

The newsletter of the Charles River Watershed Association

Blue-Green Algae Blooms Return to the Charles

This summer, as in 2006, periodic blooms of toxic blue-green algae rendered sections of the Charles unsafe for contact, prompting officials to post warning signs and boat clubs and boaters to be on the lookout. Fortunately, before this year's blooms began, CRWA worked closely with the Department of Conservation and Recreation (DCR) and other state agencies and volunteers to develop a standardized monitoring protocol, a public notification program, and a series of fact sheets so river users would not be caught unaware.

Under the new protocol monitoring for blue-green algae is conducted once every two weeks at four locations. If blue-green algae cell counts are found to exceed 70,000 cells per 100 milliliters of water, or if the levels of toxin exceed 14 parts per billion, the river is considered potentially unsafe for contact. If either level is reached, warning signs are then posted in that area of river and red flags are flown at the boathouses that participate in CRWA's water quality flagging program. Because toxins can persist in the water for several weeks after visual signs of blue-green algae have disappeared, weekly sampling will take place until both toxin levels and cell counts are back below the threshold levels.

CRWA and Charles River volunteer Roger Frymire began collecting samples at the end of June, and signs of blue-green algae were detected near the Charles River Dam within the first two weeks of the program. A noticeable bloom – an explosion of blue-green algae growth – was detected along the shores of the Esplanade on July 17th by officials from the U.S. Environmental Protection Agency. It looked as if the Charles River Swim, scheduled for July 21st, might be called off for the second year in a row. Fortunately, cool cloudy weather and light rain dispersed

the bloom. CRWA's careful monitoring of water quality conditions in the specific area of the race, as well as generally throughout the lower basin, gave race organizers and state officials the confidence they needed that it was safe to hold the swim.

In the Charles, a number of factors appear to contribute to blue-green algae blooms: low river flow levels; warm water temperatures; and high levels of nutrients, especially phosphorus. Ironically, the increased clarity of the cleaner Charles also makes algae grow better. CRWA's work to increase summer flow levels, and to reduce both heat and phosphorus loads to the river, should significantly reduce blue-green algae blooms.

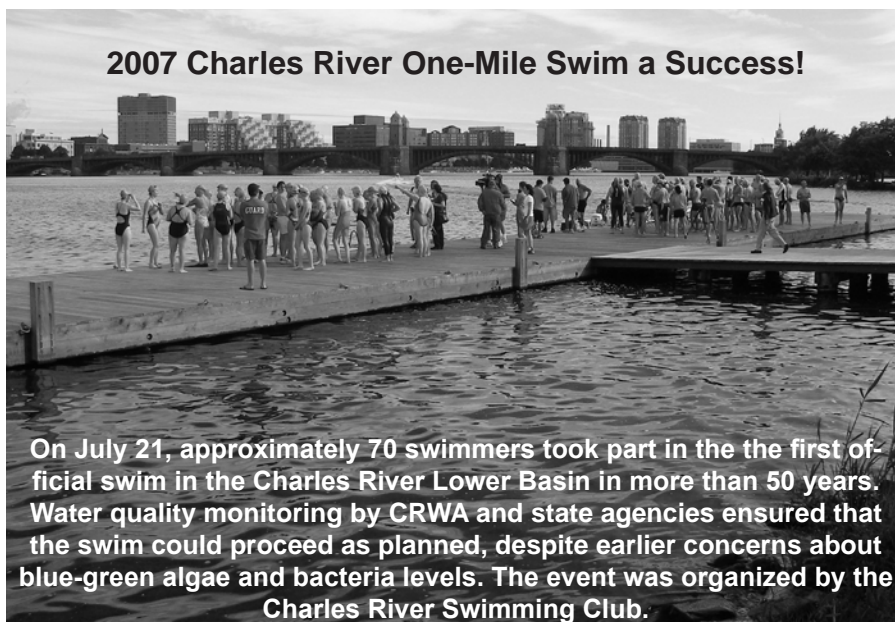
We are working closely with federal and state officials to understand the causes of nutrient overloading to the river (which include rainwater runoff from streets, buildings and parking lots, and wastewater treatment plant discharges) and to develop solutions to limit nutrients. CRWA has also been working closely with the Conservation Law Foundation (CLF) to force state agencies and private companies to clean up their discharges. Last year, CRWA and CLF filed a lawsuit against the Mass Highway Department, demanding that polluted highway runoff be cleaned up, and challenged the Mirant Kendall power plant's permit that would allow them to discharge more than 70 millions gallons a day of hot water directly into the Charles River. However, until more progress is made, we can expect blue-green algae blooms

to be an ongoing problem in the river.

