



**Lamprey River Advisory Committee
Annual Report FY 2024 (Oct. 1, 2023 - Sept. 30, 2024)**

About the Committee:

The Lamprey River Advisory Committee (LRAC) is comprised of volunteer representatives nominated by the towns of the Lamprey River watershed and appointed by the New Hampshire Department of Environmental Services (NHDES). These volunteers serve as liaisons to NHDES and have two main duties: 1) Create a river management plan that protects or enhances the values for which the river was designated for extra protection under the NH Rivers Management and Protection Program under RSA 483 and 2) Review and comment on development or redevelopment project applications for the quarter mile corridor that parallels each side of the main stem Lamprey River and five designated tributaries and that require a state permit such as a wetlands, shoreland, or alteration of terrain permit.

The LRAC also serves as a partner to the National Park Service to protect and enhance the “outstandingly remarkable values” for which a 23-mile segment of the main stem Lamprey River was designated by the U.S. Congress as a National Wild and Scenic River. As part of this partnership, the LRAC receives funding from the National Park Service (CFDA # 15.962 National Wild and Scenic Rivers System) to support its activities.

For more information about the Lamprey River and the LRAC, please visit www.LampreyRiver.org.

Community Engagement

Newmarket Willey House Park and Public Engagement Community Grant

Early in the year, the Newmarket Arts, Culture, and Tourism Commission submitted an application for a community grant to help fund a mural at the newly-acquired Willey House Pocket Park downtown on Main Street. There was great enthusiasm from both parties for this project, but then it came to light that the Arts Commission and Town of Newmarket had not yet acquired the necessary easement. With a lot of creative back-and-forth, the grant was amended to focus more on community engagement, with a smaller percentage of funding going toward the mural.

Over the summer, the Newmarket Arts, Culture & Tourism Commission invited Newmarket residents to participate in a new community arts project. Interweave© was designed and facilitated by artists Christine Destremes and Susan Lunt and was designed to celebrate the unique community, culture, and environment of Newmarket. The creative focus was on the significance of the Lamprey River. People of all ages and skill levels gathered to consider how the river has influenced their lives and what they could do to help protect this valuable resource. They wrote about it and then created these looms, symbols of interconnectedness.



Sample Interweave© looms

In addition to the Interweave© looms, Willey House Park grew and evolved into much more than a mural. The park now includes a mini-gallery that houses a rotating assemblage of town and river-themed art and the outside is painted with river scenes. In the coming months, benches and a community chess board will be installed at the park.

The final mural was framed by photos taken by community members that highlight what they love about Newmarket and the Lamprey River. The mural itself is highly detailed and also includes hidden eels, fish, pollinators, and river wildlife. During the mural unveiling ceremony, the community gathered to hear a poem inspired by Interweave©, see local ballet dancers dancing to Indigenous music, and highlights of the Interweave© project that will be placed in several prominent locations in town. What started as a fairly simple mural project produced so much more.



The Willey House Park mural, unveiled September 28, 2024

History and Archaeology

After trying for many years to acknowledge the significance of Wadleigh Falls for both Indigenous presence and Wadley Village mill history, a community grant project with a true partnership between the Lee Historical Society and the LRAC has finally succeeded. Members of both groups worked together to engage experts, conduct research, and design two panels for a kiosk that will be placed at the Lee Public Canoe Access in the spring of 2025. The Indigenous panel in particular addresses a serious deficiency in LRAC historical material.

Indigenous Peoples at the Falls

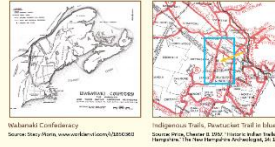
The Falls as an Important Indigenous Site

Kwai Nid8bak (Hello, Friends)

Indigenous peoples have been stewards of this land and the Lamprey (Nid88no) River at the falls for countless generations. 8,000 years before European settlers came to this area, Alenaki people came seasonally to make a large fishing camp at "Washucke in N'8hakiona," which means "Hilly Place in our Homeland" (Historic Indian Trail of New Hampshire by Chester R. Price (1967). Additional research shows this place might also have been known as Pooosookake or Pooosooko, the "Great Dip Place." The map at right shows the ancient Pawtucket Trail (ca. 1659) which made an almost straight line from Lee's northern border to its southern border and was part of an extensive regional trade network.

This site comprised an area of about 6 square miles located between the two branches of the Lamprey River. This area would later be called Wadley's Village.

