

STREAMER

· A PUBLICATION OF THE CHARLES RIVER WATERSHED ASSOCIATION ·

GOT RAIN? YOU'LL NEED A PERMIT!

BY KATHY BASKIN

The next time it rains, take a look outside. You will see oil and grease, metals, sediment, salt, and animal waste being flushed from roads and parking lots. You may see sediments being scoured from construction sites. There will be pesticides, herbicides, and fertilizers being washed from golf courses, playing fields, and gardens. Every time it rains, this pollutant-laden runoff is carried over land or through a pipe and dumped into the Charles River.

Another stormwater problem, occurring in both wet and dry weather, is that sanitary sewers are sometimes illegally (and often accidentally) connected to the stormdrain system, discharging fecal material into neighboring rivers and streams. So, if you are in an area served by a wastewater treatment plant, don't be certain that the flush of a toilet sends sanitary waste to the treatment plant. Uncontrolled stormwater discharges can cause fish kills, destroy spawning and wildlife habitats, degrade aesthetics, and contaminate recreational waterways, threatening public health.

Water quality in the Charles River watershed has improved dramatically since the passage of the Clean Water Act in 1972. Millions of gallons of industrial waste and untreated wastewater discharging to the river each day have been eliminated and hundreds of millions of dollars have been spent, and yet water quality is still considered "impaired" over 98% of the river's length, in part because of the river's most difficult pollution problem - stormwater runoff.

CRWA has actively addressed stormwater issues in the watershed for several years. We are nearing completion of a five-year

stormwater demonstration project on the Boston University campus, which involved stormwater monitoring and evaluation of stormwater treatment technologies. We completed a technical and financial evaluation of DEP's stormwater management policy. CRWA spreads the word about polluted runoff to the Charles through its stormdrain stenciling program. Our monthly volunteer monitoring program has led to the discovery and removal of numerous illicit connections of sanitary waste discharging to the river through stormdrains.



CRWA STORMDRAIN STENCILING ATTRACTS MEMBERS OF ALL AGES.

It is time for municipalities and construction managers to tackle stormwater pollution; the U.S. Environmental Protection Agency (EPA) will be issuing them stormwater discharge permits through its National Pollutant Discharge Elimination System (NPDES) program. During the 1990s, communities with populations of more than 100,000 and construction sites disturbing 5 acres or more were issued permits under Phase I of the program. Only two municipalities in Massachusetts received stormwater discharge permits - Boston and Worcester.

Under Phase II of the program, stormwater discharge permits will be issued to "urban" communities, generally communities with populations between 10,000 and 99,000, including nearly every community in the Charles River watershed. Permits will also be needed for construction sites disturbing one or more acres. EPA has prepared a generic permit to be issued to all "urban" municipalities. Municipalities have a deadline of March 10, 2003 to submit a Notice of Intent

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2002 ANNUAL REPORT

CRWA's 2002 expanded Annual Report, inside this issue of Streamer, includes:

- a letter from CRWA President Kelly McClintock
- the state of the river, by Executive Director Bob Zimmerman
- updates on the work being done to preserve parklands, restore river habitats and curb pollution
- CRWA's yearly financial report
- a list of this year's generous donors

**2002 Annual Report . . .
inside**

CRWA CELEBRATES 37 YEARS

BY LOUISE TAYLOR

During the reception, attendees of the 37th Annual Meeting of Charles River Watershed Association, held at the Newton Marriott on November 12th, saw first-hand what Executive Director Bob Zimmerman has been touting for months – SmartStorm™, the Rainwater Recovery System. The display featured one of the 420-gallon rainwater recovery tanks, and a second one cut down to show how little of the tanks are above ground once installed. Staff craftsman Ken Dews built a mock roof, complete with gutter and downspout, so people could better visualize the flow of rain from the roof into the gutter, down the spout and into the gigantic tanks.

The display included sections of the drywell, the receptacle that makes SmartStorm™ even more valuable because it recharges the overflow of water back into the ground, ultimately replenishing the aquifers. A pump and hose attached to one tank demonstrated how easily SmartStorm™ water can be used for gardening and washing cars. As attendees gathered around the display, they couldn't help but catch the enthusiasm for this terrific environmental innovation. "It's one thing to read about SmartStorm™ in *Streamer*, and quite another to view it in reality. People had no



(CLOCKWISE) DURAND, VORHEES, EXECUTIVE DIRECTOR BOB ZIMMERMAN, MATTISON, DOWNEY AND GROSS.

"It's one thing to read about SmartStorm™ in Streamer, and quite another to view it in reality. People had no idea how effective this system really is."

idea how effective this system really is," remarked Bob Zimmerman. Another display, produced by Environmental Scientist John Carney, gave details of our Total Maximum Daily Load project complete with diagrams, photographs and step-by-step procedures.

During the business portion of the meeting Board President Kelly McClintock delivered an invigorating message, complete with a round of thanks to all members who gave so generously throughout the year. Project Engineer Kathy Baskin claimed "the most fun job of the evening," as she thanked CRWA's volunteers and interns to whom we are so grateful. Bob Zimmerman spoke with verve about CRWA's accomplishments, and recognized the staff's participation.

Awards were given to five outstanding members. CRWA's highest honor, the Anne M. Blackburn Award, was presented by Bob Zimmerman to Betsy Shure Gross, Special Assistant for Community Preservation under Bob Durand at EOE, for her community coalition building and passionate advocacy on behalf of people and their historic resources.

