

River Reach

Newsletter of the New Hampshire Rivers Council • Spring 2009

Searching for Rock Snot: River Runners

Photo Credit: Heather Pike

When the invasive algae *Didymosphenia geminata*, aka “rock snot,” was first discovered in the upper Connecticut River in 2007 there was immediate concern. A US Environmental Protection Agency white paper summarized the problem nationally this way:

- the only freshwater diatom (algae) to exhibit large scale invasive behavior, and a persistent phenomenon on a global scale
- a species with the biological capacity to produce inordinate amounts of stalk material
- a significant biological impact to stream ecosystem function, with the ability to alter foodweb structure and

hydraulics of streams and rivers

- an organism that has expanded its ecological range and tolerance
- exhibiting a pattern of growth with potential impact to fisheries
- a significant strain on regional and national economies through impacts to tourism, fisheries, and hydropower
- an organism for which we lack basic biological and ecological knowledge.

The Rivers Council decided that monitoring was the first step towards a control strategy. With grant funding from the Davis Conservation Foundation, McNinch Foundation, NH Department of Environmental Services, Hunt Foundation, Norcross Foundation,

Samuel P. Pardoe Foundation and the Cogswell Trust the River Runner program was born. Five summer seasonal staff, armed with
(Continued on page 2)



Didymosphenia geminata, also called didymo, or “rock snot” for its appearance. Photo courtesy NHDES.

River Runners Seek Rock Snot

The New Hampshire Rivers Council is committed to the conservation and sound management of New Hampshire's rivers and watersheds.

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The New Hampshire
Rivers Council is a 501 (c) 3
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NEW HAMPSHIRE
RIVERS COUNCIL

Rivers Make New Hampshire!

(continued from page 1)

GPS units, cameras, clipboards, kayaks, and hip waders monitored high use fishing sites to look for evidence of rock snot. At the same time the River Runners monitored other aquatic invasive plant species. Curly leaf pondweed, European naiad, and variable milfoil were found at a number of sites.

The data collected was used to design a GIS map (see page 3). During the field season no new locations of rock snot were located, although it was found at known sites. This result may be for three reasons:

1. It hadn't spread, which is the best case scenario;
2. High water (it was a wet spring) may have torn off the algae stalks at new locations, making identification difficult. High water also made it difficult to navigate many sites.
3. The algae had spread, but only at a cellular level, and so was not visible to the unaided eye.

It is very unlikely that rock snot will simply stay in its current locations (a new site in New York state was recently reported). The question is, how fast and to what extent will it spread? Toward answering that question, the Rivers Council has a two pronged approach.

The first is a continuation of the River Runner program. To date there is new funding from the New

Hampshire Department of Environmental Services, TransCanada Corporation and the Samuel P. Pardoe Foundation. River Runners will look at many of the same sites as last year, and some new sites. As well, select sites will be sam-



Rock Snot encrusted rock. Photo courtesy NHDES.

pled and tested for rock snot at a cellular level.

