

Freshwater Mussels

of the *Lower Wolf River*



A Guide to Their Habitat & Protection

Wisconsin has 51 native freshwater mussel species (commonly called clams) mostly found in rivers and streams, and occasionally in lakes. The Lower Wolf River watershed contains 30 native species and one exotic (Zebra mussel). Many of the mussel species have been declining in the past few decades and are now in jeopardy. More than half (54%) of freshwater mussels in Wisconsin are listed as endangered, threatened, or of special concern.

Many factors have contributed to declines in mussel populations including:

- *Habitat destruction*
- *Siltation and poor water quality*
- *Stream channelization*
- *Overharvest of mussels*
- *Pesticides and other chemicals*
- *Competition from exotic mussel species*

Read inside to learn more about these creatures of the river bottom, and how you can help protect them!

Mussel habitat Mussels can be found throughout the Lower Wolf River watershed. Mussels spend most of their lives partially buried in the river bottom and are often found in beds containing many different species. In the Wolf River, large mussel beds have been found even in the deepest part of the river. Mussels can occupy a wide variety of habitats ranging from silty to rocky stream bottoms, and from still to fast currents depending on the species.

Many species are habitat generalists, which means they can survive in a wide variety of habitats. However, some mussels are habitat specialists that require just the right type of conditions to survive. Some mussel species prefer small streams and tributaries of the Wolf River while others are found only in the Wolf River itself. A majority of mussels generally prefer stable river bottoms of mixed sand and gravel with moderate currents where they feed by filtering bacteria, algae and fine organic matter out of the water.

Mussels rely on relatively clean, clear water, and they can be good indicators of stream health and a balanced aquatic community. However, because mussels feed by filtering water, they are vulnerable to excessive sediment in the water and other types of pollution. Mussels in a stream are important because they provide food for other animals, and small fish and other organisms hide and lay eggs on their shells.



DNR researchers collecting mussel habitat data



Searching for mussels by hand

Where can I find mussels? Often, a quick search along the shoreline can tell you if mussels are present. Look for dead shells washed up or dragged up by muskrats. In clear, shallow waters a mask and snorkel can be used to search the bottom for shells or live mussels partially buried in the stream bottom. If you pick up a live mussel accidentally, return it to the water immediately. In more turbid waters mussels can be found by carefully searching with your hands or feet, but be careful for sharp objects that might be present. Finding mussels in deep water often requires specialized equipment such as SCUBA gear. The Wisconsin DNR has developed a mussel data base to help determine which species of mussels might be present in a body of water.



Excessive riprap destroys mussel and fish habitat



Natural shorelines are important to mussels and their fish hosts

Are mussels protected in Wisconsin?

Yes! As of spring 2007, all mussel species are legally protected in Wisconsin waters and the harvest of mussels is prohibited. In addition, species listed as state endangered and threatened have additional protection. It is illegal to destroy or to remove threatened or endangered mussels from any Wisconsin water. Substantial penalties may result for destroying, taking, possessing, transporting or selling threatened or endangered species without an authorized permit from the DNR. In the Wolf River, two mussel species are listed as endangered (Snuffbox, Purple Wartyback), three as threatened (Buckhorn, Salamander, Slippershell) and three of special concern (Elktoe, Round Pigtoe, Fawnsfoot).