LONG-TIME ACTIVISTS HUGH & ARLENE MATTISON WIN CITIZEN ACTIVIST AWARD

Kate Bowditch, CRWA senior scientist and project manager, had the honor of presenting her fellow Brookline activist and friend Arlene Mattison with the Citizen Activist Award. Here is what Arlene had to say about the honor:

"I feel unworthy, but quite honored. On behalf of Hugh and myself I would like to thank CRWA for your work and also for your involvement with the Muddy River Restoration Project. You may not need to hear it, but I would like to take two minutes to tell you how important your work is to Bostonians and to me personally. I am a native Bostonian. I grew up in the West End, claimed once to be a slum, but it never was, and the Charles River was at the end of my street. It was my backyard. So many of my memories involve the Charles River. My mother told me she had swum in the River; when I was young that was like a fable. My father brought me to Harry Ellis Dickson's children's concerts at the Shell. My sisters gardened there. The river was my exposure to nature. As an adolescent I spent most of my free time there. I met my husband and fell in love on the Charles River. My children sailed there. I shared wonderful evenings with my family and the Boston Pops Esplanade Orchestra. To me the Charles River is a major part of what is best of Boston. Everything you do to protect it and improve it is a way to show your love for Boston. This is a very special award for me because it is from your organization. Keep up the good work."

"To me, the Charles River is a major part of what is best of Boston."

Mark Voorhees received CRWA's 2005 Award from CRWA's Project Manager Kathy Baskin. Kathy praised Mark for his work to help the Charles become swimmable and fishable by Earth Day 2005. An engineer with the U.S. Environmental Protection

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NEWS AND NOTEWORTHY

MEMORIAL DRIVE RESTORATION PROJECT GOES PUBLIC

PARKLANDS The Memorial Drive Parkway Rehabilitation Project, a demonstration project of the Historic Parkways Initiative, was publicly announced on October 22, 2002 at the MIT Boat House. Robert Durand, Secretary of the Executive Office of Environmental Affairs (EOEA), David Balfour, Jr., Commissioner of the Massachusetts District Commission, and members of the Historic Parkways Initiative, including co-chairs Betsy Shure Gross and John DeVillars, were present to celebrate the launch of this project, which will renovate Memorial Drive from Longfellow Bridge to Magazine Beach.

The project will be informed by the MDC's Charles River Basin Master Plan, and calls for the removal of a travel lane on Memorial Drive's river side across from MIT; the widening of the riverside sidewalk near

Longfellow Bridge; and the reconstruction of the Massachusetts Avenue/Memorial Drive intersection. The overall goals of the project include integrating Memorial Drive's value as a historic resource; a scenic, cultural, and recreational treasure; and a transportation corridor.

The goals of the Initiative, a coalition of the EOEA, the Department of Environmental Management, the Metropolitan District Commission and other public and private organizations, include protecting, preserving, and enhancing historic parkways throughout Massachusetts. The Initiative's slogan, "A Parkway is Not a Road. It's a Park with a Road In It", highlights the goals of the interagency and public-private partnership not only to protect historic parkways, but to encourage increased public use.

- contributed by Denise Trapani Hall

CRWA WEBSITE WINS EDDY AWARD

WWW.NEWS CRWA was awarded First Prize for the 2002 Eddy Award, a new award created by American Rivers, a leader in the nation's river movement. American Rivers launched the new "Eddy" award because "the Internet is now a critical tool in the fight to save America's rivers."



CRWA was awarded First Prize for what judges said were "great, innovative solutions and projects" featured on the site. Over 50 nominations were received. They were rated by a panel of judges with experience in conservation and the Internet, for their content, advocacy/action opportunities, navigation and functionality, and design.

DEVELOPMENT DIRECTOR ADDED TO STAFF

STAFF UPDATES CRWA welcomes new Development Director Denise Trapani Hall to our staff. Denise comes to us from the The Children's Museum in Boston, with eighteen years of development experience. She looks forward to strengthening our members' ties to CRWA, and implementing planned giving, major donor and corporate membership programs. Ariel Dekovic also joined the staff as the Publications and Office Manager. Ariel recently graduated from Vassar College with degrees in Environmental Studies and Political Science.

CRWA MOVING OFFICE HEADQUARTERS TO WALTHAM

CRWA@WORK CRWA will be saying a semi-good-bye to its long-time Newton home on Commonwealth Avenue. We will be moving our headquarters to 48

CRWA new address:
48 Woerd Ave.
Waltham, MA
02453

Woerd Street in near-by Waltham. The beautiful new space boasts river views and much needed extra square footage for our newly-expanded staff. The Commonwealth Avenue location will be retained for lab facilities and for educational purposes. We invite you to stop by our new space in the Spring. Currently, our expected

move date is in February. The building will be shared with Imagitas, a "targeted" marketing company. Look for a member mailing with our new contact information after the first of the year.



MEMBER ALERT

Watch your mailbox for information on exciting Spring events for CRWA members.

FISH MONITORING: A

BY DUDLEY BONSAI

When I heard I had been assigned to go fish shocking on the Charles River, I imagined a floating mass grave of fish gone belly up, terminated indiscriminately with one brutal electric zap. I wanted to learn more about the fish that swam in the Charles, to witness their presence firsthand...but was the fish shocking necessary?

I was soon told that my assumption was incorrect – that electroshocking isn't meant to kill fish, but rather to render them temporarily unconscious so that they can be captured for counting and measuring. Of all the collection methods available to field scientists for obtaining a representative catch, it's considered to be one of the least disruptive to fish life. With my worst imaginings soon put to rest, I looked forward to the field-work.