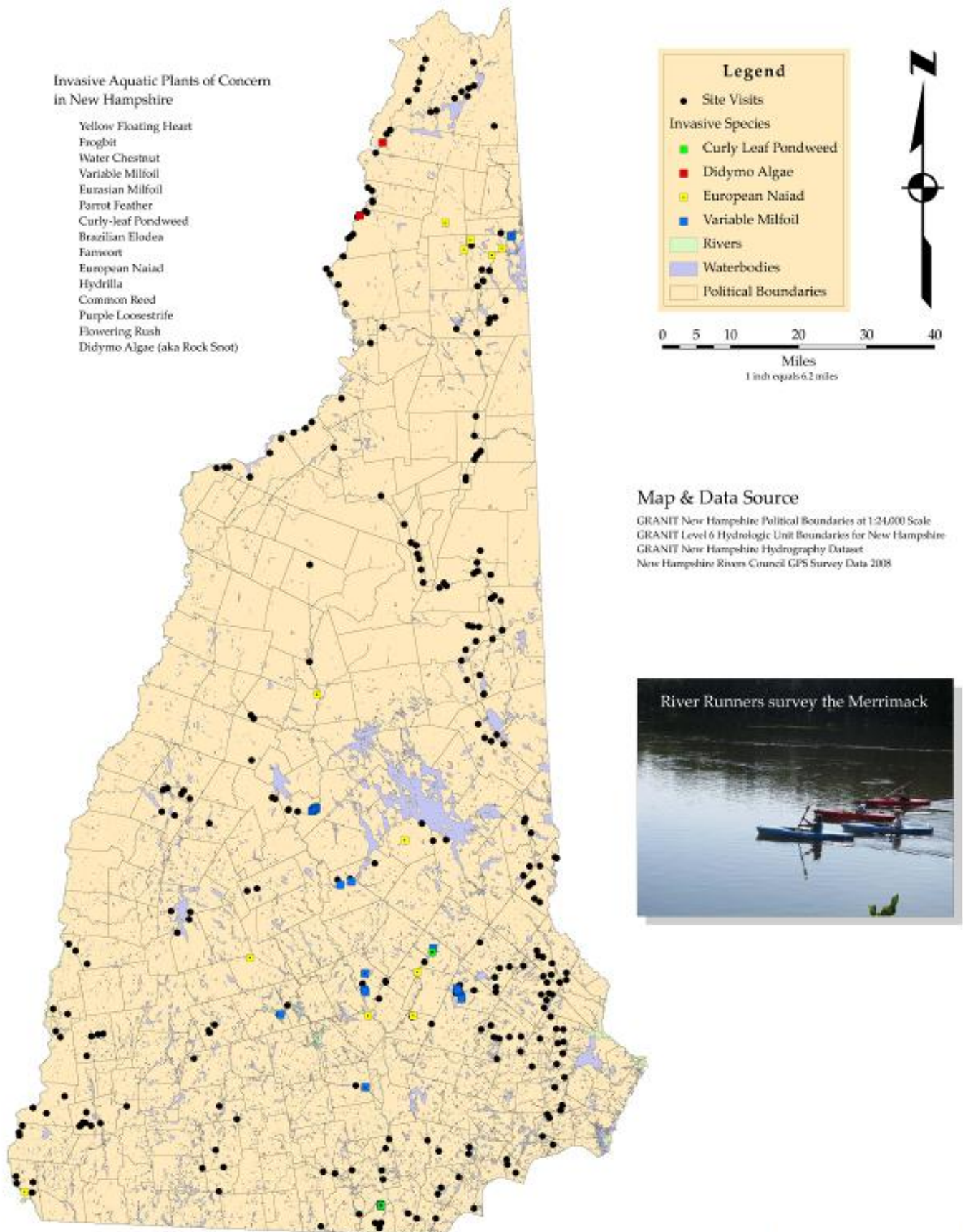
Second, education and outreach will be expanded. With the creation of a new brochure, you, and anyone you know who uses rivers, can learn how to identify and controlling the spread of rock snot.

Click [here](#) for a **Help Wipe Out Rock Snot** brochure.



Black dots indicate spread of Didymo in US. Dots can now be added to New Hampshire, Vermont and New York. Map source: USEPA.

New Hampshire Rivers Council Aquatic Invasive Survey 2008



President's Letter

What an amazing year it's been for New Hampshire's rivers. The new River Runners program visited 258 sites around the state in the summer of 2008. The good news is that no new Didymo infestations (see front page) were found—but we must remain vigilant. This invasive alga can coat river bottoms from bank-to-bank at thicknesses of up to 3 inches; choking out all bottom dwelling life and habitat. River Runners will be monitoring again this field season.

