

## Newsletter Summer 2023



### **Recreation Alert: On-going Water Woes**

While most of the water in the Lamprey River and its tributaries meets Federal Clean Water Act criteria that make it safe for fishing and swimming, we are sad to report that the Lamprey River is facing three potentially serious water issues as we head into summer and prime recreation season.

One issue that most people have heard about is with the Epping Wastewater Treatment Facility. Recent issues have resulted in the sporadic release of partially treated sewage. ("Partially treated" means that solids are removed, chlorine is added to kill pathological bacteria, and then the water is dechlorinated so that it does not impair the river ecology downstream. Partially treated effluent can still have unacceptably high fecal bacteria.) The facility is currently under the control of NHDES personnel and according to the Wastewater Engineering Bureau at NHDES, "Epping is currently able to treat all influent wastewater to its WWTP, and anticipates it will be able to do so moving forward."

Whenever a release of partially treated effluent is anticipated, the Town of Durham is notified so it can curtail using the Lamprey River as a source of public drinking water. In addition, Epping DPW will post signs at all public access points on the Lamprey River in Raymond, Epping, Lee, Durham, and Newmarket and town secretaries will be notified so they can post updates on town websites and in town e-news.

The second issue is one we have noted before, that water from Moonlight Brook entering the Lamprey River at Schanda Park in Newmarket is heavily contaminated by human fecal bacteria. The cause seems to be a leak in a sewer line that runs under downtown Newmarket. Newmarket and NHDES are aware of the situation. The LRAC will continue funding monthly bacteria tests this summer and will start testing sites upstream to help isolate the source of the contamination.

The third issue is also in downtown Newmarket: a break in a sewage pipe that runs under the Lamprey River downstream of the Macallen Dam. Bubbling sewage was first detected on May 21, 2023. Newmarket has contracted with a local environmental engineering firm to replace the broken pipe, but the earliest this will happen is projected to be in mid-July 2023.

To date, the NH Department of Health and the NH Department of Environmental Services have not closed any segment(s) of the river due to fecal contamination, but normal summer or drought conditions might result in higher concentrations. If your

immune system is compromised or you have open sores on your skin, avoid contact with untreated water. Even if you are healthy, remember that while most of the Lamprey River is safe for fishing and swimming, it is not drinking water. Do not drink untreated water. If you get untreated water in your mouth, do not swallow; spit it out and then rinse with fresh water. Click for more tips on [staying safe with water recreation](https://www.lampreyriver.org/download_file/508).  
([https://www.lampreyriver.org/download\\_file/508](https://www.lampreyriver.org/download_file/508))

## River Herring Tales

While we don't yet know how many river herring utilized the Macallen Dam fish ladder or the Wiswall fish ladder in 2023, we do know that many human visitors were eager to celebrate Herring Aid on May 20. New Hampshire Fish and Game personnel were on hand to answer questions and assist folks who were curious and daring enough to touch river herring and sea lampreys. Little kids and big kids alike had a great time.



Photos by R.H. Lord

River herring also played a key role in the State of our Estuaries Conference on June 2. River herring were the stars in a saga of daunting challenges, perseverance, and hope as presenters provided a fish-eye view of New Hampshire's coastal streams and rivers, estuaries, and the Gulf of Maine, all necessary to the humble river herring. The challenges are many: over-fishing, warming ocean temperatures, water pollution, loss of nursery habitat, dams, changing food supplies... Despite these obstacles, river herring still do as nature intended: fight for their survival, reproduce, migrate between salt water and fresh water, and remind us humans that we are not alone in facing big ecological challenges. To read the river herring's story, see [SOOE-2023-Digital.pdf](https://stateofoureestuaries.org) ([stateofoureestuaries.org](https://stateofoureestuaries.org)), pages 10-20.

## Recreational-Lee Speaking

Three rivers pass through the town of Lee: the Lamprey River, the Little River, and the Oyster River. With all this river frontage, it might be easy to think that finding a suitable public place along a river to launch a kayak or canoe would be simple, but that is not the case. The Lamprey River Advisory Committee recognized this problem and offered the town a solution: The LRAC bought a small sliver of land above Wadleigh Falls on Route 152 in 2007 and immediately donated it to the town. In 2011, the LRAC paid to install a public canoe access on this site. In 2014, the LRAC paid to install a sign at the site. The site and the signage have served the community well, becoming a popular destination not only for paddlers wishing to paddle a few miles upstream, but also for fishermen and swimmers.

As we near the 12th anniversary of Lee's Public Canoe Access, the time has come to address some issues that have developed. Once again, the LRAC will assume responsibility for funding.