On a clear and sunny summer morning at CRWA, I met with the project leader, Todd Richards, a fisheries biologist for the Massachusetts Division of Fisheries and Wildlife (DFW). Others present included Richard Hartley and Bob Thomasian, also of DFW, and Ralph Abele and Dave Pinkham of the U.S. Environmental Protection Agency. We drove to the site, located in Wellesley downstream of the Route 16 Bridge.

At the site, we unloaded the equipment, largely obtained with bond funding from the Massachusetts Watershed Initiative. It included a 10-foot barge with a gas generator, electric probes, nets, and a large plastic container. We outfitted ourselves with chest waders and donned rubber gloves to insulate ourselves from the electric

current we'd create. Polarized glasses were worn to make seeing below the water surface easier.

With Todd steering the barge from behind and five of us in front, we moved upstream. Proceeding for 400 yards, we usually stayed close to the banks and in shallower waters. Richard, Ralph, and Bob were positioned front and center, holding probes in one hand and a small net in the other. Flanking the trio on the far ends were Dave and myself holding large nets. With probes in the water being moved side to side to help

make fish more aware of the charge's presence, the fish, detecting the charge, would be drawn to it, yet once they came close they would lose consciousness and belly

up to the surface. The fish quickly came to as we netted and threw them into the water-filled plastic container set inside the barge.

After our catch, we brought the barge to the river-bank. The fish were pulled out of the container one by one and placed on a measuring board. The restlessness of the eels that were caught made them more challenging

“Having waded in and boated on the river many times, I experienced what I could only take for granted up until that day: that there was much life and activity below the water surface.”



TODD RICHARDS MOVES THE BARGE DOWNSTREAM IN PREPARATION FOR THE CATCH.



THE BARGE SITS TIGHT AS THE FISH SHOCKING EQUIPMENT IS UNLOADED.



BOB THOMASIAN HOLDS A COMMON CARP, THE BIGGEST FISH OF THE DAY.



SCIENTIST'S (SHOCKING!) TALE

to measure than other fish. The person holding the board had to shake it back and forth, forcing the writhing eels to straighten out if but only for a second so that their true length was revealed. Once length was recorded, each fish was tossed back into the river.

Unfortunately, a few fish did not survive the shocking. Thrown back after being measured, they lay still in the river awaiting an easy grab by such predators as raccoons and bigger fish. Otherwise, most fish swam away to resume normal life.

I was astonished by the large number of eels; with 56 captured, they were only second in number to 83 bluegill fish. In addition to those two species, 45 red-breasted sunfish were netted. Species found in smaller numbers included pumpkinseed, white catfish, black crappie, largemouth bass, white sucker, chain pickerel, yellow bullhead, and, the biggest catch of the day, a common carp that measured 24 inches.

<i>THE FISH NUMBERS *</i>		
Species	Number Sampled	Size Range (in inches)
Bluegill	87	3 - 8
American eel	56	5 - 23
Redbreast Sunfish	45	2 - 6
Pumpkinseed	6	5 - 6
White catfish	4	3 - 9
Black crappie	3	6 - 11
Largemouth bass	2	2 - 14
White sucker	1	11
Chain pickerel	1	10
Yellow bullhead	1	6
Common carp	1	24

**preliminary numbers from the Department of Fish and Wildlife*

Having waded in and boated on the river many times, I experienced what I could only take for granted up until that day: that there was much life and activity below the water surface. CRWA understands the inherent fragility of fish habitat in a developed setting – that dams obstruct passage of fish in the river and create conditions more similar to that of a lake or pond than a river, while sediment and other pollutants degrade the resources within

their reach. With more surveys scheduled to resume in 2003, the final results are not in, but the field work so far both rewards us with a glimpse of river life and warns us of the threats it faces. The work leads us at CRWA and our associates at DFW and EPA

further toward our goal of restoring the fisheries of the Charles River, and it fuels our efforts to achieve a healthy and vibrant ecosystem.

“The biggest catch of the day: a common carp that measured twenty-four inches.”

NEWS FLASH:
 With a grant from Community Crossroads Foundation, CRWA will be training volunteers help fish to migrate upstream for spawning. Please call CRWA at 617-965-5975 to join us!