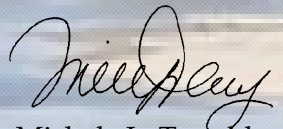
This year, the Council was recognized as a leader in our state and was asked to bring the national program SMAR.T to New Hampshire (see page 5). This program works with the public, schools, pharmacies, hospitals, elder care facilities and others to inform them about how flushing pharmaceuticals endangers our waters and our health. The Council will be working through 2009 on an application of impervious surfaces at the NH Department of Environmental Services offices on Hazen Drive in Concord. This site will not only reduce run-off to the Merrimack River but will also serve as a demonstration area where designers, contractors, and homeowners can see first-hand how these amazing new products work to make their areas better while benefiting our watersheds.

The Council worked very hard in the legislature to help craft the best protections in the Comprehensive Shoreland Protection Act and other regu-

latory and enforcement programs. Our annual meeting and celebration of the 20th anniversary of the Rivers Management and Protection Act—legislation that the Council (when it was known as the New Hampshire Rivers Campaign) spear-headed—was a major event at the Red River Theatres. Plans for 2009 include continuing these programs and embarking on an ambitious state-wide stormwater and runoff project.

In my work, I often think of the blessing and curse, "May you live in interesting times." These challenging times have been a double-edged sword for our environment. While the slow-down in development has provided us with an opportunity to pause, learn, plan, and implement better management and policies, the economic downturn has challenged social entrepreneurs. The Council has weathered many challenging climates over the last two decades and thrived.

I hope that you will join me in continuing and growing your support for our work with the New Hampshire Rivers Council. I know that if we continue to work together, these "interesting times" will be a true blessing for New Hampshire's watersheds.


Michele L. Tremblay
President

The SMARxT Disposal Program

Since the late 1990s, evidence has been mounting that pharmaceuticals are making their way into our rivers and lakes. The extent of the problem is not known because analytical techniques are still in their infancy and the number of compounds is vast. There are numerous sources of this contamination, including land applied sludge, runoff from animal feedlots and excretion of excess pharmaceuticals from our bodies (via wastewater treatment plants). Another important and more preventable source, however, is excess or out-of-date drugs that are flushed down toilets and drains.

Flush disposal was encouraged as a safe way to get rid of excess drugs long before awareness of its potential impacts. With increasingly sensitive water quality testing and research on aquatic organisms, these impacts are starting to surface.

In order to build public awareness, the New Hampshire Rivers Council has joined the SMARxT DISPOSAL™ public awareness campaign (www.smarxtdisposal.net), a partnership between the U.S. Fish and Wildlife Service, the American Pharmacists Association, and the Pharmaceutical Research and Manufacturers of America. This campaign strives to educate the public about new guidelines for proper disposal of pharmaceuticals.

What Can You Do?

DO NOT FLUSH unused medications and **DO NOT POUR** them down a sink or drain.

Follow these simple steps to help safeguard lives and protect the environment:

➤ Pour medication into a sealable plastic bag. If medication is a solid (pill, liquid capsule, etc.)

crush it or add water to dissolve it.

- Add kitty litter, sawdust, coffee grounds (or any material that mixes with the medication and makes it less appealing for pets and children to eat) to the plastic bag.
- Seal the plastic bag and dispose of it in the trash.

For more information, consult your pharmacist or visit our web site by clicking [here](http://www.smarxtdisposal.net).

SMAR_xT DISPOSAL™
A National Public Awareness and Partnership Campaign
Promoting Responsible Consumer Medication Disposal to Ensure Healthy Aquatic Ecosystems

SMART DISPOSAL
A Prescription for a Healthy Planet

Protecting the environment is everyone's responsibility.
DO NOT FLUSH unused medications and **DO NOT POUR** them down a sink or drain.

