



# FRESHWATER MUSSELS OF OHIO field guide

DIVISION OF WILDLIFE



# INTRODUCTION

Ohio has an especially rich heritage of freshwater mussels, both from a biological and a historical perspective. Eighty species have been reported from the state. This number is 27% of all mussel species known from North America. More than 60 mussel taxa were described from specimens collected from Ohio, although many of these are now recognized as synonyms of other species.

Freshwater mussels are a critical component of a freshwater ecosystem. They may account for the largest single source of biomass in a river. Mussels may stabilize the substrate, act as a substrate themselves for many plants and animals, help clean the water, and act as food for fishes, birds, amphibians, mammals, and many more.

This booklet is produced by the Ohio Division of Wildlife as a free publication. This booklet is not for resale. Any unauthorized reproduction is prohibited. All images within this booklet are copyrighted by the Ohio Division of Wildlife and its contributing artists and photographers. For additional information, please call 1-800-WILDLIFE (1-800-945-3543).

## HOW TO USE THIS BOOKLET

The diagram shows a booklet page for the species *Three-horn Wartyback* (*Diplommatina villosa*). The page is divided into sections: Ohio Status (Type: Species of concern), Common name (Three-horn Wartyback), Scientific name (*Diplommatina villosa*), Overview (Description, Size, Habitat, Range, Similar Species, Hosts, Distribution), and Species Range (Map of Ohio). The page also features images of the mussel in posterior and anterior views, a map of Ohio, and a 'RECORDED COUNTRIES' section. The page number 19 is visible in the bottom right corner.

"Disclaimer: This guide is intended for public education, and is not intended as a scientific contribution to zoological nomenclature (ICZN Art. 8.2)."

## FRESHWATER MUSSELS OF OHIO

### TABLE OF CONTENTS

03 Species Accounts

05 Ecology and Distribution

08 Life History

72 Human Use and Protections

04 Freshwater Mussels of Ohio

06 Identification and Anatomy

70 Extirpated and Extinct Mussels

73 Publication Fundings

# SPECIES ACCOUNTS

## BUMPS, RIBS, WARTS

*Shells obviously sculptured with bumps, ribs, etc.*

- 10 Fanshell
- 11 Flutedshell
- 12 Mapleleaf
- 13 Monkeyface
- 14 Pimpleback
- 15 Pistolgrip
- 16 Purple Wartyback
- 17 Rabbitsfoot
- 18 Sheepnose
- 19 Three-horn Wartyback
- 20 Threeridge
- 21 Wartyback
- 22 Washboard

## PLAIN

*Small, nondescript shells*

- 23 Lilliput
- 24 Purple Lilliput
- 25 Salamander Mussel

## POCKETBOOKS, MUCKETS, & MORE

*Pocketbooks, medium- to large-sized, inflated shells*

- 26 Fatmucket
- 27 Mucket
- 28 Pink Mucket
- 29 Plain Pocketbook
- 30 Ridged Pocketbook
- 31 Round Hickorynut
- 32 Wavy-rayed Lampmussel

## TRIANGULAR

*Shells triangular or rounded triangles, few rays*

- 33 Ebonyshell
- 34 Elephantear
- 35 Longsolid
- 36 Ohio Pigtoe
- 37 Pyramid Pigtoe
- 38 Round Pigtoe
- 39 Wabash Pigtoe

## GREEN RAYS

*Smaller shells having obvious green rays. But see also Elongate, Pocketbooks, Muckets, & More, and Rare.*

- 40 Butterfly
- 41 Clubshell
- 42 Creek Heelsplitter
- 43 Deertoe
- 44 Elktoe
- 45 Fawnsfoot
- 46 Kidneyshell
- 47 Little Spectaclecase
- 48 Rainbow
- 49 Rayed Bean
- 50 Slippershell Mussel
- 51 Snuffbox

## WINGS

*Shells usually have posterior wing*

- 52 Fragile Papershell
- 53 Pink Heelsplitter
- 54 Pink Papershell
- 55 White Heelsplitter

## ELONGATE

*Shells very elongate, often large*

- 56 Black Sandshell
- 57 Eastern Pondmussel
- 58 Pondhorn
- 59 Spike
- 60 Yellow Sandshell

## LACKS HINGE TEETH

*Shells lack hinge teeth*

- 61 Creeper
- 62 Cylindrical Papershell
- 63 Eastern Floater
- 64 Flat Floater
- 65 Giant Floater
- 66 Paper Pondshell