CRWA's blue-green algae monitoring and water quality flagging programs are supported in part by the Boston Water and Sewer Commission and by a grant from REI.

- by Kate
Bowditch, CRWA
Director of
Projects

2007 Charles River One-Mile Swim a Success!



On July 21, approximately 70 swimmers took part in the the first official swim in the Charles River Lower Basin in more than 50 years. Water quality monitoring by CRWA and state agencies ensured that the swim could proceed as planned, despite earlier concerns about blue-green algae and bacteria levels. The event was organized by the Charles River Swimming Club.

CRWA Evaluates New England Stormwater Utilities

Stormwater runoff is the leading cause of water pollution in the United States and the Charles River. Many communities are struggling to tackle the challenges of financing stormwater management programs, which minimize and treat rainwater runoff before it is released into rivers, lakes or ponds. A new approach in New England is stormwater utilities, which are dedicated accounts to pay for capital



Flooded roads in Newton highlight the need for stormwater management *Photo: CRWA*

and operations expenses associated with stormwater management. The City of Newton is the first and only community in

the Charles River watershed that has developed and implemented a stormwater utility. With funding from Massachusetts Office of Coastal Zone Management and New England Development, Inc., CRWA has strengthened its capacity to assist municipalities to identify and implement appropriate financing mechanisms.

CRWA evaluated three stormwater financing

mechanisms in New England including Newton, South Burlington, Vermont, and Reading, Massachusetts. These three utilities, each with different structure, scope, and development process, are important and instructive models for other municipalities interested in pursuing dedicated stormwater funding. Conclusions drawn from the study include: sufficient time is necessary for utility development, fees should be based on impervious areas, and GIS mapping is very helpful in estimating the rate structure.

Next, CRWA surveyed 18 watershed municipalities about their current stormwater management programs, budgets, and needs and assessed their willingness and capacities to develop dedicated funding for stormwater-related work. Based on the survey findings - that most towns have inadequate stormwater budgets and programs, and that there is an overall interest and need to develop stable stormwater funding mechanisms - CRWA developed an implementation plan that identifies watershed towns on the verge of utility development, and outlines next steps and CRWA's role in each community. As a first step, CRWA will host a field trip for watershed municipal officials on September 18th to the University of New Hampshire's Stormwater Center to learn about stormwater best management practices.

To learn more about the project, please visit www.charlesriver.org/projects/stormwater/swutility.html

-by Talia Chalew, CRWA Rita Barron Fellow

Superior Court Rules for River Protection!

In a landmark victory for MA river protection, the Superior Court - in two decisions - upheld the Department of Environmental Protection's (DEP) broad authority to impose conditions to protect streamflow in water withdrawal permits. The rulings against the towns of Topsfield and Hamilton, located in the Ipswich River basin, upheld caps on summer water use by both towns, a requirement that they regulate private irrigation wells, and restrictions on lawn watering when river flow is low. The rulings, the first to interpret the Water Management Act (WMA), clear the way for conservation-based water withdrawal permits in the Charles and across the state.

In the Hamilton case, Judge Elizabeth Fahey ruled that DEP had a mandatory legal duty to ensure that withdrawals do not exceed the safe yield of the Ipswich basin. Safe yield is fundamental to the WMA and is the amount of water that can safely and sustainably be pumped from a river and its watershed without damaging the environment.

The Ipswich River Watershed Association, Essex County Greenbelt Association and a citizen group represented by CRWA's general counsel Margaret Van Deusen presented overwhelming evidence that the basin's safe yield is exceeded during the DEP administrative hearings; DEP acknowledged that its 1991 determination of safe yield was no longer accurate. The upper portion of the Ipswich River routinely dries up in the summer and scientific studies by the U.S. Geological Survey showed that water withdrawals are a major cause of the river's lack of flow. The judge ordered DEP to re-determine the Ipswich's safe yield "as soon as possible."