Follow these simple steps to help safeguard lives and protect the environment:

- Pour medication into a sealable plastic bag. If medication is a solid (pill, liquid capsule, etc.) crush it or add water to dissolve it.
- Add kitty litter, sawdust, coffee grounds (or any material that mixes with the medication and makes it less appealing for pets and children to eat) to the plastic bag.
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- For more information, consult your pharmacist or visit our web site at:

smarxtdisposal.net

New Hampshire Rivers Council
Keene State, New Hampshire

American Pharmacists Association
Improving medication use. Advancing patient care.
APhA

PPhMA

Executive Director's Letter

It has been more years than I want to admit since I was an eager young college student. The environmental movement was just starting to gather steam then, and we often discussed, in our sophomore way, whether we were witnessing true social change, or just a fad (I believe yo-yos were popular then...).

We now know that it **was** an institutional change, albeit a rocky one. While yo-yos have come and gone, a few times, the public's desire to protect the environment has been consistent. Government, business and non-profits have followed suit. I live in a solar powered house, go to work in a LEED certified building, and coordinate projects with government agencies devoted to protecting our rivers and streams. So you might well ask, "Are our environmental issues resolved? It has been decades since we started working on them."

As I struggle to remember my academic years, I recall the book **Small is Beautiful**, by E.F. Schumacher. Among other ideas, Schumacher believed that our economy was at odds with environmental conservation. He wrote:

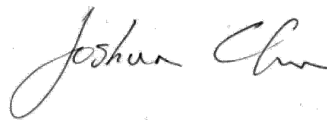
Can such a system conceivably deal with the problems we are now having to face? The answer is self-evident: greed and envy demand continuous and limitless economic growth of a material kind, without proper regard for conservation, and this type of growth cannot possibly fit into a finite environment.

Whether Shumacher was completely correct can be fun to debate. But there is no doubt that growth and technology have been the harbingers of new environmental problems. The Rivers Council has taken the time to review the significant new issues that face our rivers, streams and watersheds. The result is a new two year strategic plan in

which we address:

- Stormwater
- Invasive Species
- Pharmaceuticals and water quality
- State/Federal river protection programs
- Partnerships

I hope you'll take the time to read the document, by clicking [here](#). Your comments and support are welcome!



Joshua Cline
Executive Director



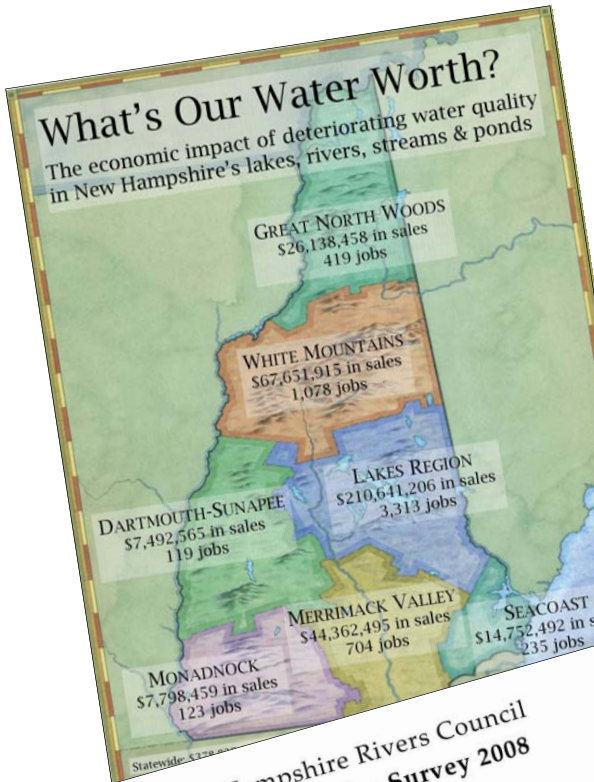
NEW HAMPSHIRE RIVERS COUNCIL STRATEGIC PLAN: 2009 to 2010

The river is the center of the land, the place where waters, and much more, come together. Here is the home of wildlife, the route of explorers, and recreation paradise... Only fragments of our inheritance remain unexploited, but these streams are more valuable than ever.

