Newsletter Summer 2021

Improvements at the Macallen Dam in Newmarket

Following two extreme floods in 2006 and 2009, dam engineers inspected the Macallen Dam in Newmarket and noted several safety deficiencies. Among these, analysis showed that the dam would be at high risk of failure in the event of another big flood. The main flaw was in the south wall the where water had severely eroded the lower foundation.

The Town of Newmarket owns the dam and it is responsible for expenses related to maintenance and liability. After reviewing the costs and benefits for the options, including the possibility of removing the dam entirely, voters chose to repair the dam. Townspeople also voted to make improvements to the flood gates on the north side that were in poor, but technically working, condition. Engineers drew up plans and the state granted construction permits. The drawdown of the dam impoundment began on September 1, 2020 and site work commenced shortly thereafter.

Members of the LRAC visited the site often and documented the progress of the repairs. Below are some photos from before and after repairs. We have also placed photographs of the process on www.LampreyRiver.org with a quick connection from the home page. You can see the improved dam for yourself where Route 108 crosses the Lamprey River in downtown Newmarket.

South wall of Macallen Dam before repairs.

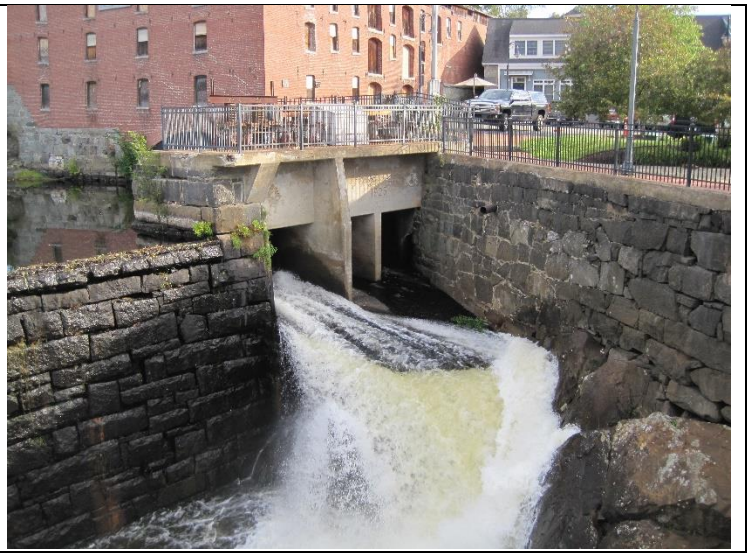
September 7, 2020: The dam is drawn down and the upstream side of the dam is exposed. Damage is visible along the vertical wall below the lawn. This wall was likely to collapse under the stress of another flood.

South wall of Macallen Dam after repairs.

Spring 2021: Water is again flowing over the top of the dam. The lighter colored concrete is all new and ready for the next flood. The wall overall was raised by about 3 feet. The darker, older concrete is the fish ladder.

The flood gate on the north side of Macallen Dam before repairs.

September 1, 2020: Water flows through the flood gate opened wide for the drawdown to enable repairs. The old gate allows water to flow through “stops” that are controlled manually. The manual controls are in the fenced-in area on top of the gate.



The new flood gate at Macallen Dam.

May 19, 2021: The manual controls are gone and water flows over, not through, the gate. The new flood gate is a metal sheet hinged at the bottom on the upstream side. It is supported from below by heavy-duty, air-filled pillows. When the flood gate needs to be opened, the pillows deflate and the gate lies flat to allow extra water to flow.

Lamprey River Watershed Protection Through the State of New Hampshire

The New Hampshire Rivers Management and Protection Program (RMPP) was enacted in 1988 to protect the state's most significant rivers or river segments. In 1990, the section of the Lamprey River that runs through Lee and Durham was among the first river segments designated into the RMPP. On June 6, 2011, the full length of the Lamprey and five of its major tributaries (Little, North, North Branch, Pawtuckaway, and Piscassic rivers) were added to the designation. Under the RMPP Lamprey River designation, 87.7 miles of rivers and approximately 212 square miles have extra protection. June 2021 marks the tenth anniversary of full watershed protection for the Lamprey River.

Some of the extra protection granted by the RMPP designation comes from state laws; shoreland protection around designated streams is more stringent. Certain activities (such as the siting of new landfills, construction of new dams, or inter-basin water transfers) are not permitted.