## RARE

*Epioblasma, three rare species in an almost extinct group*

- 67 Northern Riffleshell
- 68 Purple Catpaw
- 69 White Catpaw

# FRESHWATER MUSSELS OF OHIO

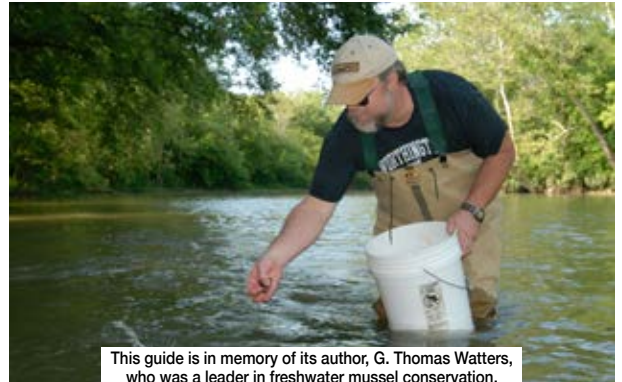
Only about 300 recent species of freshwater mussels are known from North America, which pales by comparison to the diversity of other groups such as birds or insects. Although freshwater mussels may date from the Triassic Period (over 200 million years ago) they appear to have never been numerous. North America has more species than any other continent – there are more species in Ohio’s Big Darby Creek than in all of Europe or Australia. Yet freshwater mussels are the most imperiled animals in North America, with perhaps 35 species (1 in 12) now extinct. And with rare exceptions, the loss of these animals is the direct result of mankind. But most people are unaware of their plight. This may be largely because mussels are not part of the charismatic megafauna – they are not cute, cuddly, or majestic and no one rents a boat to watch them. They are not even easy to observe.

Ohio has an especially rich heritage of freshwater mussels, both from a biological and a historical perspective. Eighty species have been reported from the state. This number is 27% of all mussel species known from North America. More than 60 mussel taxa were described from specimens collected from Ohio, although many of these are now recognized as synonyms of other species.

Today, Ohio is one of the best surveyed states in the U.S., thanks to the work of many dedicated collectors, the support of state and federal agencies, environmental regulations, the interest of conservation groups, and curious citizens. Despite this, there are still discoveries to be made, as

evidenced by the remarkable finding of the nearly extinct purple catspaw in Killbuck Creek.

People often ask “What good are they?” In addition to being an important part of any freshwater ecosystem, freshwater mussels are the canaries in the coal mine. Long-lived, largely immobile, they continuously sample water. Many are intolerant of changes in water quality and habitat and are among the first to respond to these problems. A river devoid of mussels is probably a river that needs to be investigated and monitored. But a river with abundant mussels is a place to take the family for fishing, boating, and swimming.



This guide is in memory of its author, G. Thomas Watters, who was a leader in freshwater mussel conservation.

# ECOLOGY AND DISTRIBUTION

Freshwater mussels live buried in the bottoms of rivers, creeks, lakes, and ponds. They filter water through their oversized gills for food, which consists of microscopic items such as single-celled algae, protozoans, and perhaps even bacteria. Most require clean water and a stable substrate; many seem to require free-flowing water as well. The loss of so many freshwater mussels is the direct result of impoundments, habitat destruction, invasive species (zebra and quagga mussels), and water quality issues. Unable to move out of harm's way, these sedentary animals can quickly succumb to even temporary harmful changes to their environment.

Freshwater mussels are a critical component of a freshwater ecosystem. Mussels might account for the largest single source of biomass in a river. They may stabilize the substrate, act as a substrate themselves for many plants and animals, help clean the water, and act as food for fishes, birds, amphibians, mammals, and many more.

Some freshwater mussel species grow to be quite old. Some European mussels may live to be more than 200 years old. In Ohio, some species may reach 40, 50, or even 60 years of age. By contrast, other species may live less than 10 years. It is believed that the shells have annular rings that can be counted like tree rings to estimate the mussel's age.

Much of Ohio's mussel diversity is due to Ohio's physiography. To the south lies the Ohio River and to the north Lake Erie. While the great majority of Ohio's mussels are derived from the Ohio River fauna, a few species, such as the eastern pondmussel, are part of the Laurentian fauna of the

eastern seaboard. Most of our mussels occur in the glaciated portion of the state. Glaciated Ohio was overlain to varying degrees by the Kansan, Illinoian, and Wisconsin glaciers, beginning approximately 600,000 years ago and ending (for now) about 10,000 years ago. Mussels were obviously absent in this region during the last glaciation. They therefore did not colonize this area of Ohio until at least 10,000 years ago.



# IDENTIFICATION AND ANATOMY

Freshwater mussels, like all bivalve molluscs, have two shells that are placed left and right. The shells are joined together on the dorsum. Often they are joined by teeth-like projections on the hinge. The teeth are actually projections that interlock, left with right, to keep the shells aligned and together when the animal burrows in the substrate. Not all mussels have hinge teeth. The shells are closed by powerful adductor muscles. To open the shells, mussels have a nonliving ligament which acts as a spring. Mussels lack a head and eyes but have photoreceptive areas that can detect changes in light levels. They have a large muscular foot used to burrow and move about. The gills are much larger than is needed for respiration because they are also used as sieves, filtering food out of the water that is moved by complex ciliary tracts to the mouth. In females, the gills also act as a place to store her parasitic larvae, the glochidia, until she is ready to release them.