**AMEIURUS CATUS:
 THE WHITE CATFISH, ALSO KNOWN AS A FORK-TAILED CAT.**



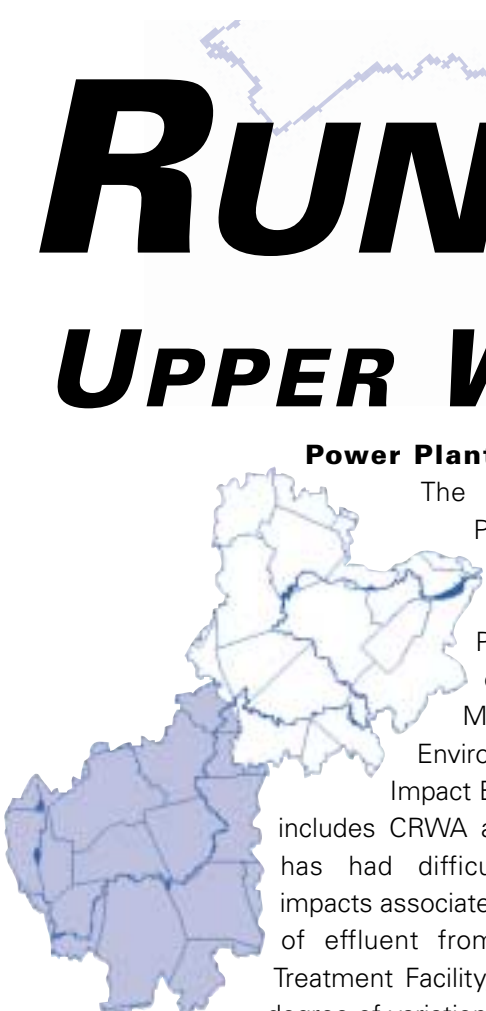
RUN OF THE RIVER

CRWA'S REPORT OF WHAT'S HAPPENING ON (AND AROUND) THE CHARLES

UPPER WATERSHED

·From Echo Lake to South Natick Dam·
River mile 0 to mile 38

Power Plant Impacts



The **MILFORD** Power Limited Partnership (MPLP) requests termination of portions of its Charles River Monitoring Program, which has been overseen by the Massachusetts Department of Environmental Protection and the Impact Evaluation Committee, which includes CRWA as a representative. MPLP has had difficulty detecting ecosystem impacts associated with the power plant's use of effluent from the Milford Wastewater Treatment Facility, attributing this to the high degree of variation in the data and the absence of a measure that directly responds to changes in flow. CRWA has offered another explanation that greater water withdrawal amounts from

the Milford Water Company might overshadow MPLP withdrawal impacts. While MPLP will continue monitoring streamflow, river levels, and meteorology, CRWA suggests that they also continue monitoring groundwater elevations, make the monitoring data more accessible to the public, and conduct a monitoring survey at the end of the five-year permit to assess any long-term effects of the withdrawals on the river.

Retail Development

A 120,000 square-foot retail development is being proposed off Route 109 in the Town of **MEDWAY**. CRWA is concerned that the development will generate a large amount of impervious surface including over 500,000 square feet of parking space. CRWA urges the proponent to further reduce the amount of impervi-

ous area and implement a drainage system operation and maintenance plan for the life of the project to mitigate the development's impact on wetlands and water resources.


TMDL Monitoring

As part of the Upper Charles River Total Maximum Daily Load (TMDL) project, CRWA staff collected river and tributary samples during and after a rain event in October, moving one step closer in quantifying pollutant loads impacting the river from Hopkinton to Dover and modeling and predicting the pollutant loads at any given time. CRWA has already monitored water quality of the river during periods of no rain and next year will conduct sampling during additional dry weather and wet weather periods.

MIDDLE WATERSHED

·From South Natick Dam to Watertown Dam·
River mile 38 to mile 69

Cordingly Fish Ladder En Route to Improvements

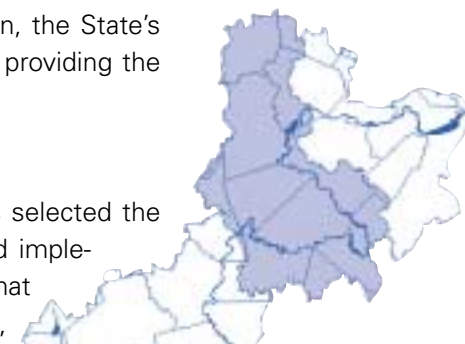


In November, the Metropolitan District Commission (MDC), the Cutler Park to Commonwealth Avenue Stream Team, and CRWA cleaned out debris and removed baffles that had deteriorated from years of wear from the Cordingly Dam fish ladder spillway in **WELLESLEY**.

such as alewife, blueback herring and shad. Sara Cohen, the State's Charles River Watershed Team Leader, is credited with providing the project with much needed support and momentum.

City-Wide Environmental Management

The US Environmental Protection Agency (EPA) has selected the City of **WALTHAM** to participate in the development and implementation of an environmental management program that will help the city establish its environmental priorities,



DEEP CLEANING AT THE CORDINGLY DAM FISH LADDER

With the debris and old baffles removed from the spillway, MDC will now be able to install a trash rack and new baffles constructed by students at Tri-County Vocational School. The fish ladder will assist the migration of fish species,

improve operations for better environmental performance, and therefore meet its environmental goals for cleaner air, land, and water. Researchers from Brandeis University have been hired by EPA to assist the city with developing the management program. CRWA applauds this initiative, which will help prevent and mitigate pollution to the river.



LOWER WATERSHED

From Watertown Dam to New Charles River Dam -
River mile 69 to mile 78.4

Mount Auburn Cemetery Applies for New Well Withdrawal

Mount Auburn Cemetery in **CAMBRIDGE** has applied for a well withdrawal increase from 100,000 gallons per day to up to 250,000 gallons per day for irrigation purposes. CRWA, while recognizing the value of the cemetery as a public space, an arboretum, and a historical landmark, has submitted comments to the state requesting some provisions to limit water use during the critical summertime periods and to offset future increased withdrawals. Suggested provisions include employing water conservation landscaping practices, developing a drought management plan, and employing recharge practices such as retention ponds and drywells to offset increasing water consumption.

Memorial Drive Parkway Restoration

The first phase of the Memorial Drive Demonstration Project in **CAMBRIDGE**, an effort to "preserve and adapt a 19th century parkway for the active demands of future use," (*Historic Parkways of Massachusetts*), officially began in October. The first phase of the project will remove the superfluous east-bound travel lane between the Longfellow Bridge and a point near Fowler Street, returning it to parkland. This phase also includes significant stormwater infrastructure improvements, better

pathway links, modifications to traffic lights and pedestrian crossings, and preservation treatment to the Massachusetts Avenue underpass. Phase II will expand the stormwater improvements, restore historic roadway lighting, stabilize eroded bank areas, and make significant landscape and pathway improvements. In addition, CRWA is working with the project steering committee to develop a management model that will provide clear responsibility and accountability for management and maintenance.

