

“Green into Gold:”

The Many Benefits of Urban Environmental Restoration

Is it really possible that economic development, urban growth and environmental restoration can all happen together? Environmentally friendly urban designs are often challenged by the economics of development, but data increasingly shows development that protects and restores the environment is cost effective and produces high value projects.

While there is a growing awareness of the multiple benefits of “green” buildings, there are still few redevelopments that maximize the potential of water on their site or in their neighborhood. Water-oriented “blue” design can save money, improve water quality, reduce flooding, provide natural pedestrian pathways and create beauty. Development projects in environmentally functional neighborhoods are more valuable in terms of economics and social dynamics, meeting the so-called “triple bottom line” analysis that is emerging as a tool for sound development.

To explore these concepts further, CRWA hosted a forum, “Green into Gold,” on March 19th at the Boston Federal Reserve Building. The afternoon focused on the benefits of urban environmental restoration, as part of CRWA’s efforts to educate developers, planners, and the public on this topic. Concentrating on Harvard University’s new Allston campus as a case study, the forum looked at the potential for such a large-scale redevelopment to transform an urban neighborhood.

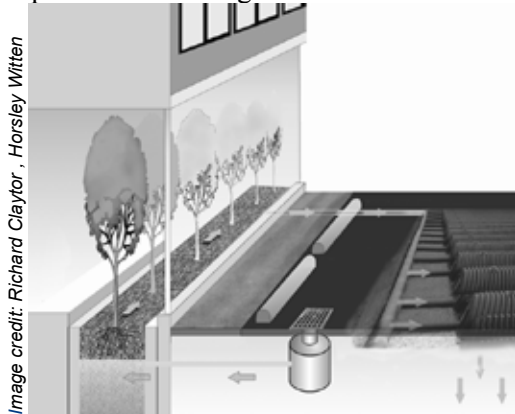


Image credit: Richard Claytor, Horsley Witten

An example of “blue” building design: Water from the parking area is collected and treated, then used for indoor garden irrigation. Excess water is recharged underground.

Water-oriented “blue” design can save money, improve water quality, reduce flooding, provide natural pathways and create beauty.

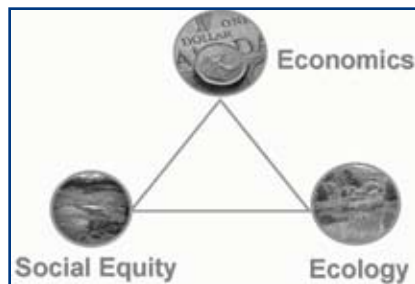
Kate Bowditch, CRWA Director of Projects, reviewed Harvard’s new campus plans and showed a series

of water- and open space- oriented restoration opportunities at the building site scale and at the neighborhood scale. CRWA has been working with Harvard’s Allston Development Group for the past two years in an effort to implement these designs into Harvard’s new campus.

Patrick Lucey from the Canadian consulting firm Aqua-Tex made a presentation on the economic benefits of environmental restoration and so-called “soft path” approaches to water resource management. Using specific projects that he has worked on over the past 10 years, Lucey detailed the financial, environmental and human or cultural benefits of integrating environmental restoration into development projects, achieving success on the “triple bottom line.” This approach serves to save money and enhance value for developers, communities and the ecosystems themselves.

Integrating water into urban planning and design is a natural fit for a watershed association, and CRWA’s approach and expertise are helping turn the concepts of “keeping water local,” as CRWA Director Bob Zimmerman first called it, into realities on the ground. Today, CRWA is working on several projects to help design building sites, streets and neighborhoods in ways that integrate water and open space in urban settings. As the green building movement expands nationwide, and Boston seeks to become a leader in environmentally sound building practices and technologies, this opportunity cannot be missed. We need to rebuild our cities and towns, step by step, in ways that generate environmental, social and economic benefits.

This work is supported in part by the Boston Foundation and the Cabot Family Charitable Trust.



The “triple bottom line”

Image credit: Aqua-Tex

- by Kate Bowditch, CRWA Director of Projects

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Create a legacy for generations to come of clean and abundant fresh water. Consider CRWA when making planned gifts, bequests, or naming beneficiaries of your IRA or insurance policy. Contact Peggy Sunshine at 781-788-0007 x235 for more information.