Other protections come from each designated river's local advisory committee. The Lamprey River Advisory Committee serves as the local advisory committee and it has four main duties under the RMPP:

- Advise the NHDES commissioner, the state-wide Rivers Management Advisory Committee, the municipalities through which the Designated River or segment flows, and the municipalities within tributary drainage

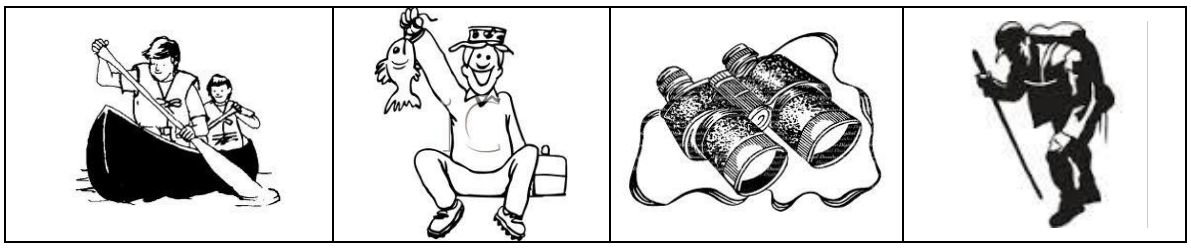
areas on matters pertaining to the management of the river or segment and tributary drainage areas.

- Consider and comment on any federal, state, or local governmental plans to approve license, fund or construct facilities that would alter the resource values and characteristics for which the river or segment is designated.
- Develop or assist in the development and adoption of local river corridor management plans. Municipal planning boards may adopt such plans as an adjunct to their town master plan.
- Report biennially to the Rivers Management Advisory Committee and the commissioner, and annually to municipalities on the status of compliance with federal and state laws and regulations, local ordinances, and plans relevant to the Designated River or segment, its corridor, and tributary drainage areas.

Through efforts of local citizens, the fourteen towns of the Lamprey River watershed unanimously supported the watershed nomination. Designation was debated by the state legislature and the governor signed the bill. Although nineteen rivers in New Hampshire are designated under the RMPP, only the Lamprey includes tributaries and takes a watershed approach. This was and is a first in New Hampshire: a recognition that water does not follow arbitrary human boundaries such as town or county lines. What happens along a river in one part of the watershed affects the river(s) in other towns. The Lamprey River Advisory Committee produced a management plan that tries to balance needs and protections across town lines. Its volunteers represent multiple towns and review projects with a holistic point of view.

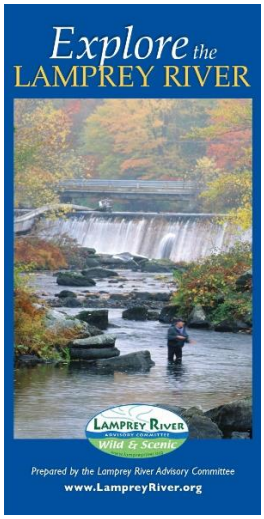
In addition to state protection, twenty-three miles of the main stem Lamprey River are protected under the National Wild and Scenic Rivers System. As author Margaret Mead noted, “Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.” The LRAC is always looking for new representatives. Please join us and become a river hero! Lamprey River: Join Us

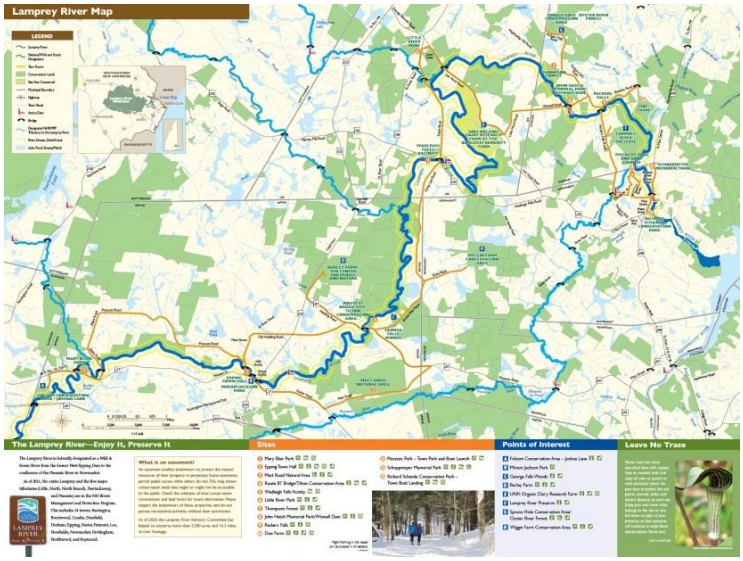
New Recreation and Paddling Access Maps Are Now Available