Identification of some mussel species can be difficult. Unlike other animals, there is nothing to count – scales on fishes, tarsal segments on insects, etc. Confounding this is the fact that mussels are very much the product of their environments. The same species from a creek may look very different from the same species from a large river or from a lake. Plus, many species are sexually dimorphic, meaning that males and females can look very different. This guide attempts to point out the key characteristics that will allow you to identify most individuals. But bear in mind that there are always those frustrating specimens that may defy exact identification – even by professionals.

Not all mussels have hinge teeth. Some thin-shelled species, living in ponds and backwaters, lack hinge teeth all together.



---

**ANNULAR RINGS** - Growth lines, each corresponds to a year's growth.

**BEAK** - The earliest and oldest part of the shell, also called an umbo, often worn away.

**RAYS** - Radiating rays of color, usually green. They may be faint, blurred, broken, or very bold.

**SCULPTURE** - Knobs, bumps, ridges, corrugations. Annular rings are not considered as sculpture. Sculpture varies from place to place and with the age of the mussel.

**SULCUS** - A shallow concave area on the posterior half of some shells. An important but often difficult characteristic to see.

**BEAK SCULPTURE** - The beak often has a very characteristic sculpture, which unfortunately is often worn away.

**POSTERIOR RIDGE** - An area that divides the posterior slope from the rest of the shell. Very prominent in some species, barely noticeable in others.

**POSTERIOR SLOPE** - The portion of the shell behind the posterior ridge. In some species the slope may be sculptured and colored very differently from the rest of the shell.

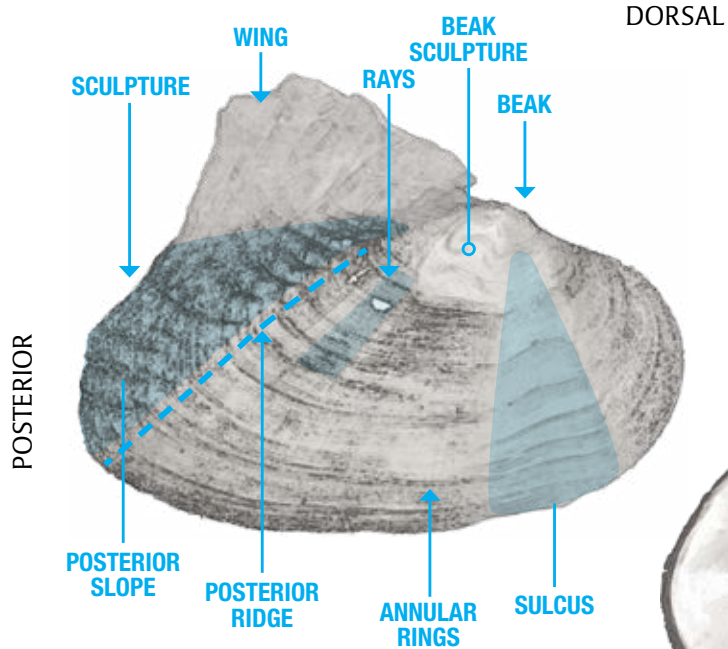
**WING** - A dorsal projection on the posterior slope.

**HINGE** - Consists of interlocking teeth – cardinals in the anterior and laterals in the posterior – that hold the two shells together. Underneath the hinge is the beak cavity.

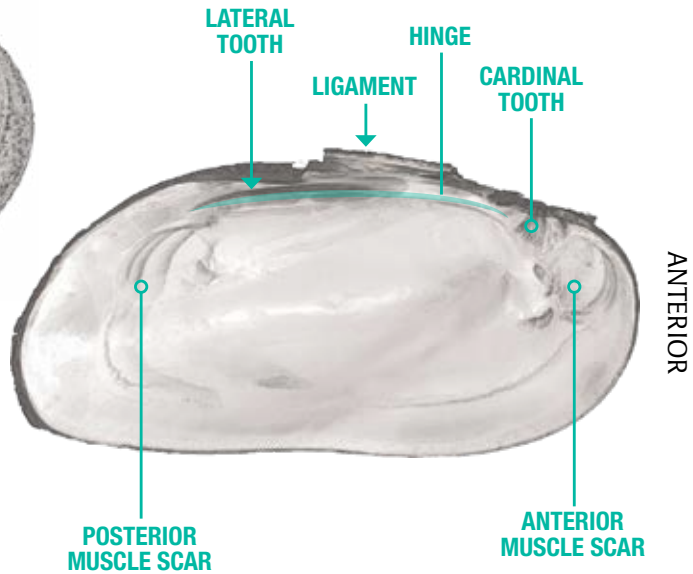
**LIGAMENT** - A spring connecting the two shells and helps open the mussel.

**MUSCLE SCARS** - Sites of attachment of the powerful anterior and posterior adductor muscles.

**NACRE** - The inner lining of the shell. Usually white but may be purple, rose, salmon or yellow. It may be iridescent or mother-of-pearl.



