

## **Newsletter Spring 2017**



### **Floodplains: Plainly Important to River Integrity**

Floodplains are defined as low-lying areas adjacent to rivers that are periodically flooded. In southern New Hampshire, floodplains occur up to 20 feet above the normal river height. They tend to be vegetated with wetland forest, dense shrubs, and open meadows. Oxbows (former river curves) and vernal pools are common along floodplains. Floodplain soils are usually composed of dark, fertile sediment interspersed with layers of sand.



Photo by Ben Kimball  
NH Division of Forest and Lands  
[www.nhdf.org](http://www.nhdf.org)

The photo at left of a floodplain along the Merrimack River in Concord clearly shows where flood water has left muck on the trees.



Cardinal flower at Mary Blair Park in Epping.

Photo by S. Petersen

The trees that thrive on floodplains have adapted to occasional excess water: red maples, silver maples, black ash, black cherry, swamp white oak, sycamore, river birch, muscle wood, and American elm. Some of the more noticeable understory plants are vibrant red cardinal flowers and various ferns. Because floodplains are wet and tend to be thickly vegetated, hiking through them can be difficult.

In their natural state, floodplains provide excellent habitat and travel corridors for both common and rare animals. For people, these areas provide important water cleansing services as well as water storage that help to lessen effects of flooding downstream. According to the NH Department of Environmental Services, the "Lamprey River ... contains the most extensive minor river floodplain forests of red maple/shrubs in the state."

Because of the rich soil and proximity to rivers, many floodplains have been subjected to clearing and filling for agriculture, residences, and other forms of development. As is often the case, such modifications of the natural environment come at a heavy cost, both to nature and to people. People who clear floodplains for agriculture often create conditions that increase the risk of major soil loss during floods. The soil is picked up and carried away, and then deposited elsewhere downstream or in Great Bay. Houses and other structures built in the floodplain are exposed to repeated flooding. That nice view of the river *from* the living room can easily become the nightmare of the river *in* the living room. The people who build in the floodplain pay a heavy price and so do the people who live downstream and must face even more water during floods.

The plain and simple truth is, floodplains are an important feature of the river and are worth leaving in a natural state.

### **Getting Past Obstacles**

For the past three summers (2014 -2016), the Lamprey Rivers Advisory Committee and the Lamprey River Watershed Association have documented woody obstacles to paddling between the Route 87 bridge in Epping and the Route 152 canoe launch in Lee. This section has eight blockages that force paddlers to portage up steep slopes covered by poison ivy, walk on private land, and then go back down steep slopes to the river. This section of the river has plenty of trees, is largely undeveloped, and can be tricky for novice paddlers.

Addressing these obstacles has been a challenge, philosophically as well as logistically. Wood in rivers is a natural condition and one that strongly benefits wildlife, especially fish. On the other hand, people who are able to connect safely to a river through paddling are often strong advocates for protecting the river in its natural state. Balancing these two valid arguments required a lot of time and discussion. In the end, and in consultation with Trout Unlimited and the NH Department of Environmental Services, a pilot plan was created to remove the minimal amount of wood to allow safe passage at base flow while preserving the important functions of wood in the water. Any wood removed during the paddling enhancement effort will be placed back in the water nearby and secured away from the main canoe passage.

Trout Unlimited will be managing the removal of wood that spans the river. Staff members will use their expertise to employ chain saws and pulley systems from boats or stand in the stream bed. The end goal is to remove enough wood to create a passage that is 6 feet wide and at least 3 inches deep at base flow of 100 cubic feet per second through the eight obstacles. At the end of the project, we hope to invite the public for a leisurely paddle and get its feedback. We estimate that canoe passage will remain for 5 or more years, unless the weather delivers unusually strong winds, floods, and more wood.

## Songbird Picnic- A Smidgen of Midges

As any fishing enthusiast knows, many aquatic insects hatch in spring and the fish are quick to respond to the bounty of food. Most birdwatchers might also be aware that these same aquatic insects are critically important to migratory birds which need to refuel during or after their long flight and to prepare for the rigors of a new nesting season. Aquatic insects such as midges are abundant earlier than most terrestrial insects. This early banquet along rivers and wetlands meets a need that cannot be met elsewhere in the habitat during this time.



adult male *Chironomus plumosus* wikipedia.org

Midges, also known as chironomids, are true flies and have one set of wings. Over 10,000 different species occur world-wide in almost any kind of water, from clean open water to small polluted puddles. The adults are similar in appearance to mosquitoes, but the males have fuzzy antennae. Most important for people, most species do not bite. In fact, many adult midges do not eat at all. In New Hampshire, midges are the first aquatic insects to emerge in the spring and are also the last to emerge in the fall. Whenever they emerge, they do so en masse. Adult midges are short-lived and have two important tasks: mate and lay eggs. Even though their lives are short, they are ecologically important as a good source of food for fish, amphibians, songbirds, and bats. Some are also essential pollinators.

Many people are aware that some songbirds eat insects, while others eat berries or seeds. What people might not know is that almost all songbird chicks, regardless of what the parents eat, need to consume insects to provide necessary proteins and fats. In fact, 96% of all songbird chicks require insects. A recent study by Cornell College of Agriculture and Life Sciences has also shown that fats from aquatic insects promote more rigorous growth and better immune responses than the same quantity of terrestrial insects in tree swallow chicks. (Cornelia W. Twining, Proceedings of the National Academy of Science, Sept. 27, 2016)



tree swallow Wikipedia.org

Songbirds everywhere are under enormous stress due to human development, loss of habitat, and climate change. One easy way to help the birds is to leave naturally vegetated areas (buffers) around water to provide birds with cover, protection, and easy access to a critical food source: aquatic insects.

## Tenth Annual Lamprey River Science Symposium

On January 9, 2017, UNH hosted a day-long opportunity for researchers to share their findings and confer with colleagues about the Lamprey River. It was also an opportunity for the public to learn about the river and express its concerns.

This year's topics covered water chemistry, drought, legislative updates, habitat restoration, and water supply. For a complete list of specific topics, please visit <http://wrrc.unh.edu/2017-lamprey-river-symposium>. Abstracts for most topics from 2017 are available at <http://www.lampreyriver.org/multi-media-research-2017-lamprey-symposium->. The <http://wrrc.unh.edu/lamprey-river-hydrologic-observatory> website also lists topics from previous years, including some topics that have links to research abstracts, as well as other Lamprey River related research.

## Small Grants Program

Do you have a BIG idea for a Small Grant? Once again, the Lamprey Rivers Advisory Committee is offering grants up to \$5000.00 to help you help us.

Are you curious about a particular person, place, or time along the river that you want to learn more about? Do you want to organize a pilot project that helps your neighbors and friends to conserve water, adopt-a-spot, repair an eroded river bank, or sponsor a Junior Rangers group? Use your imagination... how can you help share your enjoyment of nature, history, or recreation with others?

Application information and past projects are available at <http://www.lampreyriver.org/Owner/?task=Content&job=Edit&ID=344>.

A sample of past Small Grant projects...

community improvements:  
community trail plan  
septic system outreach  
weed removal tool  
lending library

videos:  
Lamprey River Volunteers  
Mary Blair Park  
Wiswall's Mills

group activities:  
Big Tree Tour  
Splash & Dash  
making rain barrels  
Art for Water  
watershed clean-up

studies:  
dams of the Lamprey  
bioinventory & stewardship  
canoeing enhancement