"The WMA can only protect our rivers if DEP fully and accurately implements the core principle of safe yield. CRWA will continue its work to ensure this happens," said Van Deusen. The decisions are posted on CRWA's website at www.charlesriver.org/projects/sust-water.html.

- by Margaret Van Deusen, CRWA General Counsel

Volunteer News

CRWA volunteers have been active this spring and summer, with activities ranging from water sampling to pulling water chestnuts. To kick off the season, thousands of volunteers helped out at the Annual Earth Day Charles River Cleanup and Run of the Charles Canoe and Kayak Race in April. Our monthly volunteer monitoring program is still going strong, and 12 new volunteers have been added to the ranks in recent months. As part of the third round of shoreline surveys through the MET Find-It and Fix-It project, 19 volunteers have completed about 30 miles of shoreline surveys this spring along the Charles and its tributaries; nearly all segments of the river have now been examined to find pipes, erosion, and other potential problems. Most recently, CRWA partnered with Charles River Canoe and Kayak to organize 70 volunteers to pull invasive water chestnuts from the river in Newton (see article below). As part of the first Governor's Volunteer Expo on July 11th, CRWA was invited to come to the State House to recruit volunteers as part of an ongoing effort to raise awareness and encourage service with nonprofit volunteer programs in Massachusetts.

We have recently received generous grants from REI, the Bilezikian Family Foundation, and the Patrick Murray Inaugural Committee Charitable Giving Program to support our volunteer programs. Many, many thanks to our funders as well as to all of our committed volunteers. We can't say it enough – thank you!

If you would like more information on CRWA's volunteer opportunities, please visit www.charlesriver.org/volunteer.html or contact volunteer coordinator Rebecca at rscibek@crwa.org or 781-788-0007 x200.

CRWA and Volunteers Help Rid the Charles of Invasive Water Chestnuts

On July 21, a crew of 70 volunteers, mobilized by CRWA and Charles River Canoe and Kayak (CRCK) helped rid the Charles River of seven tons (four truckloads) of water chestnuts, an exotic weed that is damaging to fish and native plants. The infestation of water chestnuts covers over 250 acres in the Lakes District of Newton and Waltham.

Water chestnut is a non-native invasive aquatic plant that is wreaking havoc on the river's habitat by forming a dense vegetative mat on the river's surface, driving out native aquatic plants, reducing light penetration, depleting the river's oxygen and damaging fish habitat.

CRWA led efforts in 1990s to rid the Charles of water chestnuts, convincing MA Department of Conservation and Recreation (DCR) to harvest the weed in deeper waters. Most of the infestation was removed by 2000, but without yearly maintenance the weeds are once again taking over.

Beginning this June, DCR contracted Aquatic Control Technology (ACT) to mechanically harvest weeds in the deeper waters as part of a multi-year contract. "If the water levels were higher, more of the weeds could be removed," explained Larry Smith of CRCK.

In shallow areas hand weeding is the only way to clear the plants. Ideally, they need to be removed in early summer, before the spiky seeds drop to the river's floor. Spikes are a safety hazard for boating and recreation activities. If not pulled in time, during a single season, one acre of water chestnut can produce enough seeds to propagate 100 acres the following year.

At the July 21st hand weeding event, neighbors of CRWA board member Ed Englander helped with on site coordination of volunteers, and Larry Smith of CRCK lent out boats. Gerry Smith of ACT volunteered his time as well as boats for the volunteers. That evening Ed Englander hosted a neighborhood picnic with plenty of food, music and riverboat rides for everyone who came out to help! Plans are already in the works for next year's weeding; contact Rebecca at rscibek@crwa.org or 781-788-0007 x200 if you have a group interested in volunteering.