DORSAL

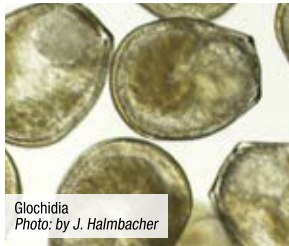


VENTRAL



# LIFE HISTORY

Males and females are usually separate in freshwater mussels. Males release sperm into the water which fertilizes the female's eggs. The eggs develop into a unique larva called a glochidium. Depending on the species a female may produce tens of thousand to millions of larvae per year. She stores them in her gills until they are released. Freshwater mussels are parasites! Glochidia have one purpose – to attach to a host, which 99% of the time is a fish, and rarely an amphibian. Once attached the fish forms a cyst around the glochidium. There the larva remains for weeks or months before going through a transformation into a juvenile mussel.



Glochidia  
Photo: by J. Halmbacher

Eventually it will break out of the cyst, fall to the bottom, and start its life as a free-living mussel. Mussels usually reach sexual maturity at three to five years.

Perhaps the most interesting aspect of mussel biology is how the female gets her larvae onto the proper host. Females have evolved many curious

methods to do this. Some have a highly modified portion of their body, a lure, that resembles a fish, caterpillar, or crayfish that attracts the host – when the fish attacks this lure the female releases her glochidia onto the fish where they attach. Other mussels form structures called conglutinates that resemble food items that fish would like to eat – items resembling

## RECOMMENDED READINGS

Cummings, Kevin A. & Christine A. Mayer. 1992.  
**Field Guide to Freshwater Mussels of the Midwest**  
Illinois Natural History, Survey Manual 5

Wendell R. Haag. 2012.  
**North American Freshwater Mussels**  
Cambridge University Press

David L. Strayer. 2008.  
**Freshwater Mussel Ecology**  
University of California Press

G. Thomas Watters, Michael A. Hoggarth, & David H. Stansbery. 2009.  
**The Freshwater Mussels of Ohio**  
Ohio State University Press

fish eggs, larval fish, insects, etc. She attaches her larvae to these structures and when attacked by fish the larvae attach. By fooling the proper fish, the mussel greatly increases the chances of her young developing into adults. Most mussels are very host specific, meaning that they cannot parasitize every kind of fish. Some apparently can only parasitize a single fish species.





Glochidia attached to the maggot-like conglutinate of the creeper.



Conglutinates of the lilliput mussel next to their mimic models, leaches.



Glochidia attached to a fantail darter.



The fish-like conglutinates of the kidneyshell. Each structure contains 20,000 glochidia under pressure and will explode when bitten by a fish.



The lure of a ridged pocketbook.

## OTHER FRESHWATER BIVALVES

Native freshwater mussels are not the only bivalves to be found in our rivers and lakes. Fingernail clams (Family Sphaeriidae) are a native group of small bivalves unrelated to freshwater mussels. They are often mistaken for baby mussels. The introduced Asian clam (*Corbicula fluminea*, figured below) has become a very common species throughout Ohio since it was introduced to the US in the 1930s. The invasive zebra and quagga mussels (Genus *Dreissena*), are a relatively recent introduction from Europe. These species thrive in impoundments and lakes, where they can outcompete native mussels.



The Asian Clam, a common non-native freshwater bivalve.



The lure of a wavy-rayed lampmussel.



A northern riffleshell has captured a darter.

STATUS: ■ Endangered

# Fanshell

*Cyrogenia stegaria*

**DESCRIPTION:** Medium-sized, solid, round, or somewhat triangular in profile. Sculptured with numerous fine pustules. Shell colored with fine green rays and minute green speckles. Hinge teeth massive. Nacre always white. Shells are slightly sexually dimorphic; females tend to be heavier and thicker-shelled than males.

**SIZE:** Rarely to 3 inches in length, usually 2-2½ inches.

**HABITAT:** A riverine species, occasionally in large creeks, in stable cobble and sand.

**RANGE:** Eliminated from most of its former range, it is now found only in the lower Muskingum River where it is very rare. Absent from Lake Erie.

**SIMILAR SPECIES:** The combination of the finely pustulose shell with fine green rays and speckles is unique.

**HOSTS:** Darters and sculpins.

**DERIVATION:** Greek, *stegos* – roof, apparently referring to the overlapping shingles on a roof.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Common

# Flutedshell

*Lasmigona costata*

**DESCRIPTION:** Medium-sized, rather rectangular, flattened, thin, posterior slope with corrugations. Beaks low and small with coarse W-shaped ridges. Shell green to brown, often with green rays. Cardinal teeth well-developed but not massive, lateral teeth nearly absent. Nacre white, occasionally flushed with salmon. Animal orange.

**SIZE:** To 6 inches in length, usually 3-4 inches.

**HABITAT:** Rivers, creeks, and large lakes, in sand and cobble.

**RANGE:** Statewide, but is often uncommon.

**SIMILAR SPECIES:** The creek heelsplitter is very similar but the posterior slope is not corrugated.

**HOSTS:** Sunfishes, bass, catfishes, darters, and chubs.

**DERIVATION:** Latin, *costatus* - ribbed.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

STATUS: ■ Common

# Mapleleaf

*Quadrula quadrula*

**DESCRIPTION:** Highly variable. Medium to large-sized, solid, rather square. Beaks prominent and wide, beak sculpture of knobby ridges. Shell with a sulcus. Shell with pustules except in the smooth sulcus. Posterior slope weakly corrugated. Shell yellow or green to almost black, often with blurred green rays. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 2½-3½ inches in length.