The newly installed Lee Public Canoe Access sign in 2014 Photo by R. H. Lord

The river itself has started to undermine the bottom granite step and the distance from the bottom step to the river bottom is now uncomfortably deep. Since all the other steps ultimately rest on the bottom step, keeping that bottom step secure is a primary concern. Erosion is also taking place adjacent to the granite steps: many people have been dragging their boats up and down the slope, resulting in trampled vegetation and channelized run-off from the parking lot and river bank. Invasive, unwanted plants have taken hold and are crowding out native, more desirable plants.

The Lee Conservation Commission began to tackle the invasive plant problem this spring. Before they began any work, they made sure that native vegetation was present on site and then created a best-practices plan to cut and remove glossy buckthorn. After cutting, they secured black plastic bags over the stumps to prevent regrowth. The plastic bags will remain on-site for a few years and then will be removed.

The LRAC has designed a plan to stabilize the lowest step against further erosion and install another granite step so that paddlers won't need to go chest-high in water when they step off the lowest step. The plan also includes installing wood water bars that will redirect stormwater away from the stairs while enabling paddlers to drag their boats without causing erosion. A permit to do this work has been granted by the NHDES and work will begin when the river's flow drops to its normal low later this summer. Public access to the site might be curtailed for a short period.

## Frogsong

Contributed by Dave Steinberg (UNH Department of Biological Sciences, LRAC rep)

For many New Englanders, spring and summer are set to the soundtrack of birdsong — the pleading cries of seagulls, the electronic utterances of bobolinks, the haunted wails of common loons. For me, a biologist who studies amphibians, these seasons of lengthened days move instead to the rhythm of frogsong.



wood frog, photo by Jennifer L. Purrenhage

With the first rains of spring, wood frogs, freshly and literally thawed from their long winter freezes, hurry to vernal pools for a couple weeks of explosive breeding. The urgent quacking of males, desperate to attract females, coincides with my early-spring impatience for increased daylight and the return of green.

Like the calling of the wood frogs, this impatience of mine soon vanishes, leaving behind the peacefulness of full-on spring and the comforting trills of American toads. As summer advances and the mercury expands, the country-twang of the green frog *gunk!* and the somnolent *jug-o-rum* of the bullfrog accompany my afternoon naps as I build up energy reserves for the inevitable arrival and impending exhaustion of the fall semester. In essence, the frogsong of New Hampshire's ten species of frogs reflects (or stimulates, I can't be sure) the turnings of my internal state for nearly half the year.

In a different and much more profound way, frogsong might also reflect the turnings of our shared external state, providing a glimpse of how the natural world is responding to global climate change. Over the past few years, my colleagues and I at UNH have begun to tune our professional ears to frogs with the hopes that we might 1) improve our understanding of what the future holds for our wildlife and the environments they inhabit and 2) invest our resources in conservation efforts that are likely to have the greatest impact.

In collaboration with scientists at 30 institutions and over 100 students at UNH, Dr. Jennifer Purrenhage (Dept. of Natural Resources and the Environment, UNH) and I have been monitoring the annual onset of wood frog calling at vernal pools from New Hampshire to Michigan to Missouri. Our goal is to determine whether and to what extent the timing of calls changes across years, particularly in the context of a warming planet. Are males beginning to call earlier in the season as temperatures rise from year to year? If so, what might that mean for the fate of wood frogs and their vernal pool homes?

For a related project, Dr. Laura Kloepper (Dept. of Biological Sciences, UNH) and I are currently working with a team of undergraduates to develop and test an algorithm that estimates the size of bullfrog populations using sound data collected with passive acoustic recording devices. The Lamprey River watershed is a focus of this study. This tool could be used to remotely monitor threatened species of frog (or any other vocalizing animal). Because we don't have a clear picture of exactly how wildlife will respond to a changing climate, such real-time data would allow us to effectively direct our limited resources toward the most vulnerable wildlife populations in New Hampshire.



*male (left) and female (right) bullfrog  
photo by Jennifer L. Purrenhage*

While it is unsettling to think about what the future might hold for frog populations and their sensitive wetlands, I am hopeful that, as we learn more, we will manage to leave our children with a world that remains filled to bursting with the magic of frogsong.

## Foundations of Discovery



mill remains at John Hatch Park, Durham

History is all around us along the Lamprey River. With over 100 former mills, the area is rich in places to explore. Some sites have huge granite blocks that seem to have come from nowhere. Many of these rocks were placed without the help of modern heavy equipment, but are still solidly in place. Most were moved using only oxen power, human ingenuity and basic tools: pulleys, levers, ramps, and cantilevers.

Get outside and explore!