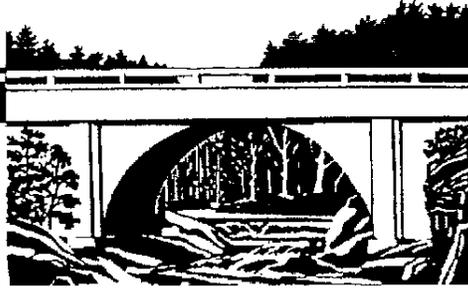


SUMMER NEWSLETTER 2011

**LAMPREY
RIVER**
Wild & Scenic



LAMPREY RIVER ADVISORY COMMITTEE

**NEWMARKET - DURHAM - LEE - EPPING
NEW HAMPSHIRE**
www.lampreyriver.org

New Stormwater Monitoring System Installed

Nutrients, such as nitrogen, are a significant problem for Great Bay. One big question about nutrients concerns how they flux or persist in the river following a storm event. Answering that question is difficult with sampling regimens that occur only monthly or even weekly. Wil Wolheim of the Water Systems Analysis Group at UNH is trying to solve the puzzle by using continuous sampling. The sampler tests for nitrogen, dissolved oxygen, pH, and a number of other parameters.



Wil Wolheim, right, and fellow researcher Richard Carey, assemble the sampler in preparation for deployment in the river.
Photo by Dick Lord

LRAC-Funded Weed Wrenches Available to Borrow

The Great Bay Estuarine Research Reserve in Stratham received a small grant in 2010 to create a lending library of tools that can be used to remove invasive weeds. The library is now complete and is ready to help individuals and groups remove these nuisance plants. To sign up or get more information simply contact <http://www.greatbay.org/programs/Tool-loan-program.htm>.

News from Epping: Getting in the Flow x 2

The 34th annual Epping Canoe Race again brought the community to the river to enjoy recreation, scenic views, and good company. The race day was overcast, but the water flowed crisply and cleanly. Enjoyment of the river as a treasured resource is part of LRAC's mission. The committee thanks the sponsors and participants who make the event so memorable.



photo by S. Petersen



photo by S. Petersen

As usual, the race began downstream of the Bunker Pond Dam at Mary Blair Park. Next year, however, the dam will be gone. The historic dam built to harness water power for the Folsom Mills is slated for removal. Water in the pond will be lowered slowly and demolition of the dam will commence. The dam, owned by the Town of Epping, was deemed unsafe and too costly to maintain. Although the dam will be removed, the mill foundations and sluiceway at the site will remain. Local volunteers are working to understand and consolidate the site's history and will be developing signs and other materials to help visitors appreciate the site.

Instream Flow Management Plan

The Lamprey is being studied as a pilot project for an "instream flow management" plan through the NH Rivers Management and Protection Program. The goal of the plan is to ensure that the river retains natural flow conditions. All rivers have natural variation in flow, with highest flows typical in spring, and low flows typical in summer. The plan attempts to assign numerical, lowest flow criteria that allow fish to survive. After a certain number of days below the lowest permissible flow, water will be released from Pawtuckaway Lake or Mendums Pond to provide a pulse of relief to the fish, similar to what might happen during a rain event during a drought. Following this pulse, the low flow clock will be reset and no more water will be artificially released until the critical period of low flow is again reached.

The gathering of data for the plan has taken several years and the plan was put up for review and public comments in May. The final plan should be completed and put into effect this summer. As part of the plan, significant water users, such as municipal water suppliers, are asked to conserve water during low flows. Comments are due by June 10, 2011. To view the draft report, please see <http://des.nh.gov/organization/divisions/water/wmb/rivers/instream/lamprey/water-management-plan.htm>.

Full Lamprey River Nomination



A 23.5 mile section of the Lamprey River is recognized by the federal government's Wild and Scenic Rivers Program. This section begins at the Bunker Pond Dam in Epping and ends at the confluence of the Piscassic River in Newmarket.

