an increase in its water rates, Chicago residents and neighboring suburbs yelped. Yet as the graph below shows, even with the new rates, Chicago residents pay less for their water and sewer combined than people in any other major city in the country. Residents in most suburbs pay less as well.

ESTIMATED MONTHLY WATER & SEWER CHARGES (7,500 GALLONS)



What can people do to reduce their water consumption and cut costs?

- Replace older toilets with dual-flush or low-flow models.
- Run your dishwasher or washing machine only when they are full.
- Take shorter showers. (I have a 5-minute hourglass timer from the Shedd Aquarium that sticks with a suction cup to my bathroom wall.)
- As the water warms up in your shower, capture it in a bucket and use to water plants or flush the toilet.
- Get a rain barrel (or two) delivered free to your home for only \$58 each from mwr.org.
- Find and seal leaks in toilets and sinks.
- Turn off the water as you brush your teeth.

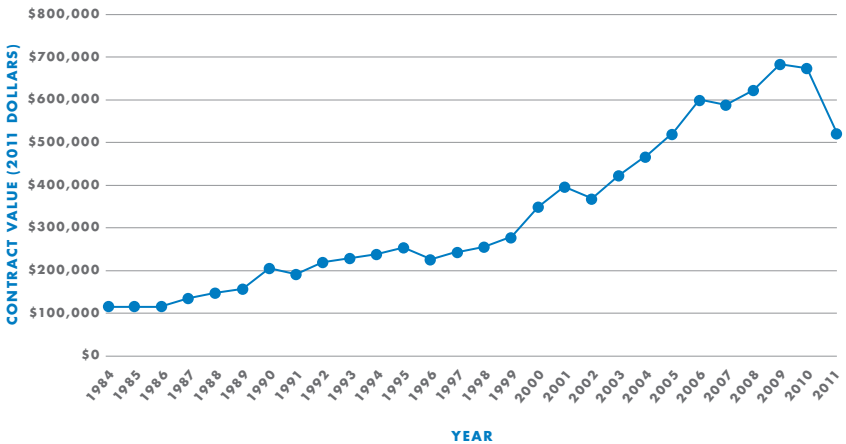
Charles Fishman in his captivating book called *The Big Thirst* contends that we have spent the last 100 years living "...in a kind of aquatic paradise: our water has been abundant, safe, and cheap." But those days are coming to an end, he says. "The three things that we have taken to be the natural state of our water supply—abundant, cheap, and safe—will not be present together in the decades ahead."

Opening Up Contracts to Competition

Sometimes change is barely faster than water dripping on a stone but the results, over time, can be huge.

In 2011, four years after I first sought to open up the District's federal lobbying contract to competition, we succeeded in issuing a Request for Proposals that drew substantial interest. For more than 25 years, Carmen Group, Inc. held this contract, which the Board renewed annually with increases of five to nine percent. By 2010 their fee had reached \$657,000 and I felt we were paying too much. How could we assure Cook County taxpayers that they were getting their money's worth if there was no competition for the contract? (The agency reduced their fee to \$520,000 in 2011, but also cut their hours by 20 percent. Hmm.)

CARMEN GROUP CONTRACT VALUES (1984–2011)



▶ To learn more about the Carmen Group, Inc., visit carmengroup.com

Over the years Carmen Group has helped to secure millions of dollars in federal support for the Tunnel and Reservoir Plan and I and my colleagues are thankful for that. But sound practice in government procurement suggests that professional services contracts should be opened up to a competitive process every three to five years.

▶ To review the American Bar Association's model procurement code, visit debrashore.org/ABA_procurement_code

By 2011 we had the votes to do this and—lo and behold—the 2012 lobbying contract is \$240,000 less than the District paid in 2010. Competition is healthy! Though the Carmen Group was awarded the contract again due to the depth of their experience, the process encouraged them to sharpen their pencil. Score a win for the taxpayers!

New Leadership

Often I am asked, "What, exactly, does the Board of Commissioners do at the Metropolitan Water Reclamation District?" My answer: the Board approves the budget and votes on contracts, sets policy, and appoints the Executive Director and Treasurer. In 2011, we did all of these.



When Executive Director Dick Lanyon retired at the close of 2010 after a 40+ year career at the District, the Board conducted a national search for his successor. We interviewed 11 candidates and, for the first time in 50 years, selected someone from outside the ranks of District employees to serve as the next leader for the agency. In my view, our appointment of David St. Pierre may prove to be one of the most significant and positive actions I've taken since joining the Board.

Working in wastewater treatment his entire career, Mr. St. Pierre came to the District in late June from Atlanta, where he served as Deputy Commissioner of drinking and wastewater utility operations since 2007. Prior to that, he spent 15 years at the wastewater utility in St. Louis. In Atlanta, Mr. St. Pierre reduced the annual operating budget by 40 percent in four years. Trained as an electrical engineer and a former union steward, Mr. St. Pierre has brought a fresh perspective and fresh ideas to the District. Early reports from many municipal, non-profit, and other partners are exceedingly favorable.