Restoring a Portion of the Emerald Necklace Park System

Dredging of the Muddy River at Charlesgate in **BOSTON**, the first piece of the Muddy River Restoration Project, has just begun. Charlesgate links the Back Bay Fens of the Muddy River to the Charles River Reservation. Dredging at Charlesgate is done "dry," meaning that the majority of flow is pumped around the area being dredged, and dredging equipment enters the riverbed itself. Dredging must be completed before March 1.

The rest of the restoration project, currently estimated to cost over \$92 million, will address flooding problems, make improvements to habitat and water quality, stabilize eroding riverbanks, remove invasive vegetation, and replant appropriate wetland and upland species in accordance with the original park design. The Secretary of the Executive Office of Environmental Affairs determined that the Charlesgate portion of the project, designed to eliminate the significant 'bottleneck' that contributes to flooding in the

Fens area, could go ahead earlier than the rest of the project, given a number of conditions. These included not only efforts to minimize any possible impacts to the Muddy and Charles Rivers due to dredging, and commitments to replant and maintain the parklands around the Charlesgate area, but also the development of a new park-wide management and maintenance plan, and the formation of an independent project oversight committee. Kate Bowditch, CRWA project manager, chairs the oversight committee.



DREDGING THE MUDDY RIVER

Studying Stormwater Control Measures

CRWA has just completed the monitoring phase of the Boston University study to assess the effectiveness of stormwater control structures in removing pollutants. During the final storm event in September, runoff samples were collected before and after control structures located at three parking lots on the University campus to determine the pollutant removal rates of each structure. The structures include water quality chambers, a detention basin, an oil/water separator, and a small grassy area surrounding a catch basin. A complete analysis of results over the four storm events and a final report will be completed by Spring 2003.

WATER ALLIES:

CRWA'S MARGARET VAN DEUSEN TALKS WITH *WATER FOLLIES* AUTHOR ROBERT GLENNON

Robert Glennon is a renowned expert on water law. In his newest book, ***WATER FOLLIES: Groundwater Pumping and the Fate of America's Fresh Waters*** (Island Press, 2002), Glennon, the Morris K. Udall Professor of Law and Public Policy at the University of Arizona, exposes the little known truth about the irreversible damage caused by groundwater pumping on our wetlands, rivers, lakes, and streams. *Water Follies* tells the story of groundwater pumping across the country, highlighting the absurd schemes and reasoning behind many groundwater projects. The book focuses on the conscious decisions, legal fictions, and political subterfuges that have led to the misuse of water and the current state of affairs. Acknowledging that we first have to recognize the problem before we can begin to solve it, Glennon offers viable solutions to the groundwater pumping crisis. Margaret Van Deusen, CRWA's Deputy Director, had an opportunity to talk with Glennon when he was in Boston recently.

"Groundwater pumping interrupts the [hydrologic] cycle. It steals water from rivers and lakes... it is a hidden tragedy."

MVD: What should the public know about how groundwater pumping affects rivers and streams?

RG: We once thought that groundwater was as plentiful as the air. The idea was that there were these vast underground lakes, but we now know from the science of hydrology that groundwater is part of the hydrologic cycle. Water

moves from the oceans into the atmosphere by evaporation. The moisture-laden air drifts over land. It comes down [as snow or rain] and when snow melts or the rain goes downhill, water does one of two things: it either runs off into rivers or creeks, or more importantly, it infiltrates the ground. Then groundwater moves sub-surface down-gradient toward water bodies: rivers, lakes, streams, creeks, wetlands, and estuaries. Groundwater pumping interrupts that cycle. It steals water from rivers and lakes, but because it does so in a way that we can't see, it is a hidden tragedy.

MVD: What are the impacts of this interception of water?

RG: In the Ipswich River it ended up drying up the river for the last eight years. But the Ipswich River is not alone – this phenomenon has occurred throughout the US. In Arizona, where I now live, we have lost ninety percent of our low desert streams and creeks due to groundwater pumping. In Florida, scores of lakes in the Tampa Bay Area have dried up due to groundwater pumping. Wetlands and

springs around the country have been affected – it is really a national environmental catastrophe.

MVD: We read a lot about water wars out West and in other parts of the country. Do you think there could ever be water wars here or in New England?

RG: It's not just a Western phenome-

non. There is a water war going on between Georgia and Florida over the flows in what's called the Apalachicola-Chattahoochee-Flint River system. The fight pits suburban sprawl in Atlanta, with vastly increased groundwater irrigation by Georgia farmers, against the tiny little oyster fishing village of Apalachicola in Florida. So that's a sign that the water wars are not simply a Western or an arid lands phenomenon.

MVD: You devote a chapter in your book to the Ipswich River. Why?

RG: Massachusetts is my home state, and when I heard that the Ipswich River [was going] dry and that a major culprit was groundwater pumping, I was shocked and I'm in the field. Beyond that, it's a great story – my book is actually full of stories — because of the heroism of Kerry Mackin [Executive Director of the Ipswich River Watershed Association] and others involved in the struggle to protect the Ipswich. Also, from a national perspective, there are two interesting parts of the story: first, the effort to have a watershed



**AUTHOR ROBERT
GLENNON**

initiative to create a comprehensive management plan is something that is going on around the country, so what's happening in the Ipswich resonates elsewhere; second, because the rallying cry now of "keep water local" is a terribly important message for the rest of the country to understand. The problem is that as you take a municipal wastewater treatment plant, and treat the wastewater and then dump it into the ocean, that water is gone from the watershed. It is 100% consumptive. So every time a drop of water goes down the sink or five or six gallons down the toilet, that water is gone from the watershed.