Volunteers Laurie Doyle, a member of the CRWA Board of Advisors (left), and Debra Giarrusso (right) pull water chestnuts in Newton on July 25 Photo: Talia Chalew, CRWA

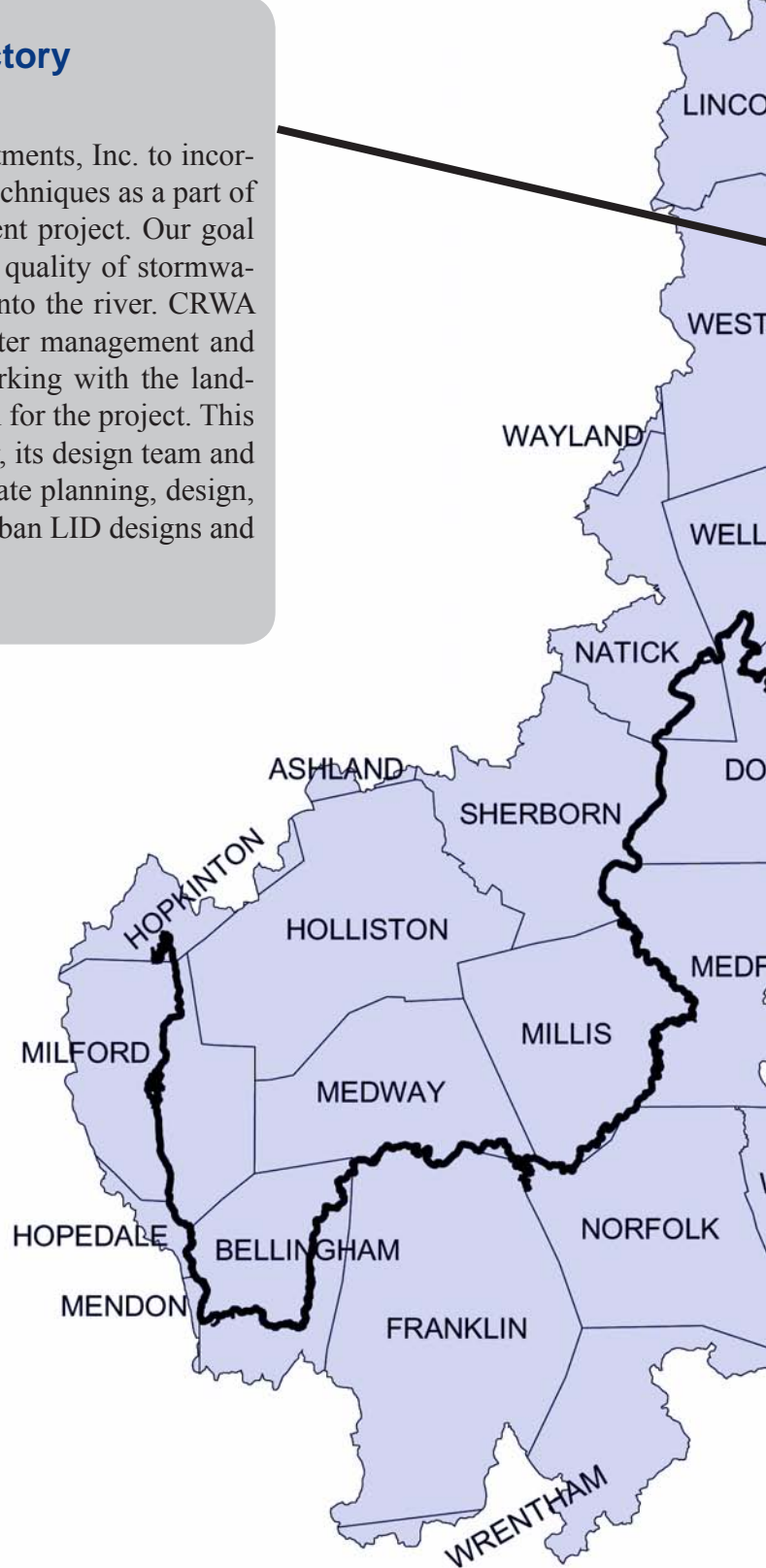
RUN OF THE RIVER

Waltham Watch Factory Waltham, MA

CRWA is partnering with Berkeley Investments, Inc. to incorporate Low Impact Development (LID) techniques as a part of the Waltham Watch Factory redevelopment project. Our goal is to reduce the volume and improve the quality of stormwater that is discharged from the property into the river. CRWA proposes to assess the potential stormwater management and recharge benefits of LID retrofits by working with the landscape design team through concept design for the project. This unique partnership between the developer, its design team and CRWA provides the opportunity to integrate planning, design, development and education about ultra-urban LID designs and innovative stormwater retrofits.