Archaeologists know that the earliest Alenaki people here made dugout canoes and stone tools such as fishing sinkers, hammerstones, scrapers, and pebbles. In addition to netting the abundant fish, such as salmon (M'8aknawg) and river herring (A'8nawg) from the river, they also hunted local game and gathered many different plants from the land. These resources were used for food, medicine, and other necessities.



The Importance of Rivers

Rivers were central to the lives of the earliest people who lived here. Rivers, especially at waterfalls, provided the people with an abundance of fish which could be caught in nets. Traveled by water was an easy way to get around and move supplies.



Left: Modern use of snagging of the traditional snagging technique used for snagging a dog fish canoe. Right: Traditional net snagging technique. Historic snagging post located at the Cornwall Road at the Newmarket-Gardner Bridge.

Tools

The earliest people here did not have access to metals, so many tools were made of stone, wood and bone.



This side-mounted stone fishing flume was found in this area. These would be used to the bottom of the net to increase the fish trapping area of the net when deployed in the river's current. Actual length 3'.

Food

In addition to meat, Indigenous people gathered berries, root vegetables, nuts, and mushrooms. Food was often preserved in containers made of white birch bark which kept the food free of bacteria and other microbes.



snapping turtle (Aligandit) According to archaeological studies, this site is unusual in that snapping turtles and tortricid larvae seem to have been a common source of food prior to colonization. Source: Nancy, Not Fish and Game Department.

Medicinal Plants

Dr. Egerly of the Wadley Village mill era was not the first to make use of local plants to use as medicines. Knowledge of the medicinal properties of local plants was around thousands of years ago and continues to be practiced and honed to this day.



sweet fern (Mawot) This fern-growing herb (not an actual fern) can be used to treat headaches, fever, vomiting, rheumatism, and toothaches. Source: Nancy, Not Fish and Game Department.



slippery elm (8naw8hagan) This versatile plant can help with digestive issues, inflammation, skin wounds, and sore throats. Source: Nancy, Not Fish and Game Department.

Timeline



Terminology

Kwai	welcome, hello
Kwai Nid8bak	welcome (hello) friends
Paw8hagan	slippery elm, Elmus fish, also slippery elm tree bark
Aligandit	snapping turtle
Saw8no, Mawot	rubus/mulberry

We gratefully acknowledge assistance and consultation from the Cornwall Board of the P'twosook Alenaki People and the Lac Umbagog and Indigenous Interpretive Group in creating this panel.

The Mills at Wadleigh Falls

The Power of the Lamprey River

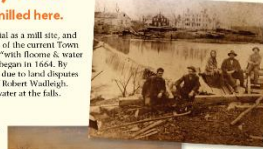
Lumber, food, textiles, and herbals were all milled here.

When the Europeans arrived, this location was coveted for its potential as a mill site, and as such, became the first permanently settled area within the bounds of the current Town of Lee in 1657. Walter Bantouk and Robert Wadleigh built a sawmill "with floors & water wheel." The agreed cost of the mill was 80 pounds and construction began in 1664. By Wadleigh's own accounts, it took 4 years to get the mill in operation due to land disputes and other obstacles. This mill eventually became the sole property of Robert Wadleigh. This led to a period of 257 years of commercial activity powered by water at the falls.

- As the trees were cleared and cut into boards, the fields began to produce food crops. New mill owners arrived and built their homes and mills next to the river. Wadley's Falls Village continued to grow.
 - On the south side of the falls: Glidden's grist mill and tannery with bark mill and Towle's wooden pulp and swirl factory.
 - On the north side: Johnson's gristmill and filling mill; Willson's tannery and tan yard, gristmill and woolen/filling mill; Dr. Egerly's gristmill, herbal drug mill, and cider mill; and the Norton Leatherboard Factory.
- At the turn of the 19th century, Wadley's Falls Village was the largest settlement in Lee. The mills employed some 40 individuals and additional services included blacksmith shops, stores, a post office, and an inn. A four-horse stagecoach connecting Newmarket and Northwood came through the village daily. In 1813, the mill owners were able to transport their products further away with the introduction of the railroad (currently Route 125). The last surviving mill, the Norton Leatherboard Factory, burned in 1921 and ended the mill era in Lee.
- Today, the former Edson, Wilson, and Glidden houses are occupied by new residents. While the people and character of this area change over time, the Lamprey River continues to flow as it has for millennia, connecting the past, present, and future.