Our popular *Explore the Lamprey River Map and Guide* has been updated and is now available for free at most local libraries, town recreation departments, and

on-line. Updates include new paddling access points, more hiking trails, and new parks. You can also request a free copy to be mailed to your house. Please send your request to info@LampreyRiver.org and provide your mailing address.

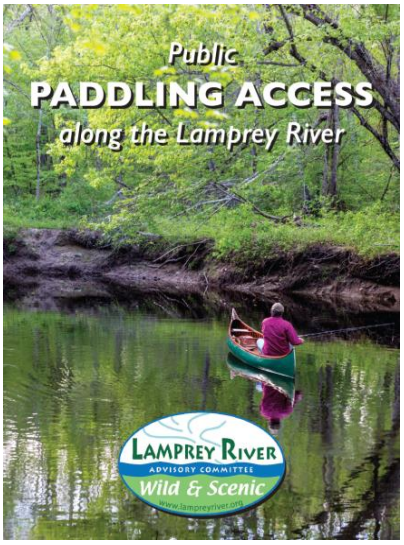




Summer 2020 offered local people more opportunity than usual to get out on the river with a canoe or kayak. Due to many requests for public access areas, we created a map to meet that need.

The map includes driving directions, GPS coordinates, notes about each site, and rental information where applicable.

Two versions of the map allow reading on-screen or easy printing from a home computer so you can take it with you. Links for both versions are available on the home page at www.LampreyRiver.org.



Life in the Really Slow Lane

The Lamprey River is fortunate to support all six of New Hampshire's native turtle species: Blanding's, musk, painted, snapping, spotted, and wood. Most people have seen a snapping turtle and many have seen a painted turtle soaking up the sun on a water-side log. Musk turtles are common, but since they rarely travel far from water, few people see them. The other three are, in fact, rare: Blanding's

turtles are listed in New Hampshire as endangered, spotted turtles are listed as threatened, and wood turtles are listed as species of concern.

Blanding's turtle
Photo by Jon Bromley

spotted turtle
Photo by John J. Mosesso,
http://images.nbii.gov/

wood turtle
Photo by Mike Jones,
http://www.mass.gov/

The main differences between common turtles and rare turtles relate to breeding and range. Common turtles can breed when they are a few years old and tend to lay many eggs. Their habitat requirements are often compatible with human presence and land use. For rare turtles, the odds are increasingly stacked against them.

The three rare turtle species cannot breed until they are well into their mid-teen years and they lay fewer eggs. Their ranges are extensive and they make use of several different kinds of habitat to meet their seasonal needs. They need to make use of places that people often develop, such as old fields and vernal pools. Their interactions with people often occur when they try to cross roads as they travel across the landscape and females of egg-laying age are most at risk. They are also negatively affected by animals that thrive near humans: skunks, raccoons, and foxes. These animals are opportunists and take advantage of easy meals, such as turtle eggs buried in the sand.

Before humans developed the land to suit their own needs, the now-rare turtles were common and thrived. Despite the late onset of breeding and fewer eggs per clutch, they could live and breed to a very old age. Their extensive range was a hedge against one habitat's being unsuitable or the loss of a nest in any given year. Currently, their strategy of slow and steady, far and wide is putting them at risk. The turtles cannot change their strategy, but we humans can help ensure their future by recognizing and protecting the resources they need. Support efforts to conserve large tracts of land, especially those that have a variety of wetlands and uplands. If possible, help turtles crossing the road to reach the side to which they are headed. Always report sightings of rare turtles, living or dead, to NH Fish and Game's Reptile and Amphibian Reporting Program at RAARP Reporting | Nongame | New Hampshire Fish and Game Department (state.nh.us) so that they can help to ensure the turtles' continued presence.

All the thoughts of a turtle are turtle. Ralph Waldo Emerson