I have been very impressed with Mr. St. Pierre's leadership during his short tenure at the District. He has the technical understanding that is essential to managing a complex engineering organization like the MWRD and he is an excellent communicator. Welcome, Dave, we're glad you're here!

2011 Asian Carp Update

Asian Carp have essentially destroyed the native fisheries in large sections of the Illinois and Mississippi Rivers (by eating all the plankton and thus outcompeting other fish for their food source). So it's no wonder that many people fear these highly invasive fish could also destroy the sport and commercial fisheries in the Great Lakes if they are able to reach them through several water pathways, principally the Sanitary & Ship Canal.

▶ To learn more about the Sanitary & Ship Canal, visit debrashore.org/ship_canal

Legal

In 2010, the states of Wisconsin, Minnesota, Ohio, Michigan, and Pennsylvania filed a lawsuit seeking an emergency injunction to force Chicago to close its locks to "prevent" Asian Carp from reaching the Great Lakes Watershed. That motion was denied in December 2010. The states appealed and, while the appellate court also did not rule in their favor, the judges noted, "If the invasion comes to pass, there is little doubt that the harm to the plaintiff states would be irreparable." The judges concluded, however, that the five states did not adequately demonstrate that the Carp threat was imminent and the risk of flooding if the locks were closed was too great. In August 2011, the states petitioned the U.S. Supreme Court to review the appellate court's decision, but the justices declined to hear the case.

Electric Barriers

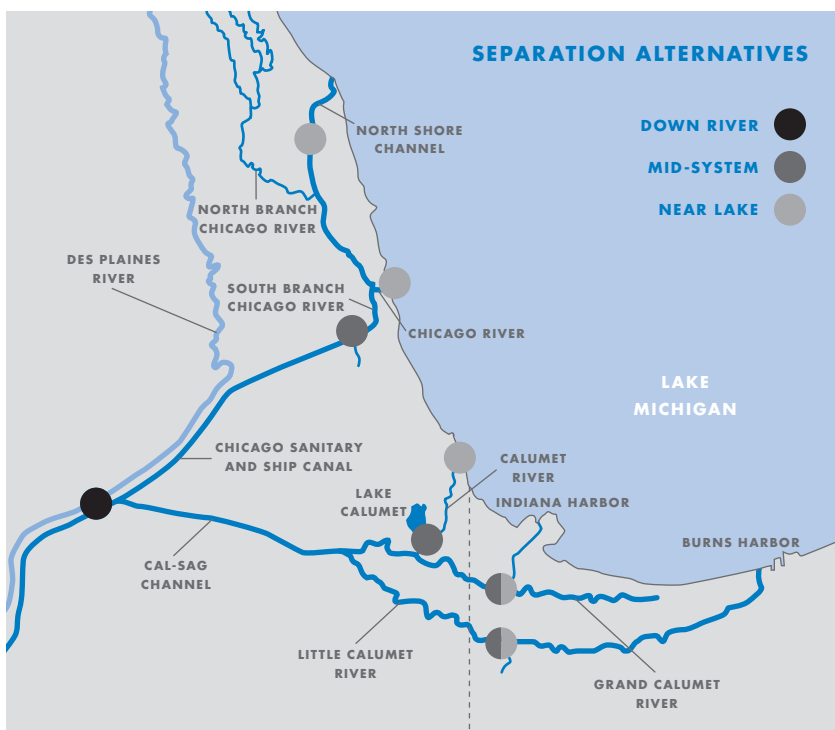
On April 7, 2011 the U.S. Army Corps of Engineers placed electric fish Barrier IIB into operation joining Barrier IIA and Barrier I as the primary mechanism preventing Asian Carp from invading the Great Lakes. These barriers generate an electric field in the 160-foot wide Sanitary & Ship Canal near Romeoville. The electric field is designed to be so unpleasant to fish that they will reverse course and swim in the other direction, thus preventing carp from making their way up the Canal towards Lake Michigan. In November 2011, the Army Corps increased the voltage of Barrier II to better protect against the movement of juvenile carp. There are still no signs of Asian Carp immediately downstream from the barriers.