The Glidden-Towle-Egerly House

This house is located at the southeast corner of Wadleigh Falls Road and Campground Road. The two-story Georgian style Glidden Homestead (c.1789) became Wadley's Falls Post Office from 1838 to 1902. Gardner Towle had a prominent, three-story Federal-style addition (c.1838) added to the Glidden house, including a ballroom on the third floor. Dr. Egerly bought the property in 1867 and converted the house to an inn for travelers on the stagecoach route from Newmarket to Northwood. In 2010, after the house was nearly destroyed by an arsonist, it was placed on the NH State Register of Historic Places.



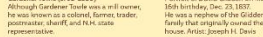
Wadley Falls Dam, circa 1890. Members of the Egerly family pose at the dam following a flood. Note the mill debris on the ground. Floods and fire posed significant threats to residents and businesses all along the river.



Wadleigh Falls Village, circa 1864. Old sawmill and dam (left), tannery, used by permission of Andrew and Barbara Wadleigh, 2016.

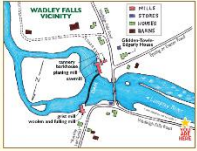


Glidden-Towle-Egerly House, 1867. Gardner Towle (1796-1880). Although Gardner Towle was a mill owner, he was known as a colored, former, trader, postmaster, sheriff, and F&C store representative.



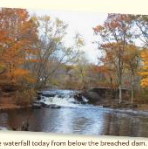
Portrait of David Glidden on his 10th birthday, Dec. 23, 1807. He was a nephew of the Glidden family that originally owned the house. Artist: Joseph H. Davis.

Featured Sites Circa 1850



- #### Mill Descriptions
- Sawmill cut trees into lumber and included a woodworking shop.
 - Planing mill turned rough-cut timber into flat lumber with square edges.
 - Custom mill ground grains and corn into flour.
 - Tannery, including harkness, curd and dyed leather to be used for harnesses, saddles, and shoes.
 - Leatherboard factory made leather and fiber boards for beds and insoles for shoes.
 - Woolen mill included a carding machine (which lined up the wool fibers to make them easier to spin) and a fulling machine (to tighten and clean woven cloth).
 - Swift mill made devices that held yarn for knitting and crocheting.

Lamprey River Watershed



The waterfall today from below the breached dam. The dam.

Egerly Herbals

This bottle of essential oil, "Essence of Peppermint," from I. Egerly Wadley's Falls, was found in the well of the Egerly house during renovation work in the 1980s. It was used as one of the ingredients to make a tincture to treat cholera and as a topical rub for sore muscles. Dr. Isaac Egerly owned a historical drug mill from the 1870s through the early 1900s. His herbal products at first were sold locally and later were shipped by stagecoach and then rail to reach broader markets.

Long before the Egerly family began to make herbal tinctures, Indigenous people were prominent in the care of local plants. Dr. Egerly probably made use of this Indigenous knowledge.

Land Protection

As of October 2023, the LRAC has contributed \$5,169,557 to provide permanent protection for 3,839 acres and 19.1 miles of river frontage. These project costs total \$22,472,064, meaning that the LRAC has provided 23% of total costs.

Project Review

By statute, local river advisory committees are asked to review proposed projects that fall within 1500 feet of a designated river and send their comments to NHDES. The committee cannot approve or deny permits, but NHDES must consider their comments. The LRAC typically reviews about a dozen projects for development or redevelopment along the mainstem Lamprey River and the tributaries. This year was exceptionally busy: 23 projects in 7 towns.

Recreation

Discussions that began last year regarding a Stream Team to monitor river conditions from the water were used to create a guide for paddlers to help them identify potential issues and to whom they should report. The actual guide is condensed, but each topic area was or will be detailed in the LRAC's quarterly newsletters.

Following is a sample of the guide:

LAMPREY RIVER STREAM TEAM: Key Issues to Report

Most of the land along the Lamprey River and its tributaries is under private ownership. While you have the right to be on or in the water, you will be trespassing if you go onto private land without permission. Do not put yourself in danger by engaging in unlawful detective work for a better photo or to confront a landowner. The best way to handle issues is to provide evidence and let authorized town or state officials take it from there.

In most cases, reporting is easy:

1. Take a photo with GPS and date enabled.
2. Record any pertinent notes to accompany the issue.
3. Contact the authority listed for the issue.

issue	what to look for	for more details	report to
illegal dumping	lawn clippings or yard waste next to river or dumped in river	Section 482-A:3 Excavating and Dredging Permit; Certain Exemptions. (state.nh.us)	town code enforcement officer
unpermitted clearing	** logging, freshly cut trees ** lawn or greenhouse plants right next to river ** bare soil	swgpa-summary.pdf (nh.gov)	town code enforcement officer

The LRAC was pleased to award a community grant to the Newmarket Conservation Commission to make improvements at the **Old Lee Class A Trail**.