Photo by Rebecca Scibek

CRWA Board of Advisors Welcomes Four New Members

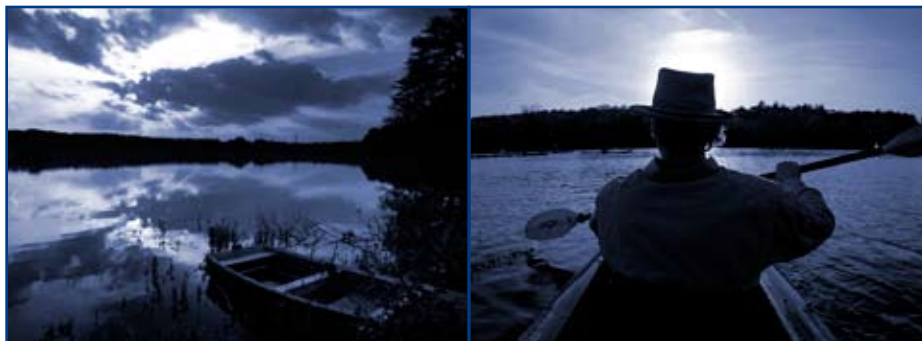
CRWA is pleased to announce four new additions to our Board of Advisors, which now totals thirty-five members. Our advisors play an important role as ambassadors to the broader community, introducing CRWA to their friends, neighbors and business associates by hosting events and welcoming newcomers at several CRWA events each year. We are pleased to welcome:

Laurie Doyle of Wellesley, Vice President and Portfolio Manager at Bank of America. Laurie has offered to assist CRWA with corporate giving initiatives.

Dr. Marcia Marker Feld of Newton, Professor Emeritus at Rhode Island University and former Chair of the Graduate Department of Community Planning. Dr. Feld's planning background is an asset in CRWA's work with 'blue cities.'

Susan Jarvi of Dover, a very generous donor to CRWA and a seasoned entrepreneur of more than twenty five years, most recently at Integrity Interactive. She brings her expertise in strategic planning and management mentoring to CRWA.

Dr. Greta Meszoely of the South End holds a doctorate in water resource management and sustainable development. Currently, Greta teaches Sociology at Suffolk University.



Photos by Matthew West (left) and Renee Dekona (right), © Boston Herald

From the Director: A toxic “B+” for the Charles?

On Earth Day this year, EPA once again gave the Charles a B+ for water quality. But the grade is a bit of a misnomer.

Though remarkable improvements in river water quality have resulted from the dramatic reduction of sewage discharges to the river, we have a serious new problem. Last summer, the river suffered a severe bloom of cyanobacteria, also known as bluegreen algae (though it is not actually an algae). For over two months, the river was deemed unsafe for contact over its last two miles because of the toxins emitted by the cyanobacteria. On August 9, 2006, a sample collected near the Museum of Science detected cyanobacteria cell counts over 1,000,000 cells per milliliter (mL). The World Health Organization (WHO) recommends that an advisory be posted when cell counts reach 20,000 cells/mL, and contact with the water be avoided when counts are at 100,000 cells/mL or greater.

Since CRWA had no protocol for testing the river for cyanobacteria, EPA didn't include the bloom as part of its river grade. Suffice it to say that a river that is rendered untouchable by toxic bluegreen algae has a problem. This summer, CRWA is working with the MA Department of Public Health, the Department of Conservation and Recreation, and the US Environmental Protection Agency to

test the river for cyanobacteria and toxins. Determining the level of risk is complicated by the fact that toxins may persist in the water for up to three weeks after visible signs of the cyanobacteria have disappeared and cell counts have dropped. We are working to integrate cyanobacteria warning levels into CRWA's flagging and public notification program.

Bluegreen algae blooms, like true algal blooms, occur in warm, nutrient-rich waters, especially where there is limited flow and movement of water. CRWA and EPA have been working closely together since 1999 creating computer models to understand the sources of the phosphorus (the main nutrient of concern) and high river temperatures that cause the blooms. EPA's model is done, and CRWA's, for the upper 70 miles of the river, will be done sometime this year. **Bottom line? We're going to have to dramatically reduce stormwater runoff from parking lots and roads** if we're going to solve this problem. That effort is sure to be controversial with some, especially those who own parking lots and roads, just like our push to eliminate sewage discharges was initially controversial with those who owned the pipes.

The science on stormwater and algae is clear. The jury is in. It's time to move our work restoring the Charles and our environment to the next level.