**HABITAT:** Rivers, large creeks, and large lakes, in stable sand and cobble.

**RANGE:** Widespread in Ohio in the proper habitat, including Lake Erie.

**SIMILAR SPECIES:** The wartyback and pimpleback lack a sulcus. The purple pimpleback has purple nacre.

**HOSTS:** Catfishes.

**REMARKS:** This is an important commercial species.

**DERIVATION:** Latin, *quadrula* – a little square.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Endangered

# Monkeyface

*Theliderma metanevra*

**DESCRIPTION:** Medium-sized, solid, squarish. Beaks prominent and wide, beak sculpture of weak ridges. Shell with an oblique row of large knobs, a corrugated posterior slope, and often additional pustules. Shell yellow to green to tan with intricate tent-shaped green markings. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 2½-3½ inches in length.

**HABITAT:** Rivers, in stable sand and cobble.

**RANGE:** The Ohio River and the lower Muskingum River.

**SIMILAR SPECIES:** The combination of shape and color are unique; the rabbitsfoot is much more elongate.

**HOSTS:** Shiners, sunfishes, and chubs.

**REMARKS:** Previously in *Quadrula*.

**DERIVATION:** Latin, *metanevra* – ribbed behind.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES





STATUS: ■ Common

# Pimpleback

*Cyclonaias pustulosa*

**DESCRIPTION:** Highly variable. Medium-sized, solid, round. Beaks prominent and wide, beak sculpture of irregular ridges. Shell with pustules, not necessarily arranged in radiating rows. Shell yellow or green to brown with green ray or blotch on beaks. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 2½-3 inches in length.

**HABITAT:** Rivers, large creeks, and large lakes, in stable sand and cobble.

**OHIO RANGE:** Widespread in Ohio in the proper habitat, including Lake Erie.

**SIMILAR SPECIES:** The wartyback lacks the green ray on the beaks.

**HOSTS:** Catfishes and crappies.

**REMARKS:** Previously in *Quadrula*. This is an important commercial species.

**DERIVATION:** Latin, *pustulosa* – full of pimples.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Common

# Pistolgrip

*Tritogonia verrucosa*

**DESCRIPTION:** Large-sized, elongate, compressed. Beaks low and small, beak sculpture of nodulose V-shaped ridges. Shell sculptured with numerous, dense pustules. Posterior slope corrugated. Shell yellowish to green to dark brown, pustules often paler than background. Hinge teeth well-developed. Nacre white. Sexes look slightly different.

**SIZE:** To at least 7 inches in length.

**HABITAT:** Mostly large creeks, often found unburied. It requires high water quality.

**RANGE:** Most of Ohio's larger rivers. Absent from the Lake Erie drainages.

**SIMILAR SPECIES:** It is somewhat similar to the rabbitsfoot, but is not as cylindrical and has a different color pattern.

**HOSTS:** Catfishes.

**DERIVATION:** Latin, *verrucosus* – full of warts.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES





**STATUS:** ■ Species of concern

# Purple Wartyback

*Cyclonaias tuberculata*

**DESCRIPTION:** Medium-sized, solid, flattened, nearly round in profile. Shell sculptured with numerous pustules; ribs present on dorsal wing. Hinge teeth massive. Nacre deep purple to brownish-purple.

**SIZE:** To 4½ inches in length, usually 3-4 inches.

**HABITAT:** Coarse sand and cobble in large streams, rivers, and large lakes. It requires good water quality.

**RANGE:** Most rivers and their larger tributaries, also in the western basin of Lake Erie.

**SIMILAR SPECIES:** The combination of the pustulose, flattened shell with purple nacre is unique.

**HOSTS:** Catfishes.

**DERIVATION:** Latin, *tuberculum* – small swelling or bump.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

ADULT



JUVENILE



STATUS: ■ Endangered

# Rabbitsfoot

*Theliderma cylindrica*

**DESCRIPTION:** Medium-sized, solid, very elongate, often cylindrical. Beaks low and wide, beak sculpture of irregular V-shaped ridges. Shell with an oblique row of knobs, a corrugated posterior slope, and often additional pustules. Shell yellow to green with intricate tent-shaped green markings. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** Creeks, less commonly in rivers, often found unburied along the water's edge.

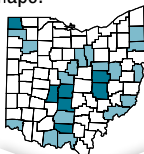
**RANGE:** Very sporadic in Ohio. In the Maumee River system but not Lake Erie.

