

MUSSEL FIELD GUIDE

ASK^{an} EXPERT
ABOUT THE MINNESOTA RIVER

Freshwater mussels have two hard shells (valves) held together by hinge and are part of the mollusks - the world's second largest group of animals. A group of animals that would include familiar creatures like snails and the octopus. One of the mussel's more unique characteristics is its foot. The mussel opens up its shell, sticks out the foot and pulls itself slowly along the river or lake bottom. Look for a grooved or snakelike track in the stream's substrate to see where it has traveled. Many different animals like raccoons and muskrats eat mussels and you can find shells along the shoreline of most rivers in the Minnesota River Basin.

To learn more about the mussels identified in this fact sheet check out the "Field Guide to the Freshwater Mussels of Minnesota" written by Bernard E. Sietman, Minnesota Department of Natural Resources.

You can purchase a copy at http://www.dnr.state.mn.us/eco/nhnrp/mussel_survey/fieldguide.html. To learn more about mussels, visit the Minnesota Department of Natural Resources Mussel website: <http://www.dnr.state.mn.us/mussels/index.html>

male



female



Fatmucket - *Lampsilis siliquoidea*

An oblong mussel, the Fatmucket is yellowish to brown, usually with green rays color and grows up to 6 inches long. The shells of males and females differ with females being more inflated. The Fatmucket is one of the most widespread mussels in the Minnesota River Basin, but nearly extirpated from the Blue Earth River Basin.



Fragile papershell - *Leptodea fragilis*

An oval or oblong shaped mussel, the Fragile papershell has a thin shell and yellowish in color with pale green rays. Resembling the scaleshell and pink papershell, the fragile papershell is primarily found in medium and large rivers and today is one of the most common mussels present in Minnesota River Basin.



Giant Floater - *Pyganodon grandis*

Floater, stout floater, and papershell are just a few other names for this elongate or somewhat elliptical shaped mussel. Giant floaters have a smooth, thin shell, with a light tan or yellowish green color. They typically live in sluggish mud-bottomed pools of creeks or rivers. The Giant floater is one of the most common and widespread mussels in Minnesota and the Minnesota River Basin.



Plain Pocketbook - *Lampsilis cardium*

As one of the more commonly found mussel in the Minnesota River Basin, the Plain pocketbook prefers a stable sand substrate from small streams to large rivers. It has a smooth, oval or round shell that is usually yellowish in color with dark green rays. The shells of the males and females differ with females being more inflated.



Three Ridge - *Amblema plicata*

A commercially valuable mussel, the three ridge can be identified by thick to heavy valves and any number of ridges or folds. These mussels live in streams of all sizes and substrates (soft or coarse). It is much more abundant in the Pomme de Terre River watershed than anywhere else in the Minnesota River Basin.

male



female



Black sandshell - *Ligumia recta*

This rare mussel can still be found in some of the tributaries of the upper Minnesota River Basin and grows up to 8 inches. Characteristics of the black sandshell include moderately thick elongate, valves with a smooth and shiny outer shell that is usually black or greenish, sometimes with dark green rays. The inside of the shell is purple. It is locally abundant in the Chippewa River watershed.



Monkeyface - *Quadrula metanevra*

No longer found in the Minnesota River Basin, this mussel has a square-like shape with a yellowish, greenish or brown color. You can tell the difference between a Monkeyface and mussels like the wartyback and winged mapleleaf by its large, knobbed posterior ridge and green V-shaped markings.



Mucket - *Actinonaias ligamentina*

A smooth, thick, oval shell describes this mussel and brown in color, occasionally with broad green rays. The mucket lives in medium to large rivers in sand and gravel. Most likely, the mucket was the most abundant mussel in the Minnesota River but it has disappeared completely.



Elktoe - *Alasmidonta marginata*

This mussel can be identified by the colors of greenish yellow with numerous dark green rays and speckles on its outer shell and beak sculpture composed of 2 or 3 heavy ridges. Elktoe has a sharply angled posterior ridge, flat posterior slope with numerous fine ridges. Today, it is extirpated from most of the Minnesota River Basin, but there is a reproducing population in the Pomme de Terre River.