SNUFFBOX

PURPLE WARTYBACK

BUCKHORN

SALAMANDER

SLIPPERSHELL

ELKTOE

ROUND PIGTOE

FAWNSFOOT



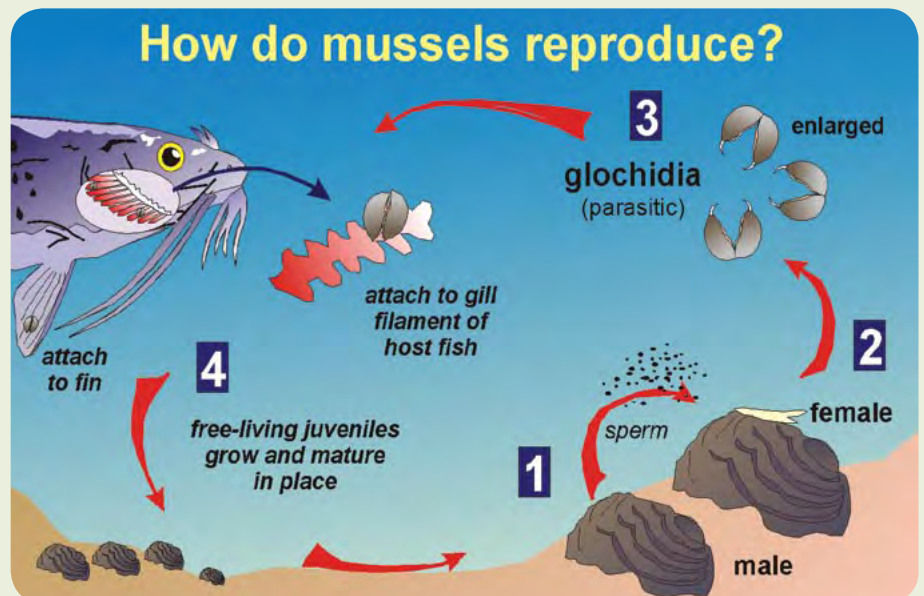
ENDANGERED Any species whose continued existence as a viable component of this state's wild animals or wild plants is determined to be in jeopardy on the basis of scientific evidence.

THREATENED Any species which appears likely, within the foreseeable future, on the basis of scientific evidence to become endangered.

SPECIAL CONCERN Those species about which some problem of abundance or distribution is suspected but not yet proved.

Life of a Mussel

Freshwater mussels have a complicated life cycle. Male mussels release sperm into the water and the female draws it in to fertilize the eggs. The larvae, called "glochidia," mature inside the female and then are ejected into water where they attach to the gills or fins of a fish host. Once attached, the glochidia continue developing for several weeks or months as a harmless parasite. They then drop off the host fish to grow to adulthood on the stream bottom. Survival of young mussels depends greatly on landing in the right type of habitat with the proper stream bottom characteristics and current. Many mussels are long-lived, slow-growing animals that may live for 10 to 100 years. Important fish hosts in the Wolf River include flathead and channel catfish, bass, freshwater drum, darters, minnows, and the mudpuppy.



Mussels need your help!

Mussel habitat needs to be protected and disturbances kept to a minimum. For example, placing rock riprap, seawalls, and permanent piers in rivers can cover and destroy mussel beds, create changes in the current that may not be suitable for mussels, and increase siltation downstream that can smother mussels. Changes to physical habitat in streams, such as adding or moving rocks or removing trees, can also eliminate habitat used by the host fish, which in turn will limit reproduction of the mussel species that utilize that host. Good land management practices are also good for mussels. Preventing excessive stormwater runoff in your community helps keep silt, pesticides, fertilizers and other chemicals from entering the water where they are harmful to mussels.

Here are a few things you can do to help mussels:

- When fishing, wading, or boating be aware of your impacts to the river bottom. Limit your disturbance and avoid areas that contain mussel beds.
- If you own riverfront property, try to keep your shoreline as natural as possible. Keeping 70% of the shoreline in its natural state is a good goal to shoot for. Shoreline alterations, such as riprap or seawall placement, may require DNR permits.
- If you find mussel beds, report their location to the DNR's Bureau of Endangered Resources so they can be cataloged.
- If you are planning on placing a pier or boat lift into the water, you should contact the DNR to see what you can do to protect the mussels from harm.



LEARN MORE ABOUT MUSSELS:

Several field guides are available to help identify mussels. The *Field Guide to Freshwater Mussels of the Midwest* by the Illinois Natural History Survey and *Freshwater Mussels of the Upper Mississippi River* by the WDNR are a good place to start. For those who prefer to use the Web, check out the Freshwater Mollusk Conservation Society at <http://ellipse.inhs.uiuc.edu/FMCS> or the Unio Gallery for pictures and videos of mussels and how they attract their host fish at <http://unionid.missouristate.edu>