**SIMILAR SPECIES:** The combination of shape and color are unique among all freshwater mussels.

**HOSTS:** Shiners and chubs.

**REMARKS:** Previously in *Quadrula*.

**DERIVATION:** Latin, *cylindrica* – cylindrical in shape.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Endangered

# Sheepnose

*Plethobasus cyphus*

**DESCRIPTION:** Medium-sized, compact. Beaks low and wide. Beaks sculptured with two or three concentric ridges. Shell bright yellow and waxy when juvenile, becoming brown with age. Sculptured with low, wide knobs or ridges down the center and sometimes on the posterior ridge of the shell. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** Strictly a river species.

**RANGE:** This rare species occurs in the Ohio and Muskingum rivers; absent from Lake Erie.

**SIMILAR SPECIES:** The waxy yellowish shell with a row of low knobs is unique. In the threehorn wartyback the knobs alternate between shells; this does not occur in the sheepnose.

**HOSTS:** Sauger and central stoneroller.

**DERIVATION:** Greek, *kyphos* – humped.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



**STATUS:** ■ Species of concern

# Three-horn Wartyback

*Obliquaria reflexa*

**DESCRIPTION:** Medium-sized, compact, thick. Beaks low and wide. Lacks obvious beak sculpture. Shell yellow, brown, or green, often with blurred green rays. Sculptured with a single radiating row of large knobs that alternate between left and right shells. Posterior slope weakly corrugated. Hinge teeth well-developed. Nacre white, rarely pink or rose.

**SIZE:** Usually 2-2½ inches in length.

**HABITAT:** Rivers and large lakes, in sand and cobble.

**RANGE:** Occurs in Ohio's large rivers and the western basin of Lake Erie.

**SIMILAR SPECIES:** The alternating row of knobs is unique.

**HOSTS:** Shiners, dace, and minnows.

**DERIVATION:** Latin, *reflexus* – bent or turned back, probably referring to the position and growth of the distinctive knobs. When the knobs are forming as the shell grows, the shell margin appears to be bending backwards.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



BUMPS,  
RIBS, WARTS

STATUS: ■ Common

# Threeridge

*Amblema plicata*

**DESCRIPTION:** Highly variable. Medium to large-sized, heavy and thick, with coarse diagonal ribs. Lake and big river specimens have less prominent ribs. Hinge teeth well-developed. Nacre always white.

**SIZE:** To 6½ inches in length.

**HABITAT:** Found in many habitats, but does not tolerate mud and silt.

**RANGE:** Statewide in creeks, rivers, and lakes. It is declining in many areas.

**SIMILAR SPECIES:** The washboard is very similar but has sculpture, at least as a juvenile, anterior to the beaks. The threeridge lacks such sculpture.

**HOSTS:** Many hosts including freshwater drum, gar, catfishes, shiners, bass, and sunfishes.

**REMARKS:** A valuable commercial species for the cultured pearl industry.

**DERIVATION:** Latin, *plicatus* – folded or braided.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Endangered

# Wartyback

*Cyclonaias nodulata*

**DESCRIPTION:** Medium-sized, solid, round to squarish. Beaks prominent and wide, beak sculpture of weak double loops. Shell with two oblique radiating rows of knobs, a corrugated posterior slope, and often additional pustules. Shell yellow or green to brown, very rarely with any other markings. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 2-2½ inches in length.

**HABITAT:** Rivers, in stable sand and cobble.

**RANGE:** The Ohio River, with a single occurrence in Ohio Brush Creek.

**SIMILAR SPECIES:** The pimpleback has a green ray on the beaks.

**HOSTS:** Catfishes, crappies, and bass.

**REMARKS:** Previously in *Quadrula*.

**DERIVATION:** Latin, *nodulus* – a little knot.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES





**STATUS:** ■ Endangered

# Washboard

*Megaloniaias nervosa*

**DESCRIPTION:** Very large-sized, squarish, very thick. Beaks low and wide with very coarse W-shaped sculpture. Shell yellow to black, rarely with green rays. Sculptured with oblique ribs and corrugations, including anterior to the beaks. Hinge teeth well-developed and massive. Nacre always white.

**SIZE:** To 8 inches in length.

**HABITAT:** Rivers, occasionally straying into large creeks, in muddy sand and cobble.

**OHIO RANGE:** This huge mussel occurs in the Ohio, Scioto, and Muskingum rivers; absent from Lake Erie.

**SIMILAR SPECIES:** The similar threeridge lacks sculpture anterior to the beaks.

**HOSTS:** Catfishes, sunfishes, and drum.

**REMARKS:** This is the most massive freshwater mussel in the world and a valuable commercial species.

**DERIVATION:** Latin, *nervosus* – full of fibers or sinews.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES





**STATUS:** ■ Common

PLAIN

# Lilliput

*Toxolasma parvum*

**DESCRIPTION:** Small-sized, oval, thin. Beaks low and wide, beak sculpture of a few coarse concentric ridges. Shell otherwise sculptureless. Shell yellowish to green to dark brown, rarely with faint green rays, sometimes appearing metallic. Hinge teeth well-developed but small. Nacre white. This species is simultaneously hermaphroditic (both male and female at the same time). All sexually mature individuals have a "female" shell outline.