Spike - *Elliptio dilatata*

A fairly large mussel of no longer than 6 inches, the spike has two or three coarse ridges drawn up slightly in the middle on its beak sculpture. The shell's inside is usually purple. The only known population that still exists is in the Chippewa River.

COMMON

Threeridge (locally common)
Wabash pigtoe (locally common)
Pink papershell (locally common)
Fatmucket (locally common)
Lilliput (locally common)
Plain pocketbook (common)
Giant floater (common or abundant)
Creeper (common)
Deertoe (common)
White heelsplitter (common)
Mapleleaf (occasionally abundant)
Fragile papershell (common)
Cylindrical papershell
(common in tributary headwaters)
Pink heelsplitter (present)

RARE

Wartyback (rare)
Black sandshell (rare)
Pimpleback (uncommon to rare)
Creek heelsplitter (rare)
Spike (only remains in lower Chippewa River)
Elktoe (extremely rare)
Mucket (likely present)
Threehorn wartyback (rare)
Fawnsfoot (not common anywhere in Minnesota River Basin)

EXTIRPATED

(Extirpated means a species is no longer found in this portion of its historic range.)

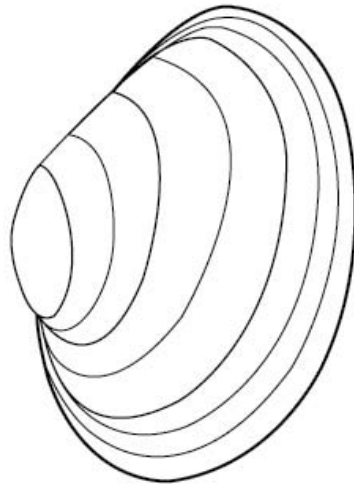
Purple wartyback (extirpated from lower MN River)
Elephantear (extirpated from lower MN River)
Gulf mapleleaf (extirpated from lower MN River)
Washboard (extirpated from lower MN River)
Sheepnose (extirpated from lower MN River)

Ebonyshell (extirpated)
Winged mapleleaf (extirpated)
Monkeyface (extirpated)
Pistolgrip (extirpated)
Rock pocketbook (extirpated)
Flutedshell (extirpated)
Salamander mussel (extirpated)
Butterfly (extirpated)
Higgins eye (extirpated)
Yellow sandshell (extirpated)
Scaleshell (extirpated)
Hickorynut (extirpated)
Round pigtoe (nearly extirpated)
Pondmussel (possibly extirpated)

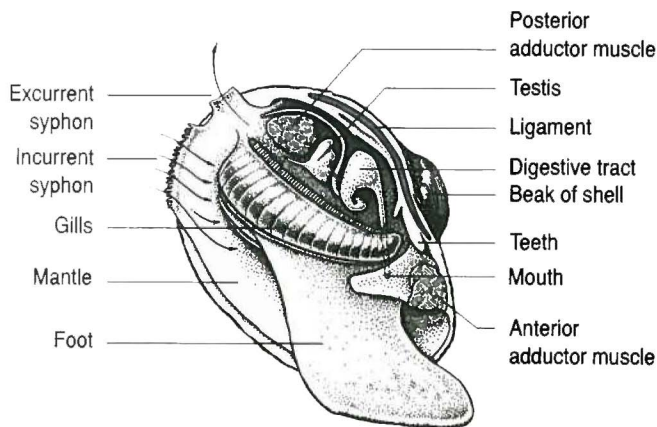
MUSSELS

Mussel Age

Like aging a tree with tree rings, you can tell the age of a mussel by counting the rings on its shell. Mussels can typically live up to ten years. The method of counting the shell's rings becomes harder the older the mussel. Look for the darker lines on the shell to determine each year's growth. During mussel surveys, researchers typically classify the mussels into three age classes: 1-5, 6-10, and > 10 years old.



Mussel Anatomy



Thanks to Bernard E. Sietman and Mike Davis, Minnesota Department of Natural Resources. Mussel photos courtesy of Deborah Rose. Mussel anatomy courtesy of Don Luce. Mussel age outline courtesy of Courtney Thoreson. "Ask an Expert about the Minnesota River" project profiles scientists and citizens answering questions about the health of the Minnesota River. More answers to questions about the Minnesota River can be found at: mrfdc.mnsu.edu/learn Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR) and the McKnight Foundation.