— TIM PALMER

Support NH Rivers!

These are some of the projects and policies your membership has supported. Please help us continue to protect New Hampshire rivers with a membership renewal or donation. Click [here](#) to contribute on-line. Thank you!



Do you live by a lake, river, or tidal water?

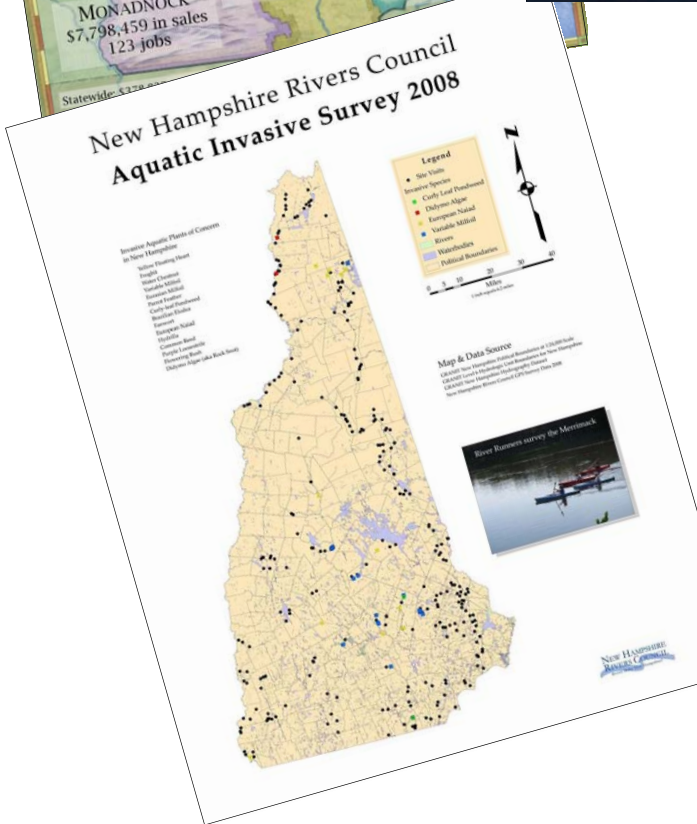
Then you need to know about the Comprehensive Shoreland Protection Act.

Effective July 1, 2008

A state shoreland permit is required prior to initiating many types of construction, excavation or filling activities within the protected shoreland.

Help wipe out **Rock Snot**

This invasive algae can cover stream beds, disturb habitat and make a mess. It is transported by people, boats, waders or anything that contacts infected waters.



You are standing on Porous Pavement
Putting stormwater in its place

LAYERS*	FUNCTIONS	BENEFITS
4 inches of porous pavement (asphalt, concrete or concrete pavers)	POROSITY Porous pavement has pores allowing stormwater to flow through the material. Additives maintain its strength.	SALT & TRACTION Because stormwater drains there is little or no winter ice. Salt application can be reduced up to 75%. The surface maintains traction when wet.
4 inches of 3/4" crushed stone	SUPPORT Crushed stone provides support as vehicles travel over the surface.	COST Porous pavement can be less expensive than standard pavement if it reduces construction of other stormwater infrastructure.
8-12 inches of sand	RESERVOIR & TREATMENT This layer acts as a reservoir to hold stormwater, where it is slowly released to the soil. Natural treatment of many stormwater pollutants occurs here.	WATER QUALITY & TEMPERATURE Phosphorous, zinc, suspended solids and petroleum hydrocarbons are dramatically reduced. Stormwater can reach 120 degrees. Temperature is decreased as water passes through layers.
4 inches of 3/4" crushed stone	FROST PREVENTION This layer "disconnects" the water from potential freezing conditions that could stop stormwater flow.	LIFE SPAN Porous pavement works in Northeast winters. Reduced freeze/thaw improves life span and reduces repairs.
Base soil	WATER FLOW Stormwater reaches the natural soil layer. It can slowly enter ground water and flow to waterbodies.	WATER QUANTITY Reducing stormwater flow helps control flooding. Slow release of water maintains river and stream levels.