**SIZE:** Usually 1 inch in length.

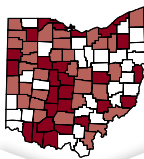
**HABITAT:** Creeks, ponds, and impoundments, in muddy sand and clay.

**RANGE:** Widespread outside of unglaciated Ohio. It may become numerous in impoundments.

**SIMILAR SPECIES:** The purple lilliput has purple nacre.

**HOSTS:** Sunfishes, darters, and crappies.

**DERIVATION:** Latin, *parvum* – small.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES



**STATUS:** ■ Endangered

# Purple Lilliput

*Toxolasma lividum*

**DESCRIPTION:** Small-sized, oval, solid. Beaks low and wide, beak sculpture of a few coarse concentric ridges. Shell otherwise sculptureless. Shell green to dark brown, rarely with faint green rays. Hinge teeth well-developed. Nacre purple, often paler along the edge of the shell. Sexes separate and look different.

**SIZE:** Usually 1-1½ inches in length.

**HABITAT:** Creeks, in stable sand and cobble.

**RANGE:** Very rare in a few Maumee River drainages.

**SIMILAR SPECIES:** The lilliput shell and little spectaclecase lack purple nacre.

**HOSTS:** The only known hosts are sunfishes.

**DERIVATION:** Latin, *lividum* – bluish or purple.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Threatened

PLAIN

# Salamander Mussel

*Simpsonaias ambigua*

**DESCRIPTION:** Small-sized, elongated, very fragile. Beaks low and wide, beak sculpture of “V” or “W”-shaped ridges. Shell otherwise sculptureless. Shell yellow or green without other markings. Hinge teeth minute, laterals lacking. Nacre white, usually with a darker flush under the hinge, nacre thickened in the anterior half.

**SIZE:** Usually 1½-2 inches in length.

**HABITAT:** This is a species of rivers, creeks and large lakes, often under large flat rocks with its host.

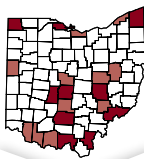
**OHIO RANGE:** It was very sporadic in Ohio but has become quite rare. Historically at Sandusky Bay.

**SIMILAR SPECIES:** The peculiar nacre, beak sculpture and lack of any color pattern set this species apart.

**HOSTS:** The host is the Mudpuppy; This species is unique among freshwater mussel species: it has no known fish hosts. Its larvae parasitize the external gills of the fully aquatic Mudpuppy salamander (*Necturus maculosus*). It is thought that gravid salamander mussels release their glochidia when they are eaten by mudpuppies, effectively sacrificing themselves for their offspring. It is the only mussel known to use a salamander as a host.

**DERIVATION:** Latin, *ambigua* – [relationship] uncertain.

All Records ■  
Since 1980 ■



RECORDED  
COUNTIES



STATUS: ■ Common

# Fatmucket

*Lampsilis siliquoides*

**DESCRIPTION:** Medium-sized, fairly thin. Beaks low and broad with fine, wavy parallel ridges. Shell otherwise sculptureless. Shell tan or yellow, often with green rays. Hinge teeth well-developed but not massive. Nacre always white. Sexes look different.

**SIZE:** To 5 inches in length.

**HABITAT:** Rivers, creeks, and large lakes in stable sand and cobble.

**RANGE:** Statewide. This is the second-most common species in the state.

**SIMILAR SPECIES:** It is similar to the plain pocketbook, but is more elongate and has characteristic beak sculpture of fine, wavy parallel ridges.

**HOSTS:** Bass, sunfishes, and crappies.

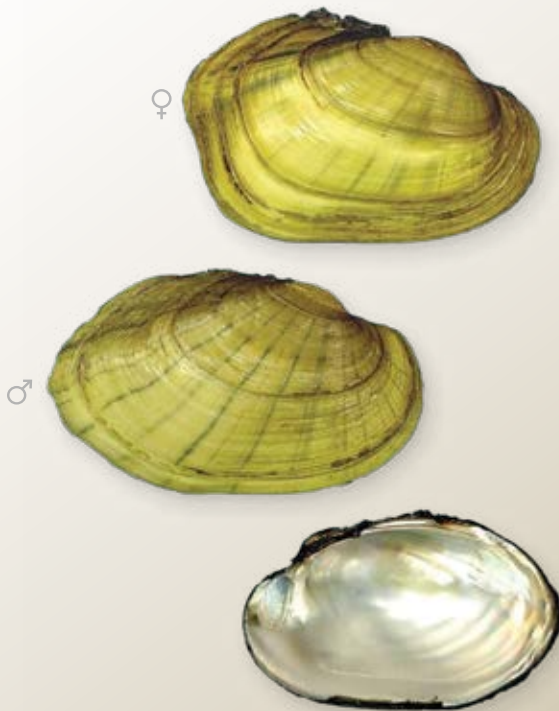
**REMARKS:** Was known as *Lampsilis radiata luteola*.

**DERIVATION:** Latin, *siliqua* – seed pod, referring to the external appearance of the shell.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Common

# Mucket

*Ortmanniana ligamentina*

**DESCRIPTION:** A large, often thick shell with low beaks and a rounded profile. Beak and shell sculptureless. Often patterned with blurred green rays. Nacre always white. Sexes differ slightly.