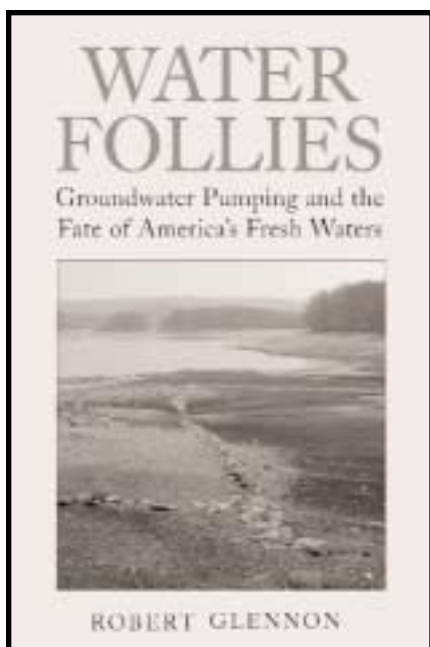


MVD: And that is also true of stormwater?

RG: If the stormwater drains into a sewer system, that is true. One of the problems with stormwater is that as growth has occurred, with homes, buildings, roads, parking lots, schools, all of those structures are impermeable surfaces. Linking it back up to the hydrologic cycle, if you have a road or a parking lot, when it rains the rain cannot percolate into the ground to recharge the aquifer and replenish the supply. Instead, it runs off, causes erosion and leaves the watershed quickly without being absorbed into the ground.

MVD: What lessons can we learn from the Ipswich?

RG: The first lesson is that we, as a country, must understand the immensity of groundwater pumping and its impact on the environment. After that, we can take a number of lessons. First, we need water conservation standards. There is a role for government to play in intelligent water management plans and conservation is part of that. We



need to take the lesson of keeping water local seriously and reuse this precious resource. We're actually doing that quite a bit in Arizona. Arizona is progressive when it comes to water management. We have some very interesting recovery-recharge-renewal projects that suggest where we are going in the future. We simply can't use water once and discard it.

MVD: It seems that our water laws are failing to protect the water resources themselves. Why is this?

RG: In most sections of the country, one set of rules governs surface water and a completely different set of rules governs

groundwater. The historic reason for that was that the law developed in the 19th century when the science of hydrology was in its infancy. As we have come to understand the hydrologic cycle and that groundwater is connected to surface water, the legal system has not kept pace with changes. There's a second explanation, which has to do

with changes in how we use water. Particularly east of the Mississippi, most water use has been in relatively low volumes and not 100% consumptive. But a couple of things have happened. One, you're getting companies like Perrier (now called Nestle Waters of North

America), coming in, and in response to the consumer demand for bottled water, they are putting in new wells immediately adjacent to springs. This has had terrible consequences to the springs. That's one hundred percent consumptive and a different quality of use than the East is used to. The second thing that is going on is the change in agricultural patterns. We're familiar in the West with

agriculture using irrigation as a method of growing crops. But east of the Mississippi, irrigation has been relatively rare. Farmers mostly rely on the moisture provided by Mother Nature and that's been sufficient to grow whatever crops they want. But

farmers have come to realize that if they can supplement what Mother Nature provides with irrigation then they may get higher crop yields. So in many places

in the East, farmers are shifting from what had been dry land farming to irrigation farming.

MVD: You talk about the pricing of water and water as a commodity. What's the problem with how water is priced?

RG: The problem is that water is way undervalued. Most people in this country, if

"Water is way undervalued."

they pay a water bill at all, it's a water bill paid to the town, the county, or the city water department. Or it is a bill paid to a public utility – a private company regulated by the state public utility commission. But in setting water rates, the rate structures in most places only include the infrastructure costs of the utility: the cost of the distribution system, the wages of employees, the cost of energy to pump the water, the cost for storage facilities and the distribution system, if it is diverting surface water. But there is no charge for the water itself – the water is actually free. As a consequence, we don't value it in the way that we need to. Every economist will tell you that people will adjust their behavior, if they are reasonably able to, in response to market incentives, price increases. What we need to do is to have a change in the pricing of water that first guarantees each person the minimum amount of water for basic human needs which would be free or next to free, and then we need increasing block rates, so that as water use goes up, the amount that each consumer pays for that water use will rise in a progressive fashion. Around the country you mostly see a huge increase in

"There is a role for government to play in intelligent water management plans. We need to take the lesson of keeping water local seriously and reuse this precious resource."

summertime use – could be a fifty, one hundred or one hundred and fifty percent increase from winter use. This indicates that the increase is almost all discretionary water use associated with lawns, gardens, outdoor landscaping, swimming pools, and other non-essential uses of water. *continued on page 10*


ANNUAL MEETING *continued from page 2*

Agency, Mark has been working hard to coordinate several large studies conducted by EPA and U.S. Geological Survey to ensure that they can also be used to develop limits on pollutant discharges to the river.

CRWA's Public Official Award went to former CRWA employee Lorraine Downey. The award was aptly presented by former CRWA Executive Director Rita Barron, who originally gave Lorraine a start in environmental work in 1974. Rita praised Lorraine's numerous contributions including her years as the Executive Secretary to the Boston Conservation Commission where she sought to improve the waterfront and establish the Harbor Walk.

