



Discover Freshwater Mussels: Hidden Treasures in our Lakes



Have you seen a freshwater mussel in your favorite lake? Several summers ago, a young NH LAKES member, upon finding her first-ever mussel in the lake, asked, as best she could, “What, this?!”

What are freshwater mussels?

Freshwater mussels are one of New Hampshire’s most hidden lake creatures. These animals live burrowed in the sediment or attached to hard surfaces, such as rocks, on the bottom of waterbodies. They constantly suck in water, filtering it through their fine gills, getting nourishment from microscopic plants and animals and obtaining oxygen.

Where are freshwater mussels found?

The United States houses the most diverse freshwater mussel population in the world. Nearly 300 species live in this country—approximately one-third of the estimated 1,000 species found worldwide. New Hampshire is home to at least 10 different species alone. Mussels live 10 to 15 years on average and researchers report that some live up to 100 years!

What do they look like?

Mussels have two hard shells that are hinged together and serve as a house protecting the body of the mussel from predators. As the mussel body grows, the shells grow too, so it is never homeless. Their shells range in size, shape, color, and texture. Mussels don’t move much, but they do have a muscle (referred to as a ‘muscular foot’) that helps them anchor in place or dig into the sediment if they are disturbed by floods or droughts. The insides of their shells are “pearly.” Some mussels are small (a full-



Freshwater mussel shells.

grown lilliput mussel will be 1.5 inches long) while some can become quite large (a full-grown washboard mussel will be 11 inches long and could weigh up to 5 pounds).

Where do they come from?

Mussels have a very unusual life-cycle, leaving it up to luck to reproduce. Eggs inside a female mussel are fertilized when she siphons in sperm floating in the water from a male mussel living upstream. The female carries the fertilized eggs in pouches called gills until they develop into larvae. She then sets the larvae free into the water where they must find a fish to attach to—finding a fish requires a tremendous amount of luck since mussels have no eyes! Once attached to their host fish, the larvae make something like a cocoon. After hitching a ride on the fish for many weeks, a very tiny mussel is formed. Once this stage is finally reached, the mussel lets go and lands on the bottom of the lake, pond, river or stream where it will continue to grow into adulthood.

Why are they important?

Freshwater mussels have been and will continue to be important for a diverse number of reasons.

- Native Americans used mussels as a food source. However, it is not recommended that people eat freshwater mussels these days due to pollution concerns. (Since mussels are long-lived filter feeders, they have the unfortunate ability to concentrate pollutants in their bodies which can harm humans.)
- Historically, humans have used freshwater mussel shells as components in jewelry and tools. Today, their shells are used in the freshwater pearl industry.
- They are an important component of the aquatic food chain, serving as a favorite food of otters, raccoons, muskrats, and some birds.
- They filter debris out of the water, making the water clearer and healthier for other aquatic life, and humans!
- They are an excellent environmental indicator species. Since they are particularly sensitive to pollutants, temperature, and water level, the presence of mussels in a lake, pond, river or stream, can indicate that the waterbody is healthy. A sudden decline in a mussel population can indicate a water quality problem.

Why are they disappearing?

It is estimated that approximately 70 percent of the freshwater mussels in the United States are extinct, endangered, or in need of special protection. In New Hampshire, at least two freshwater mussel species are threatened or endangered. Freshwater mussels may be disappearing for several reasons.

- One reason could be the industrial use of freshwater mussel shells. In the late 1800s and early 1900s, due to their “pearly” insides, the shells were used to make buttons. (In the 1940s, the button industry started using plastic instead of freshwater mussel shells to make buttons.) Today, freshwater mussel shells harvested in the United States are used to make pearls overseas.
- The environment where they live may be changing and becoming less healthy. Pollutants, such as fertilizer, oil, and toxic chemicals, and soil flowing off the landscape into waterbodies, may be negatively affecting the ability of mussels to reproduce and may even be killing them.
- Predation by invasive species, including Asian clams and zebra mussels, may be reducing the nationwide population.
- The impounding of water behind dams and fluctuating water levels may be affecting the ability of mussels to filter water.
- Dredging (the removal of the sand, gravel, and rocks on stream and lake bottoms) may be removing mussels from the water—they can’t survive on land!

What you can do!

There are many simple things you can do to help protect freshwater mussels.

- Keep or plant native vegetation along the shoreline of lakes, ponds, rivers and streams. Shoreland vegetation will help reduce the amount of pollution flowing into waterbodies by soaking up runoff water and trapping eroded soil. Vegetated shorelines will also help keep the natural vegetation in the lake healthy which will help protect the fish the mussels rely on to reproduce.
- Operate your boat at slow speeds in shallow water. This will help prevent stirring up the lake bottom, keeping the water clearer and allowing mussel gills to stay clean and function properly.
- Refrain from using fertilizers and pesticides near the water. This will minimize the potential for pollutants to build up in the mussel bodies.
- Always removing hitchhiking plant fragments on your boat before entering and after leaving a waterbody. This will reduce the potential for invading exotic species, including zebra mussels and Asian clams, to feed on freshwater mussels.

What we could lose...

According to the U.S. Fish and Wildlife Service, “If we lose our freshwater mussels, we lose more than a biological legacy unmatched in the world. We lose part of our cultural heritage, we lose an economic resource, and we lose an environmental health and maintenance warning system.”

Here at NH LAKES we also think we would lose something really exciting for our children, grandchildren, and great-grandchildren to discover.

NH LAKES is the only statewide, member-supported nonprofit organization working to keep New Hampshire’s lakes clean and healthy, now and in the future. The organization works with partners, promotes clean water policies and responsible use, and inspires the public to care for our lakes. For information, visit www.nhlakes.org, email info@nhlakes.org, or call 603.226.0299.

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