The Old Lee Class A Trail, formerly the Old Lee Class VI Road, is a popular entry way to SELT's Piscassic Greenway conservation area. The trail needed repairs and upgrades to protect the trail corridor, prevent runoff into the river, and improve safety for visitors.

Major drainage problems were addressed by adding two armored rock dips to move water under and across the trail as well as several other swales to direct water away. The trail was then crowned to help shed water during rain events. These improvements will greatly reduce erosion and provide a safer trail, especially during muddy conditions.

In addition, a second railing was installed to improve safety of the bridge. A 11" x 17" interpretive sign (left) was designed and placed at the bridge.

The Piscassic River

The Piscassic River is a major tributary of the Lamprey River, meandering 15 miles from its beginning in the northeast corner of Fremont, through Brentwood, Epping, Newfields, then Newmarket, where it flows into the Wild & Scenic Lamprey River.

The Piscassic River is the only waterway within the entire Lamprey River watershed classified as Class A—the highest water quality standard in New Hampshire.

Maintaining natural vegetated river corridors throughout the Piscassic River watershed—or any watershed—helps maintain healthy land and water for people and nature.



The beautiful, native cardinal flower grows along the shoreline of the Piscassic River. Photo by Ellen Snyder

Take only photos. Leave only footprints.



Funding for this sign and improvements to Old Lee Class A Trail were provided by the National Park Service under CFDA 15.962 - National Wild and Scenic Rivers System.

Lee Public Canoe Access Improvements

The Committee was happy to provide funding and expertise to the Town of Lee for improvements at the Public Canoe Access on Route 152. Paddlers had noted for several years that the granite stairs leading from the parking area to the water had a deep drop-off into the river. Upon closer examination, a large void was discovered below the bottom step. The parking area was rutted and had large mud puddles in wet weather. The area to the left of the stairs was eroding, both from channelized runoff from the parking area and from boats being dragged up and down the slope.

LRAC Chair Grace Levergood, PE, designed the needed improvements and secured the required permit from NHDES in 2023. Due to the unusually high amount of rain last year, the project had to be delayed. In October of this year, the work was completed under her supervision.



The void below the original bottom step was filled with gravel and compacted. The newly placed granite slab was then placed and secured in the water.



Erosion issues should be managed by newly placed water bars that direct stormwater into the adjacent bushes. After grass is established in this area, paddlers can drag their boats without causing disruption to the soil.

In addition to the work pictured above, the parking area was regraded and packed to eliminate puddling and channelized stormwater run-off.

Wiggin Farm Conservation Area Bridge and Boardwalk Replacement Grant, Newmarket

Access to the Wiggin Farm Conservation Area begins by crossing a simple foot bridge from the parking area to the start of the 1.5-mile trail. This bridge, built by an Eagle Scout around 2003, has deteriorated and needs to be replaced by a bridge that better accommodates human safety and is more sustainable ecologically.

The Newmarket Conservation Commission wishes to replace the bridge and short boardwalk, and replace the existing support with helical piers. The LRAC supports this proposal and awarded a community grant to enable this work.

Acquiring the Wetlands Permit By Notification took much longer than anticipated (November), so the decision was made to delay work until spring 2025.

Water Resources

On-going Bacterial Tracking, Problems in Newmarket's Moonlight Brook

This was the fourth year that the LRAC has funded targeted bacterial tracking research at several recreational areas along the main stem Lamprey River. This research included monthly samples to determine levels of bacterial contamination and it also identified the species of animal(s) that contributes to the overall bacteria, such as human, dog, horse, or waterfowl.

The Moonlight Brook sampling site at Schanda Park in Newmarket continued to be seriously contaminated with human fecal bacteria. To help isolate the location or cause of this contamination, the LRAC funded expanded bacterial assessments this year that included 5 sites upstream of Schanda Park. The final report for 2024 should be available in December. Results will be shared with all towns in the Lamprey River watershed and summarized in the LRAC spring newsletter.

Town of Newmarket Sewer Lining

The Town of Newmarket has identified many sewer deficiencies and was awarded a grant for approximately \$1 million from outside sources to help address leaking sewer lines. These issues will be addressed mostly through the installation of impervious pipe liners, with little or no need for surface disturbance. We look forward to next year's bacterial tracking to see if there is any improvement at Moonlight Brook.