* This is a typical cross section which may change depending on location, intended use and type of porous pavement.

Save the Dates

The 2009 New Hampshire Joint Water and Watershed Conference *Focusing on New Hampshire's Water Resources: 2020 Vision*

Friday and Saturday, November 20-21, 2009

8:00 a.m. – 4:00 p.m.

Grappone Conference Center, Concord, NH



The organizing committees of the annual *New Hampshire Watershed Conference* and the *New Hampshire Water Conference* have joined forces to offer a single, comprehensive event for 2009. The purpose of the merger is to combine talent, resources, and audiences from both events into a unique, two-day event designed to meet the information and networking needs of lake, river, and watershed groups; environmental organizations; volunteer monitors; municipal board and staff members; elected officials; local and regional planners; policy makers; scientists; educators; consultants and students.

Conference Objectives:

Conference participants will enhance their capacity to protect water resources by:

1. Learning about ground-breaking research and its application
2. Receiving latest updates on water related policies and agency programs
3. Gaining knowledge about effective water education and outreach
4. Participating in training sessions to improve organizational skills and functioning
5. Sharing understanding, concerns, accomplishments, skills and perspectives with others
6. Contributing to state-wide planning efforts for New Hampshire's water future

Conference format:

- Two days
- Plenary sessions each day
- Five concurrent tracks across both days (GIS, Stormwater, Climate Change, Watershed Management, Land Use and Land Conservation)

Call for Sponsors and Exhibitors

Conference supporters and exhibitors are sought for the 2009 Joint Water and Watershed Conference. This is a great way to reach hundreds of people in business, government, non-profits, academia and the public who are working on water and watershed based policy, research, legislation and construction. For more information click [here](#), or call NHRC at 603-228-6472 or e-mail josh@nhrrivers.org.

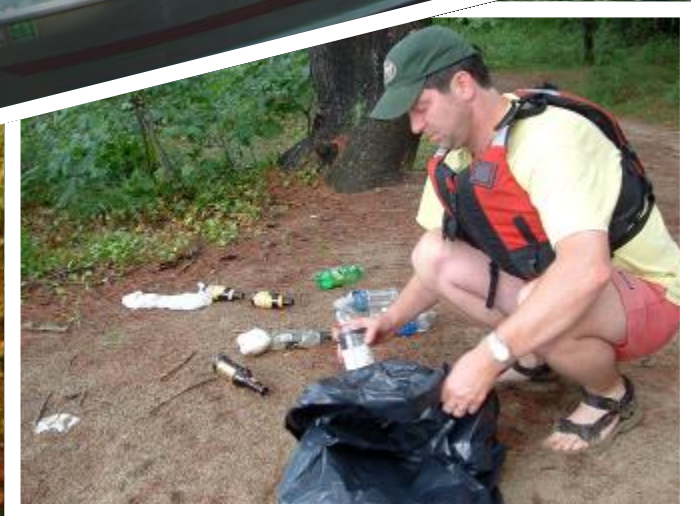
- One unique track for each day (Water Infrastructure – Friday; Organizational Development – Saturday)
- Different audience emphasis each day – Friday geared for technical/professional audiences; Saturday geared for lay/volunteer audiences; both days for local officials and state

policy makers

- Sessions of varying lengths (20, 30, 60 or 120 minutes)
- Facilitated discussions on future directions for water science, policy and practice interspersed in both days
- Ample opportunities for networking

Conference registration will be on-line at www.nhrrivers.org beginning early August.

River Clean Up



Mark Feigl and daughter Grace (age 9), NHRC volunteers, are out on the Merrimack as soon as it is warm enough to clean up trash on the river's banks. Thanks for keeping the river clean!