25th Annual Run of the Charles Canoe and Kayak Race

The silver anniversary of the Run of the Charles drew over 1,250 competitors, more than a hundred volunteers and thousands of spectators all along the race route on Sunday, April 29th for CRWA's annual celebration on the river.

“The Run of the Charles caps a great week for the Charles River,” said CRWA Executive Director Bob Zimmerman. “Earlier in April more than 2,000 volunteers came out for our annual Charles River Clean-Up Day. Between these two events, we had thousands of people demonstrate their appreciation of the river as a natural treasure well worth protecting.”

This year's race, showcasing the ongoing improvements to the Charles, featured a gala 25th annual celebration at the Finish Line Festival, including day-long music, activities, a raffle, and exhibits for the public. Raffle winners were Skip Farkas who won a We-no-nah Aurora canoe, and Kathy Manizza who won a FeatherLite 9.5 Heritage Kayak.

The team of Serge Corbin of Quebec, Canada and Steve Corlew of Grayling, MI, paired up to take first place in the 26-mile \$5000 Professional Flatwater Canoe Marathon. In the 24-Mile Relay Race, the Quinobequin Canoe Club posted the winning time for the fifth year in a row, finishing the 5-leg, 10 person relay 23 minutes faster than their winning time of last year. In the 19-Mile Races, the fastest boat was a kayak paddled by Erik Borgnes of Sturgeon Bay, WI. Graeme Rockett of Swampscott blasted the competition in the 9-Mile Races for the third year in a row. The 6-mile race was won by Grayson Bourne.



RUN OF THE RIVER

Community Rowing Inc. Boathouse Newton, MA

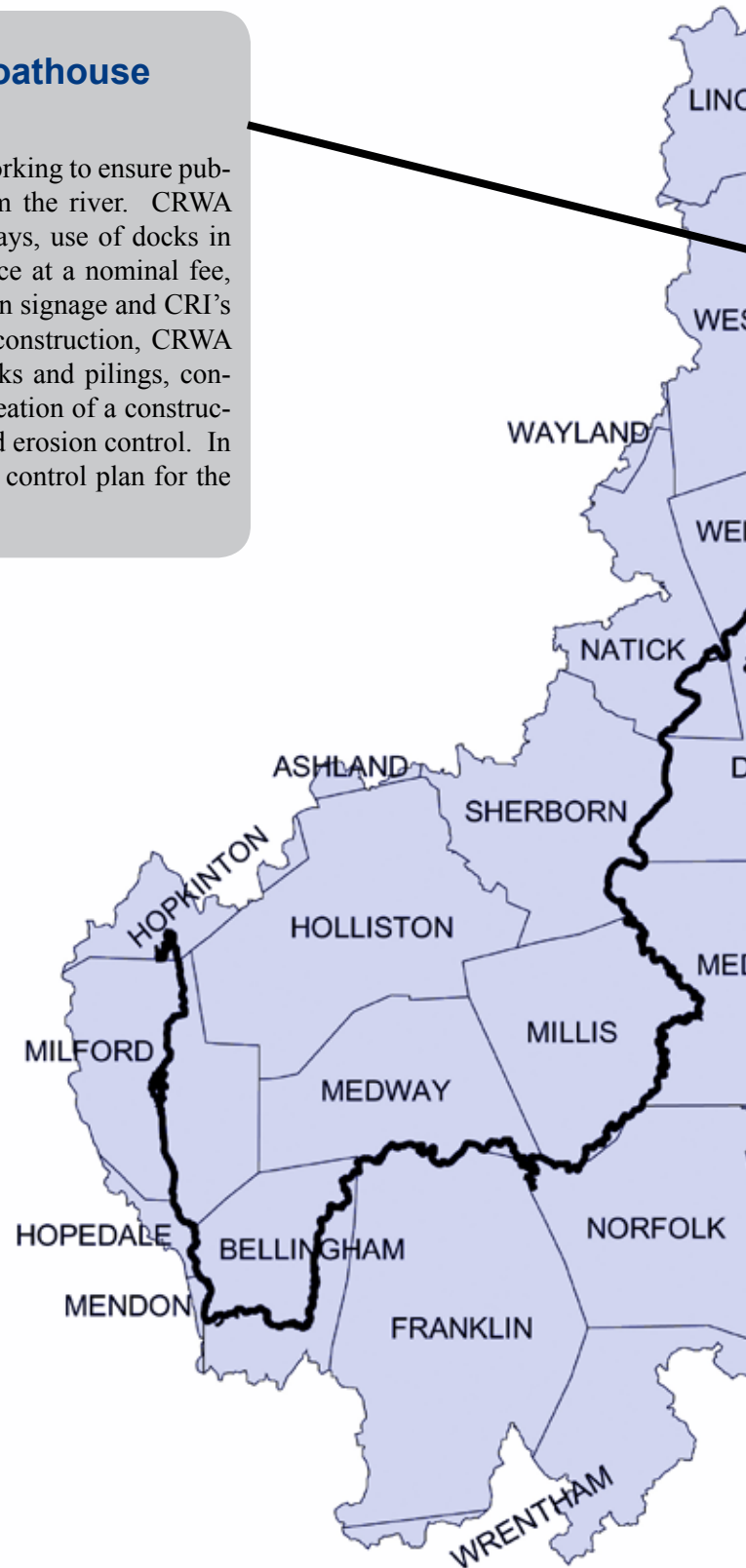
CRWA supports CRI's new boathouse and is working to ensure public access and that construction does not harm the river. CRWA suggests that public access - including walkways, use of docks in coordination with CRI, rental of the main space at a nominal fee, and access to restrooms - be clearly identified in signage and CRI's publicity. To prevent water pollution during construction, CRWA suggests arsenic-free wood treatments for docks and pilings, containing toxic sediments with silt fences, and creation of a construction mitigation plan to ensure bank stability and erosion control. In addition, CRI should develop a water chestnut control plan for the boathouse area.