Kate Bowditch, CRWA Senior Environmental Scientist, presented Hugh and Arlene Mattison with CRWA's Citizen Activist Award for their lifetime of activism. Arlene's acceptance remarks touched many in the hall and can be found on the sidebar on Page 2.

Moe Durand received CRWA's Volunteer Award. As former President of the very active Box Pond Association, Moe led clean up efforts in the Box Pond area for a number of years. He has also helped to bring Bellingham Power Plant issues to the forefront. Moe and his son, Ronnie, have been sampling the river in Bellingham for CRWA for over 2-1/2 years as part of CRWA's monthly water quality monitoring team.

The evening culminated in a thoroughly amusing talk given by environmental humorist Suzy Becker who identified the ignorance we must battle to save our environment. 

GLENNON INTERVIEW *continued from page 9*


MVD: What should individuals be doing to conserve water?

RG: There are a number of steps that we as individuals can take: there are low flow fixtures and efficient outdoor landscaping watering methods that reduce consumption. One can change from very high consumptive uses to lower consumptive uses. We can also as individuals support groups like CRWA and Ipswich River Watershed Association that are doing such wonderful work.

MVD: Now, one "solution" to our water problems is to put big pipes in the ground and transport water from farther and farther away. Is this a viable solution in the long run?

RG: That is how we built the American West, but it has immense environmental consequences, especially for the watershed from where you are taking the water. There would be a huge cry from the downstream states of Connecticut and New York if Massachusetts wanted to put a huge siphon in the Connecticut River.

MVD: How optimistic are you that we will begin to tackle and solve the problem of groundwater pumping?

RG: I'm pretty optimistic. We have created some of the silliest quick fixes that really just put band-aids on the problems – they don't cure the diseases. If the American public comes to realize that this is a problem, the public will rally around it. We will need tremendous support to do something about it. The good news is that Mother Nature is remarkably generous and regenerative. Despite the horrible abuses we have committed with her resources, if we change course, then the rivers will flow and the springs will bubble. 

WATCHDOG FOR THE RIVER

A list of projects on which CRWA commented to the state, town or developer between June 15 and November 30, 2002. Copies of the comment letters are available at CRWA.

Belmont	Final Environmental Impact Report for McLean Hospital Redevelopment
Boston	Phase I Waiver, Final Record of Decision for Emerald Necklace Environmental Improvement Master Plan and Phase I Muddy River Restoration Project
Boston	Draft Environmental Impact Report for Joslin Diabetes Center Expansion
Boston	Environmental Notification Form for Arborway CNG Bus Maintenance and Storage Facility
Cambridge	Final Environmental Impact Report for Charles E. Smith Residential
Franklin	Environmental Notification Form for Boston Water & Sewer Commission Solids Facility
Hopkinton	Phase I Needs Analysis Report of Hopkinton's Comprehensive Wastewater Management Plan
Medway	Expanded Environmental Notification Form for Proposed Retail Development of Charter Realty & Development Corporation
Medway	Single Environmental Impact Report for Proposed Retail Development of Charter Realty & Development Corporation
Medway	Water Management Act Permit Application for Town of Medway
Milford	Milford Power Limited Partnership's Request for Termination of the Charles River Monitoring Program Supporting Documentation
Newton	Notice of Intent Application and Wetland Resource Area Analysis for 750 Saw Mill Brook Parkway Radio Tower Array
Watertown	Water Management Act Permit Application for Mount Auburn Cemetery
Regional	Extension of Variance for the Massachusetts Water Resource Authority's CSO Control Plan for the Lower Charles River Basin to October 1, 2003
Statewide	Proposed Massachusetts Year 2002 Integrated List of Waters
Statewide	Draft National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems and Section 401 Water Quality Certification
Outreach	Monitoring the Chicago River: Assessing a Tool for River Improvement



THANK YOU

Even in these tight economic times, what is foremost in our members' minds is the quality of life the beautiful Charles River represents. Our members understand the correlation between a clean Charles, sustainable water resources, and solutions to environmental challenges for which CRWA works so diligently. We know we're doing our job educating members about this precisely because of your steadfast and generous support. We are tremendously grateful to all of you who have given so generously and to those of you who increased your donations. Every bit helps. A lot. Thank you from all the staff.

Since the summer issue of *Streamer* was published in mid July, \$115K has been raised in unrestricted gifts, with more to follow as Annual Appeal and membership donations flow in throughout the holidays. Donations from Millennium Society members (\$2,500 or more) were given by Sierra H. Bright, Miss Elizabeth B. Jackson, Ted and Beedee Ladd, Mr. and Mrs. John C. Bloom, Bruce and Helen Johnstone and James and Patricia Poitras. Unrestricted gifts in this category were donated by Philip Morris Companies, Inc., Nantucket Nectars, and Earth Share.

Gifts from our Headwater Society members (\$1,000 to \$2,499) include Mrs. Charles F. Adams, Barbara H. Austin,

Beacon Hill Garden Club, Mr. and Mrs. William L. Bennett, Stephen Burrington and Abigail Swaine, Fay M. Chandler, Jerome and Emily Farnsworth, William Fitz, Richard S. Forte, Elizabeth Gilmore, Head-of-the-Charles Regatta, Mr. and Mrs. Sturtevant Hobbs, Carolyn and John King, Margot C. Pyle, Margaret E. Richardson, Nancy B. Soulette, Robert F. Sproull, Ingeborg Uhler, Daniel G. Wheeler, Mr. and Mrs. Holyoke L. Whitney. Genzyme also gave generously at this level for our Earth Day River Clean-up.