Sleepy Hollow Cooperative Sewer Line Improvements

In January, the LRAC was asked to submit a letter of support for a proposed grant through American Rescue Plan Act that would upgrade the sewer line for this private neighborhood in the Moonlight Brook watershed.

Per NHDES, "in August 2023, the Governor and Council approved awarding the Cooperative ARPA grant funding. Additional ARPA grant funds were available and awarded to the Cooperative in October 2024 as well.

This project fulfilled its requirement for an environmental review in May 2024, which gave the ok to the Cooperative to move forward with the construction phase of the project. Your letter was helpful towards this process.

The project was able to award a construction contract to a Contractor back in August 2024 initiating construction in September. The project is progressing nicely!"

Newmarket Force-main Sewer under the Lamprey River

Following the force-main sewer break in May 2023, the Town of Newmarket commissioned an overall evaluation of the 55-year old line. It was found to be in poor condition and could fail again at any time. The LRAC submitted a letter of support for

Congressionally Directed Spending that the town requested. As of December 2024, Newmarket is still waiting to hear about the application; it is currently stuck in the US Congress.

Epping Waste Water Treatment Facility Issues

Over the past few years, the Epping Wastewater Treatment Facility has had problems that have resulted in the release of partially treated sewage, especially in colder weather. The town is working diligently to come into compliance with its wastewater permit, including ordering new filters and associated equipment, as well as building a temporary shelter to cover the sewage lagoons to keep them warmer against the cold. Beginning in the summer of 2023, the wastewater treatment facility has stayed in compliance with its permit and no discharges of partially treated sewage have been made.

Wildlife and Ecology

American Toad Novel Pathogen

This spring, several American toads were found near the river in Durham with significant skin lesions that were unlike anything ever seen. LRAC's resident herpetologist, David Steinberg, worked with veterinary pathology colleagues at UNH to apply for funds from the LRAC which would jump-start research over two years. The first year's funding went to characterize the pathogen. Transmission electron microscopy was used to indicate the location of the pathogen in the host (intracellular versus extracellular) as well as the morphology of the pathogen. Metabarcoding through extracted DNA was used to determine the exact species of pathogen. Shotgun metagenomics used the best quality long-fragment DNA to achieve a high quality long-read genome of the pathogen. Together, these techniques enabled the researchers to determine whether individual toads were infected by a single species of organism. These lab-based results showed that the pathogen was, indeed, new. The closest species appears to be a pathogen that normally infects fish. Initial field work was also undertaken to assess how prevalent the lesions were and if other species were being affected. Along the Lamprey, most toads were found in Durham, but colleagues also reported sightings in a few scattered places in New Hampshire and Maine.

Funding for year two in 2025 will enable expanded field work both for additional toads and other species. While this preliminary work is being supported by the LRAC, the researchers have applied for much more significant funding through the Morris Animal Foundation.

Lee Public Canoe Access Ecology Improvements

The Lee Conservation Commission has long hoped to remove invasive glossy buckthorn and encourage native plants at this popular recreational site. Work began in earnest this spring with teams cutting buckthorn shrubs and bagging the stumps to prevent regrowth. In addition to the high number of glossy buckthorn shrubs, the site was covered in poison ivy. To help volunteers safely access the site, the Lee Conservation Commission requested and received a community grant to pay for professional hand-removal of poison ivy. Over three pulling sessions, the site is now largely free of poison ivy.

Doe Farm Forest Management Plan Update

The Town of Durham owns and manages Doe Farm, a conservation area with significant frontage along the Lamprey River. The Town has initiated efforts to hire New Hampshire licensed forester Charles Moreno to prepare a forest stewardship plan for the property. The most recent forest management plan was written more than 20 years and was last updated in 2015. It no longer reflects the current natural conditions, Town stewardship goals, stewardship practices, and understanding of ecology and climate science.

The Trustees of the Trust Fund (TTF) wish to update the forest stewardship plan to guide the Town and help inform the public about managing the property in a way that is sustainable, enhances forest health, ensures water quality, promotes native vegetation, and provides passive outdoor recreation opportunities in the context of climate change resiliency and current best management practices.

As of December 2024, almost all trees have been inventoried with help from UNH students. This is a two-year project, so most of the actual plan updates will come in 2025.

Miscellaneous

The following were active representatives for all or part of 2024:

Barrington	John Wallace
Durham	Dick Lord, David Steinberg
Epping	Lauren Kaehler
Lee	Jim Brady, Dennis Regan
Newmarket	Ben Buckley, Jerry Martin, Patrick Reynolds
Northwood	Grace Levergood
Nottingham	Dan Davis
Raymond	Therese Thompson