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VLMP NEWSLETTER

TEAM
KENTUCKY
ENERGY AND
ENVIRONMENT CABINET
Division of Water



Kentucky's Mussel Species

Mussels, while often unseen, are a major player in Kentucky's freshwater ecosystems. These mollusks, distant relatives of snails, burrow into or sit on the bottom of rivers and streams. They open their bivalve shells to filter-feed, pumping water over their gills.

These gills are covered in a sticky substance that traps plankton and other food particles. This helps reduce contaminants and excess sediments.



The Washboard

The largest mussel species in Kentucky is *Megaloniais nervosa*, commonly referred to as the washboard. This large mussel species gets its common name from the ripples along its shell, which resemble the surface of a washboard.



Mussels as Food

Mussels are a major food source for the North American river otter (*Lontra canadensis*). These clever mammals have been observed using rocks to break the hard shells of mussels to get at the soft parts inside.

Pearl Buttons

Mussels in the United States have served as a source of "pearl buttons" or buttons made from mussel shells, for decades. The practice originally began in 1887 when German button maker John F. Boepple immigrated to Muscatine, Iowa. The button maker saw the array of beautiful mussel shells found in the Mississippi River and began to produce buttons from harvested shells. At the height of Muscatine's industry, they were collecting 3,500 tons of mussels and producing 37% of the world's buttons ever year. In 1912, Boepple passed away from a blood infection caused by a cut on his foot. It is thought this cut came from a broken mussel shell. The Muscatine Button Co. closed in 2024 due to competition from plastic button producers and issues related to overharvesting.



Iowa History Daily: July 23 -
Birth of John F. Boepple,
Button Man of Muscatine [John F. Boepple | Visit Muscatine - Official Web site](#)

To learn More:

<https://eec.ky.gov/Environmental-Protection/Water/Outreach/Pages/VLMP.aspx>

JoAnn Palmer joann.palmer@ky.gov
502-330-1748

A *Lampsilis* mussel mimics a bottom-dwelling darter fish.



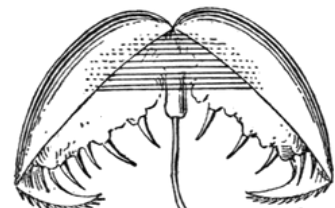
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Fish-mimicking Mussels

Lampsilis mussels in Kentucky have an interesting way of reproducing. Pregnant females have a lure on their mantle, which resembles a fish. The wiggling lure invites an attack from a larger fish. Once the lure is bitten, the mussel releases a cloud of parasitic young. These larvae, known as glochidia, attach to the predatory fish's gills. After attachment, the glochidia feed on blood until reaching a certain size. After this, they drop off and begin a filter-feeding lifestyle. This rarely causes significant harm to the host fish.



By Edward Step (1855-1931) - *Step, E. Shell-life: an introduction to the British Mollusca.* - London, New York: F. Warne & Co. (1901), page 29, <https://archive.org/details/shelllifeintrodu00stepiala/exported-from-the-pdf-file-in-600-dpi-Public-Domain,https://commons.wikimedia.org/w/index.php?curid=4890559>

Glochidia (singular glochidium) typically stay attached for 10-30 days before dropping off and settling on the bottom.

It is thought that this parasitic lifestyle arose because these mussels cannot swim on their own. This hitch-hiking stage allows the young mussels to go wherever the fish host goes and settle into new territory.

Invasive Mussels

Mussels play a crucial part in maintaining water quality. A single mussel can filter gallons of water a day. Unfortunately, mussel populations in Kentucky are under threat from water quality issues, overharvesting, and competition from invasive species.

Zebra mussels are an invasive mussel species native to the Caspian and Black Seas. These mussels have become highly invasive within the Great Lakes, where they have become an issue due to competition with native species and the destruction of infrastructure.



These mussels have also made their way into Kentucky, likely transported as stowaways within the ballast tanks of ships.

How to stop their spread:

- Always properly clean drain & dry your boat, livewell and motor after taking it out of the water.
- Join [iNaturalist.org](https://www.inaturalist.org) and become a part of Kentucky's Aquatic Nuisance Species (ANS) Project. Here you can report instances of suspected invasive species you encounter.

By Jonathunder - Own work, GFDL 1.2, <https://commons.wikimedia.org/w/index.php?curid=17748156>



Freshwater Pearls

Just like saltwater clams and oysters, mussels, on rare occasion, can produce pearls. Pearls are formed when an inorganic foreign object, such as a piece of sand, enters a mussel's tissues. The mussel then secretes the same substance it uses to build its shell (calcium carbonate) onto the object. Over time, these layers of CaCO_3 form a pearl. It is important to note that these pearls are extremely rare & unlikely to form. Additionally, given the precarious & protected status of many of Kentucky's mussels, it is best to simply leave any mussels you find alone.