Restricted grants were awarded CRWA from the Herman and Frieda L. Miller Foundation with \$50,000 to assist with the historic parkways project, and \$25,000 from The Harold Whitworth Pierce Charitable Trust for SmartStorm™. Boston Water and Sewer Commission gave \$10,000 for our flagging project, and the Ipswich River Watershed Association gave \$10,000. For a memorial walkway on the Charles River, Inge Siegel donated \$3,000 in memory of her son Marty Sender, Kahn Charitable Foundation gave an unrestricted gift of \$17,500 and \$16,000 came from the Jessie B. Cox Charitable Trust. Gifts were given In Honor of: Julie Kirklin and Jim Scott, and Kelly McClintock. Katherine and David E. Moore made a donation in memory of their daughter, Kate C. Moore.

STORMWATER

continued from page 1

to EPA and the Massachusetts Department of Environmental Protection (DEP), explaining how they intend to provide public education and outreach, public participation/involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention/good housekeeping related to their stormwater systems.

How prepared is your community to address its stormwater pollution? CRWA recently surveyed the upper Charles River watershed communities to assess their readiness to meet the March 10 deadline and found that, while many are on target for meeting their deadline, a few have not begun and may have difficulty submitting a thorough Notice of Intent. CRWA is prepared to help municipalities and regulators strengthen their stormwater management programs. We urge our members to follow up with community leaders and to get involved.

Streamer

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CRWA is a tax-exempt, nonprofit corporation established in 1965 to protect and enhance the health, beauty and enjoyment of the Charles River and its tributaries.

CRWA is a member of Earth Share and the Massachusetts Environmental Collaborative.

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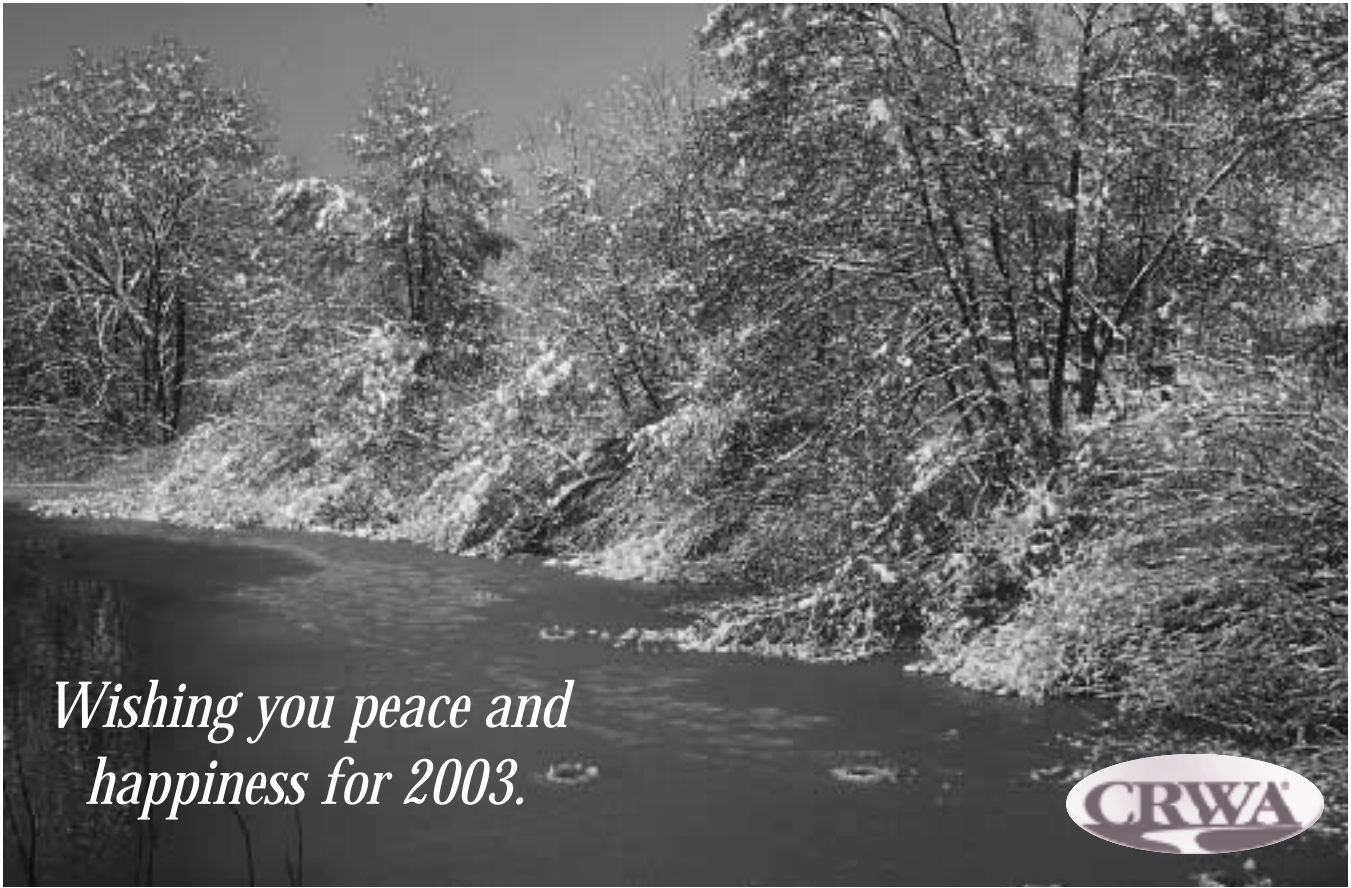
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*Wishing you peace and
happiness for 2003.*



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