Since 1990, the river in the towns of Lee and Durham has also been recognized by the NH Rivers Management and Protection Program. The LRAC is thrilled to share that, as of June 2011, the entire Lamprey River and its major tributaries are now protected under this state program.



Through the tireless efforts of many volunteers and the unanimous support of all the river's towns, this nomination signals the beginning of a more regional management approach for the river and its surrounding lands. The LRAC will be expanded to include representatives from all the towns. These new committee members will be responsible for creating a bigger and better river management plan and for reviewing all projects that could affect the river's flow and special wildlife habitats. It is also a unique opportunity to coordinate town zoning regulations and focus conservation efforts that cross town lines. The water and wildlife of the Lamprey do not recognize town boundaries. With this nomination, the state and towns have also recognized this important reality.

Mussel Survey

Ethan Nedeau spent many hours last summer looking below the surface of the Lamprey in search of mussels. The Lamprey has traditionally been a safe haven for several rare species of fresh water mussels in New Hampshire, including the endangered brook floater.



Through significant effort, he did find several species. The bad news is that all species except for one, the eastern elliptio, are now extremely rare and isolated. The probability that they will breed and become re-established is very low.

Mussels often serve as indicators of environmental health and integrity. The loss of once-viable mussel populations is not happy news. From Ethan's observations in and along the river, the most obvious cause of the decline seems to be erosion, probably linked to the severe floods of the last few years. Sand and gravel carried in the water's flow physically scrape mussel shells and soft body parts, leaving the mussels in poor condition. Sediments that settle out of the water then bury the mussels. Eastern elliptio mussels are more tolerant of burial and adverse conditions, and their numbers have actually increased since the last survey in 1993-1994. The loss of so many mussel species is bad news, but one species is doing well and continues to perform the important task of filtering the Lamprey's water.

Vernal Pool Education

This past spring, LRAC education specialist Suzanne Petersen guided two environmental science classes from Oyster River High School to explore and document vernal pools at the Lubberland Creek Conservation parcel in Newmarket and at the Lamprey River Preserve in Durham. The data they collected will be shared with the NH Dept. of Environmental Services to help them monitor these important habitats. Students found fairy shrimp and the jelly egg masses of wood frogs, spotted salamanders, and blue spotted salamanders. All of these creatures breed only in the temporary pools that occur in spring but often dry up by summer. Vernal pools once dotted the landscape, but many have been lost or isolated by continuing human development. Understanding and protecting the vernal pools that remain are important pieces to protecting the larger landscape.



ORHS students lucked out with one of their vernal pool trips when all the wood frog eggs in the pool hatched simultaneously. The newly hatched tadpoles cluster around the egg mass for protection, food, and possibly warmth. The presence of wood frog eggs is one indicator that the pool is a vernal pool.

Photo by Jon Bromley

2011 Small Grant Recipients Announced

The LRAC is pleased to fund three small outreach grants this year, the third year of the program:

Cindy Jupp-Jones, a videographer with Breakaway Media and WMUR, has recorded footage of the Lamprey River watershed from a helicopter flight that occurred in May. She was accompanied by Dawn Genes of the Lamprey River Watershed Association. The material will be edited and narrated to provide municipalities with an overview of river and watershed issues. The primary use will be to effect change under the umbrella of the recent NH Rivers Management and Protection Program full river nomination and its required river management plan.

Deborah McNelly, recently retired fourth grade teacher and one of the authors of the original Lamprey River Curriculum, will provide some much needed updates and integrate technology. Originally published in 2000, the curriculum is strong on social studies but dated with appropriate scientific study. Deborah will also create an interactive web presence so that teachers can add material or share successful adaptations.

Bambi Miller of the Strafford County Conservation District will create a pilot program to educate landowners about their septic systems. Failed or under-performing systems contribute excess nitrogen to the river and Great Bay. Bambi will offer confidential site assessments to landowners and provide assistance to help them with their concerns.



Helping communities enjoy and protect the Lamprey through education, research, and resource protection.