Massachusetts Water Needs Forecast

CRWA commended the Department of Conservation and Recreation's Office of Water Resources (OWR) for updating the Massachusetts water needs policy and forecasting methodology. CRWA suggested a number of changes such as distinguishing true water "needs" (public health and safety) from water "wants" (for lawn irrigation) and ensuring this policy conforms with other state water policies. CRWA objected to the use of interim water allocations by OWR because they will be difficult to change, or lower, and therefore should be made sparingly and require Water Resources Commission approval.



CHARLES RIVER WATERSHED ASSOCIATION'S REPORT OF WHAT'S HAPPENING ON AND AROUND THE CHARLES



One Fish, Two Fish, Three Million Fish American Shad Stocking Waltham, MA

For the second summer in a row, CRWA assisted MA Division of Marine Fisheries and US Fish & Wildlife Service in stocking juvenile American shad into the Charles River. In June and July, 700,000 fry were released into the river's Lakes District at DCR's Woerd Avenue Boat Launch in Waltham. Combined with last year's release, almost three million juvenile fish have been introduced to the Charles. American shad, an anadromous fish species that are born in freshwater, spend most of their life in the ocean and return to native freshwaters to spawn, were historically abundant until the mid-1800s. The restoration goal is to create a sustainable shad population of up to 30,000 adult fish in the Charles in the coming years.



MA DMF staff stock shad in Waltham Photo: CRWA

Consider supporting CRWA's long-term efforts to help restore shad to the Charles by "Adopting a Shad" with a minimum contribution of \$25 to CRWA. Visit www.charlesriver.org/projects/shad_stocking.html for more information.

Dexter School Dock Dedham, MA

The Dexter School recently filed for a Chapter 91 waterways license for a new rowing dock in Dedham, just upstream of the Route 109 bridge. CRWA advocated for increased public access, sharing of existing docks, and stormwater management improvements for the project site. We are concerned that the proliferation of docks as the river's water quality improves will detract from the beauty and competing uses of the river and adversely impact the riparian corridor. CRWA will work with state and local agencies to develop guidelines for dock design and placement and will continue to monitor new dock construction and fight uncontrolled dock growth.

“Greening” the Streets of Boston

A “green street” is a street designed to capture and clean stormwater runoff using vegetation and soils. Whether the vegetation consists of street trees, grass, or “raingardens,” a green street offers a way to decrease water pollution and improve neighborhood aesthetics. Many green street designs are also cooler and quieter than conventional streets. Green streets can incorporate traffic calming designs and can provide opportunities for public art, water features and gardens. Green streets need not be quiet, narrow residential streets, however; busy multi-lane boulevards can be designed as green streets without reducing their capacity to carry traffic or eliminating parking.

On a green street, rainwater washes from the roadway into vegetated areas such as tree wells, roadside swales, rain gardens and even small ponds and wetland areas, rather than into a conventional storm drain or combined sewer. There, runoff is filtered through plants and soils, slowing it down, cooling it off, and filtering out pollutants. The plants and soils in green streets are selected to tolerate roadway runoff, and with proper maintenance will survive and thrive for many years. In many locations, water can then be absorbed back into the ground, replenishing groundwater and feeding back to rivers and streams many weeks or months later. Excess water that cannot be absorbed by the ground is carried off to a stream, pond or wetland, much cleaner, cooler and flowing more slowly than from a conventional road and pipe system.

CRWA is currently involved in two street greening projects in the City of Boston. The first is in partnership with the Boston Environment Department (BED) and in-



Crown Street in Vancouver, British Columbia, the City's first “Sustainable Street.”