Massachusetts State Stormwater Policy

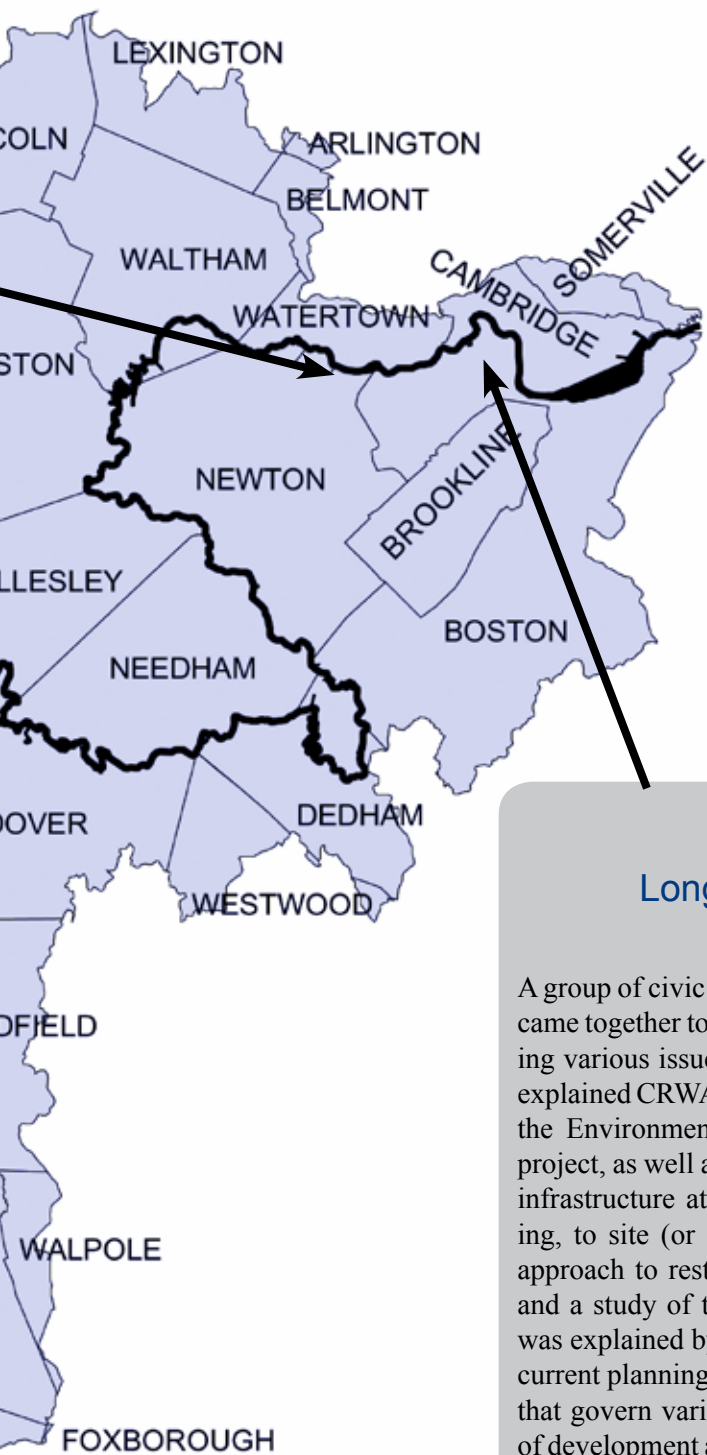
This spring, Massachusetts Department of Environmental Protection (MassDEP) released revisions to the state stormwater policy. Significant changes in the update are:

- the stormwater standards will now be incorporated in the Wetlands Protection Act and the Water Quality Certification regulations;
- new developments will be required to recharge more water from impervious areas back into the ground;
- redevelopment projects will need to meet a higher standard for "improving existing conditions;"
- operation and maintenance plans will be required.

CRWA serves on the Stormwater Advisory Committee to MassDEP and helped reach consensus on the new standards. We are generally supportive of these changes, though much more is still needed.



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



Massachusetts Water Resource Management Planning

CRWA joined Conservation Law Foundation (CLF) in commenting on MassDEP's draft Water Resource Management Planning (WRMP). While MassDEP's efforts to expand water planning and keep water local are encouraging, CRWA and CLF feel stronger guidelines are needed. They suggest including examples of projects that incorporate planning for water supplies, stormwater, and wastewater together to illustrate management principles. In addition, guidelines should emphasize land-use planning and the cost effectiveness of water management. Water planning should be required in the MEPA process so that developers are forced to consider water management.

Blue Cities Forum Longwood Medical and Academic Area (LMA) Boston, MA

A group of civic leaders, concerned citizens, and representatives from area institutions came together to hear about CRWA's approach to redevelopment at the forum, discussing various issues related to environmental restorations in the LMA. Kate Bowditch explained CRWA's Blue Cities Initiative, covering the approach to and overall goals for the Environmentally Sensitive Urban Development project, as well as illustrating the application of green infrastructure at various scales, ranging from building, to site (or campus), to neighborhood. CRWA's approach to restoration, starting with a site analysis and a study of the historical evolution of the LMA, was explained by Pallavi Mande. She highlighted the current planning framework and regulatory processes that govern various projects through different stages of development and environmental review. Landscape Designer Stephanie Hurley presented a variety of green infrastructure retrofit opportunities within the public realm and on privately-owned sites in the LMA. In addition to recommendations for specific sites in the LMA, the session covered successful case studies that illustrate landscape design strategies for greening buildings, streets, open spaces and entire neighborhoods in light of the opportunities present in the LMA.





A science festival display showcasing CRWA's work restoring native fish

and learned more about CRWA's work in protecting water resources. Special thanks to our primary sponsors American Power International for funding the displays and Boston Duck Tours for sponsoring the race. In addition, thanks to BISCO for underwriting publication of Captain Hydro Booklets, Charles Riverboat Company

for donating a riverboat and crew, Ken Finkelstein of NOAA for presenting his study on river sediments, Trout Unlimited for holding fly fishing clinics, Meg Tabacsko of MWRA for offering a water sampling lab and Craig Austin for a history activity on



Aveda adopted CRWA as their EarthShare partner in keeping with their commitment to make clean water a basic human right. Aveda salons throughout the Northeast held events and donated salon services to raise over \$10,000 in support of CRWA. Special thanks to Pyara Aveda Salon in Cambridge for featuring an evening of fashion and theater at OM Restaurant in Cambridge.

CRWA Science Festival

CRWA inaugurated a River Science Festival this year in conjunction with the 25th Annual Run of the Charles Canoe and Kayak Race. Families explored the exhibitions, toured the Charles on an eco-boat trip



CRWA staff and volunteers with a 'school' of shad balloons ready for adoption - for a \$25 donation, you can adopt a shad!