Separation Study

In January 2012 the Great Lakes Commission and the Great Lakes & St. Lawrence Cities Initiative completed a study to identify alternatives for physically separating the Great Lakes and Mississippi River watersheds. The report, *Restoring the Natural Divide*, proposed three different scenarios (see Figure) and considered the impacts on stormwater/flooding, water quality, and transportation. All three scenarios have barrier completion dates of 2029, which corresponds to the completion of the TARP reservoirs. The costs—the barriers themselves and major upgrades to the transportation, water treatment, and stormwater management infrastructure—vary from a low of \$3.26 billion to a high of \$9.54 billion. Although the report did not endorse a separation alternative, the authors considered a mid-system scenario to be the most feasible as it had the lowest estimated cost—\$3.26 billion to \$4.27 billion. The report is the first substantial effort to identify a process to separate the watersheds.

▶ To learn more about the Great Lakes Commission and Great Lakes & St. Lawrence Cities Initiative, visit glc.org and glslcities.org

▶ Read *Restoring the Natural Divide* at glc.org/caws

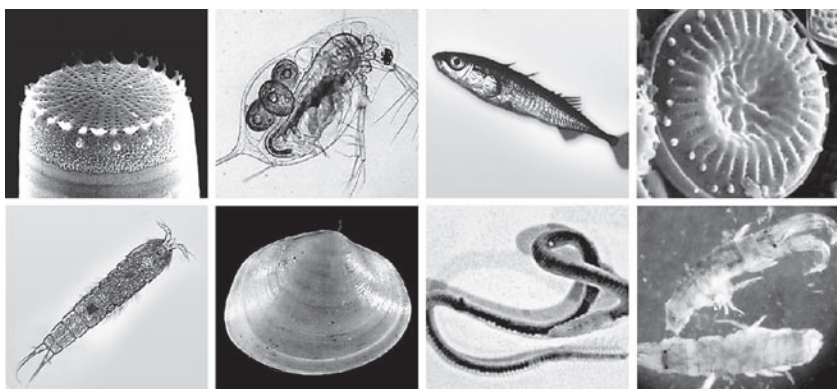


COURTESY OF THE GREAT LAKES COMMISSION

2011 Asian Carp Update

Carp Smuggling

New worries have arisen that live Asian Carp might be smuggled past state and international borders. Three times in early 2011, Canadian officials stopped trucks transporting thousands of pounds of live Asian Carp bound for Toronto fish markets. In March 2011, the U.S. Fish & Wildlife Service promulgated rules under the Lacey Act that forbid importing or transporting Bighead Carp across state lines. Illegal smuggling underlines a common concern about separating the Mississippi and Great Lakes Watersheds: human carelessness may ultimately undermine the billions spent on eliminating aquatic pathways.



8 OF THE 39 IDENTIFIED AQUATIC NUISANCE SPECIES OF CONCERN
COURTESY OF GLMRIS.ANL.GOV

More Than One Way...

Asian Carp have made national headlines, but they aren't the only aquatic nuisance species (ANS) that threatens to invade the Great Lakes from the Mississippi River system and vice versa. There are 39 "ANS of Concern," from red macro-algae to threespine stickleback, which the USACE has identified as having a high potential threat for damaging interbasin transfer. The work is part of their ongoing Great Lakes and Mississippi River Interbasin Study (GLMRIS). In December 2011, the USACE identified more than 90 potential controls to prevent organisms from moving between the watersheds—electron beam irradiation (intended for crustaceans and protozoa), underwater strobe lights (meant to deter fish) or lethal temperature controls such as freezing, carbon dioxide pellet blasting and desiccation (drying). The USACE will develop viable alternatives for the next stages of the GLMRIS study.

▶ To learn more about the Great Lakes and Mississippi River Interbasin Study, visit glmrис.anl.gov

2011 Facts & Figures

6.86

INCHES OF RAIN THAT FELL ON JULY 23, 2011
SETTING A CALENDAR DAY RECORD

80

ACRES OF RECONSTRUCTED
PRAIRIE MAINTAINED ON
MWRD PROPERTY



62

NUMBER OF DAYS
I TOOK PUBLIC
TRANSIT TO WORK

10,000

MILES OF LOCAL SEWERS
THAT FEED INTO THE MWRD
INTERCEPTING SEWER SYSTEM

2

THE YEAR'S
RANK IN TERMS
OF TOTAL
PRECIPITATION
IN CHICAGO

201,767

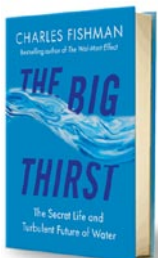
DRY TONS OF BIOSOLIDS
PRODUCED BY THE MWRD

31

SPEAKING
ENGAGEMENTS

3

NUMBER OF HYDROLOGIC
SEPARATION ALTERNATIVES
PROPOSED BY THE GREAT
LAKES COMMISSION AND
THE GREAT LAKES AND ST.
LAWRENCE CITIES INITIATIVE



*The Big Thirst: The Secret Life
and Turbulent Future of Water*
by Charles Fishman

BEST BOOK READ THIS YEAR

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SIMON & SCHUSTER

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2011 Annual Report

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