Searching for Rock Snot: River Runners

W hen 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, McNhinch 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

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

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54 Portsmouth Street
Concord, NH 03301
603-228-6472
www.nhrivers.org
info@nhrivers.org

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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 sampled 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

Invasive Aquatic Plants of Concern in New Hampshire:
- Yellow Floating Heart
- Frogbit
- Water Chestnut
- Variable Milfoil
- Eurasian Milfoil
- Parrot Feather
- Curly-leaf Pondweed
- Brazilian Elodea
- Farnswoth
- European Naiad
- Hydrilla
- Common Reed
- Purple Loosestrife
- Flowering Rush
- Didymo Algae (aka Rock Sneff)

Legend:
- Site Visits
- Invasive Species
  - Curly Leaf Pondweed
  - Didymo Algae
  - European Naiad
  - Variable Milfoil
- Rivers
- Waterbodies
- Political Boundaries

Map & Data Source:
- GRANIT New Hampshire Political Boundaries at 1:24,000 Scale
- GRANIT Level 6 Hydrologic Unit Boundaries for New Hampshire
- GRANIT New Hampshire Hydrography Dataset
- New Hampshire Rivers Council GPS Survey Data 2008

River Runners survey the Merrimack
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 regulatory 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) spearheaded—was a major event at the Red River Theatres. Plans for 2009 include continuing these programs and embarking on an ambitious statewide 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
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.
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 sophomoric 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

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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!
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)
• 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

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@nhrivers.org.

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