Demonstrating the 'watershed in a box' science festival visitors

Beacon Hill Seminars Features Bob Zimmerman

For the past seven years, Beacon Hill Seminars (www.beaconhillseminars.org or 617-523-0970) has been offering an exciting array of seminars to residents living in Beacon Hill. This spring they approached CRWA Executive Director Bob Zimmerman requesting that he offer a course, entitled "Understanding the Charles River: Charles River Watershed Association and the Charles River as an Urban Environmental Laboratory." Bob attracted a packed house for each of the five two-hour sessions. The class explored the problems urban rivers and water resources face, and led students through the complex web of human interventions needed to restore harmony to the natural world. Due to popular demand, Bob is offering another course this fall. For any member of the Leadership Society of CRWA (a \$500 or greater donation) the registration fee will be waived. Contact Peggy Sunshine at 781-788-0007 x235 to make arrangements or for more information.

Beacon Hill Party April 25th



Top: Hosts Meredith and Gene Clapp, CRWA Board of Advisors, and Sharon Malt, CRWA Board of Directors, with CRWA's Peggy Sunshine and Bob Zimmerman. *Bottom left:* Ginger Lawrence, Board of Directors and Greta Meszoely, Board of Advisors. *Bottom middle:* Laurie Doyle, Board of Advisors, and Mary Louise Cocci of Beacon Hill. *Bottom right:* Susana Lopez of Beacon Hill and Alan Aisenberg, Board of Advisors.



CRWA Informing People in All Regions About Their Stretch of the River

Thanks to many gracious hosts over the past few months for inviting neighbors to learn about the important environmental science and legal work of CRWA. The snowy weather on March 19th was no deterrent for over fifty guests at the home Caroline (BOA) and Mike Standley in Medfield, for an hour-long fireside chat with Executive Director Bob Zimmerman about how CRWA is protecting water resources with water permitting legislation. Nor did the wind gusts discourage over seventy five Beacon Hill friends and neighbors from joining hosts Sharon (BOD) and Brad Malt and Meredith and Gene Clapp (BOA) at the Malt's home on April 25th for a festive cocktail party and presentation by Bob about the root causes of bluegreen algae blooms in the lower basin. The sun shone on May 6th while over a hundred guests enjoyed classical music and toured the magnificent gardens at the home of Mrs. Walter Hunnewell. After hearing Bob's remarks and celebrating the 1.5 million American Shad introduced into the Charles River by CRWA, MA Division of Marine Fisheries, and US Department of Fish and Wildlife, guests spent time with Willard Hunnewell and grounds keeper David Dusenbary strolling the grounds that abut Lake Waban and hearing fascinating anecdotes about the property.

Hunnewell Garden
Party, May 6th



Save the date - CRWA Dinner Cruise, Monday September 10!

8th Annual Earth Day Charles River Cleanup is Largest Ever!

The 8th Annual Earth Day Charles River Cleanup on April 21 was a great success, with 2,500 volunteers participating at sites all along the Charles River from Boston to Milford - a total of 65 sites in 18 communities. Volunteers from more than 110 different businesses, neighborhood organizations, clubs and schools took part in this year's event. We estimate that **volunteers removed more than 30 tons of trash from the river, including (at last count) a refrigerator, an engine block, many tires, thousands of cigarette butts, candy wrappers and coffee cups, lots of plastic bags, fourteen bicycles, a couch, and a parking meter.** Due to the tremendous efforts of all our volunteers, the Charles is now cleaner, healthier, and more beautiful.

Secretary of the Executive Office of Energy and Environmental Affairs Ian Bowles, Massachusetts Department of Conservation and Recreation Commissioner Priscilla Geigis, Department of Environmental Protection Commissioner Arleen O'Donnell, Senator Diane Wilker-



Photo by Lucas Wickham

son, and Representative Tim Toomey kicked off the event at the Hatch Shell on the Esplanade. Other special guests at the Cleanup included US Senator John Kerry, who stopped by the Herter Park site to greet and thank volunteers; Senator Steven Tolman and Representative Kevin Honan also attended the Cleanup at Herter Park in Brighton.

The Annual Earth Day Charles

River Cleanup is organized by a collaborative of groups interested in environmental and river issues: Charles River Watershed Association, MASSPIRG, Charles River Stream Team, Senator Steven Tolman's Office, Charles River Conservancy, The Esplanade Association, and the City of Newton. This year's major sponsors included the Clean Charles Coalition, Massachusetts Department of Conservation and Recreation, New Balance and Whole Foods Markets. Many thanks to all of our cleanup sponsors, dedicated volunteers, and to Massachusetts College of Art student Ray Heekin, who designed our t-shirt.

-by Rebecca Scibek, CRWA Volunteer Coordinator



Photo by Lucas Wickham



Charles River Watershed Association

190 Park Road
Weston, MA 02493