Photo: City of Vancouver Engineering Services

volves the design and implementation of a pilot green street project in Peabody Square, Dorchester. The project is being funded through a grant by the Massachusetts Department of Environmental Protection under the 604b Water Quality Management Planning Program, awarded to the City of Boston in early spring of 2007. The Boston Transportation Department and Boston Public Works Department have been working with the St. Marks Area Main Streets, local businesses and residents on the Peabody Square Improvement

Project since early 2006. The DEP Grant will enable BED and CRWA to incorporate Low Impact Development (LID) techniques into the redesign of Peabody Square to make it into a pilot project for Green Streets in the City of Boston.

The second project involves developing guidelines for “Street Greening” in the Allston Brighton neighborhood in partnership Allston Brighton Community Development Corporation (CDC). This project has been funded through a grant awarded to the Allston Brighton CDC by the State Department of Housing and Community Development for the “Allston Brighton Green Space Connections Street Design Guidelines” project.

Where they have been built, green streets are extremely popular with both residents and the public works departments who have built them. Since roadway runoff is one of the worst sources of pollution in the Charles, and climate change will make cooling our cities a priority, green streets are an obvious part of the solution.

- by Kate Bowditch, CRWA Director of Projects

River Advocates Boat Trip

July 18th, 2007

CRWA gathered forty politicians, river activists and board members, along with co-hosts The Esplanade Association and Charles River Conservancy, for a river tour to share information about each organization's work. The boat was compliments of the Charles Riverboat Company

Photo: CRWA Executive Director Bob Zimmerman, Jay Baldwin, and Evan Moss (from left to right) enjoy the river.



Discover Treasures of the Charles

Monday, September 10, 2007

Reception and Silent Auction
at Royal Sonesta Hotel
40 Edwin Land Blvd., Cambridge, MA
5:30 p.m. - 6:45 p.m.

Shipmates Ahoy
for a Dinner Cruise aboard the
Lexington and Longfellow Riverboats
6:45 p.m. - 8:30 p.m.

Corporate Sponsors
Eight guests \$5,000
Four guests \$2,500

Individual Tickets
Captains' tickets \$500 per person
First Mates' tickets \$250 per person

Valet and self-parking available
at the Sonesta

Bid on valuable treasures in the CRWA
Silent Auction at www.charlesriver.org

Treasures of the Charles Annual Dinner Cruise

Join the fun at CRWA's Annual Dinner Riverboat Cruise on Monday, September 10th from 5:30 to 8:30pm. Sharon Malt is chairing this adventure with a star studded committee. CRWA's first silent auction features treasures including a weeklong 'island getaway' at a luxurious hilltop villa on the exclusive island of Mustique in the southern Caribbean; visit www.charlesriver.org to view all the items and bid online. The final bidding will take place before the dinner cruise at a reception at the Cambridge Sonesta. There you can enter a raffle to win a diamond from Arazi jewelers with your choice of custom setting from Shreve Crump and Low.

Reserve your spot for the cruise by contacting Lorraine at 781-788-0007 x231, lburke@crwa.org or visiting www.charlesriver.org.

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CRWA is a 501(c)(3) dependent on philanthropic support. We welcome your contributions.



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Upcoming Events at Charles River Watershed Association

September

- 5 *Landmarks Festival at the Shell "Green Masterpieces" Concert, 7pm at the Hatch Shell on the Esplanade, Boston*
- 10 *CRWA Annual Dinner Cruise, 5pm at the Royal Sonesta Hotel, Cambridge*
- 18 *University of New Hampshire Stormwater Center site visit*
- 23-25 *Muddy River Environmental Film Series, Coolidge Corner Theatre, Brookline*

October

- 9 *Brown bag lunch with Professor Ferdi Hellweger of Northeastern University, 12:30pm at the CRWA Office*

November

- 13 *CRWA Annual Meeting, 5:30pm at the Newton Marriott*

3 TOPICS • OCEAN / CLIMATE CHANGE / FOOD • 3 DAYS

BOSTON'S ENVIRONMENTAL FILM SERIES
THE MUDDY RIVER
SEPTEMBER 23-25, 2007
Coolidge Corner Theatre, Brookline, MA
with additional screenings at Peabody Essex Museum, Salem, MA
www.Coolidge.org/MuddyRiver

THE Muddy River
ENVIRONMENTAL FILM SERIES

For more information on any of these events, call 781-788-0007 or visit www.charlesriver.org