**SIZE:** To 5½ inches in length.

**HABITAT:** The mucket prefers rivers and large creeks.

**RANGE:** This species occurs in most of Ohio's large river systems except for the Great Miami River; also Lake Erie drainages but is very rare in Lake Erie itself.

**SIMILAR SPECIES:** The mucket resembles some of the other pocketbook mussels (*Lampsilis*) but is more elongate, with a very broad and low beak.

**HOSTS:** Bass, sauger, sunfishes, carp, minnows, and yellow perch.

**DERIVATION:** Latin, *ligamentina* – a bandage, referring to the large ligament connecting the shells.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

**STATUS:** ■ Endangered

# Pink Mucket

*Lampsilis abrupta*

**DESCRIPTION:** Medium-sized, solid and heavy. Beaks very low and broad. Shell sculptureless. Shell yellow to tan with faint green rays, posterior slope lighter in color. Hinge teeth massive. Nacre white, salmon, or pink. Sexes look different.

**SIZE:** To 4 inches in length.

**HABITAT:** Big rivers, in sandy mud and gravel.

**RANGE:** The Ohio River, but may be extirpated from within the state. It occurred in the Muskingum River as late as 1971.

**SIMILAR SPECIES:** Males are virtually indistinguishable from male muckets. Females are heavier and more solid than other *Lampsilis* species.

**HOSTS:** Bass and walleye.

**DERIVATION:** Latin, *abruptus* – broken off or steep, referring to the shape of the female shell.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



STATUS: ■ Common

# Plain Pocketbook

*Lampsilis cardium*

**DESCRIPTION:** Large-sized, fairly thin. Beaks prominent and broad with coarse V-shaped ridges. Shell otherwise sculptureless. Shell tan or yellow often with green rays. Hinge teeth well-developed but not massive. Nacre always white. Sexes look different.

**SIZE:** To 6 inches.

**HABITAT:** Rivers, streams, and large lakes in stable sand and cobble.

**RANGE:** Statewide.

**SIMILAR SPECIES:** The plain pocketbook is very similar to the ridged pocketbook, which has a sharper posterior ridge and generally lacks rays. From the fatmucket this species lacks the wavy beak sculpture and is not as elongate.

**HOSTS:** Bass, sunfishes, and crappies.

**DERIVATION:** New Latin, *cardia*, from Ancient Greek *kardia* – heart, referring to the heart-shaped cross section through both shells.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES



STATUS: ■ Endangered

# Ridged Pocketbook

*Lampsilis ovata*

**DESCRIPTION:** Large-sized, fairly thin. Beaks prominent, broad, lacking sculpture. Posterior ridge sharp. Shell tan or yellow, rarely with green rays posteriorly. Posterior slope brown. Hinge teeth well-developed. Nacre always white. Sexes look different.

**SIZE:** To 6 inches in length.

**HABITAT:** Rivers and large creeks in stable sand and cobble.

**RANGE:** This rare species is now found only in the upper Muskingum River. Absent from Lake Erie.

**SIMILAR SPECIES:** It is similar to the plain pocketbook, but usually lacks rays, has a sharper posterior ridge, and a dark posterior slope.

**HOSTS:** Probably similar to plain pocketbook.

**DERIVATION:** Latin, *ovatus* – egg-shaped, referring to the shape of the shell.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES

STATUS: ■ Threatened

# Round Hickorynut

*Obovaria subrotunda*

**DESCRIPTION:** Medium-sized, compact, nearly round. Beaks low and wide, lacking obvious beak sculpture. Shell sculptureless. Shell yellow or tan, occasionally with blurred green rays, posterior slope lighter in color. Hinge teeth well-developed. Nacre white, rarely pink or rose. Sexes slightly different.

**SIZE:** Rarely to 3 inches in length, usually 1½–2½ inches.

**HABITAT:** Rivers, large creeks, and large lakes in sand and cobble.

**RANGE:** Ohio's rivers, large creeks, and the western basin of Lake Erie. It is becoming increasingly rare.

**SIMILAR SPECIES:** The round, featureless shell does not resemble any other Ohio species.

**HOSTS:** Darters and sculpins.

**DERIVATION:** Latin, *subrotundus* – almost round.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES

**STATUS:** ■ Species of concern

# Wavy-rayed Lampmussel

*Lampsilis fasciola*

**DESCRIPTION:** Medium-sized, fairly thin. Beaks low and broad, sculptured with three or four weak V- or W-shaped ridges. Shell otherwise sculptureless. Shell tan or yellow with numerous, fine, often wavy green rays. Hinge teeth well-developed but not massive. Nacre always white. Sexes look different.

**SIZE:** Usually 2½-3 inches in length.

**HABITAT:** Large creeks and large lakes in stable sand and cobble.

**RANGE:** This uncommon species is widespread in the state but rarer in unglaciated Ohio.

**SIMILAR SPECIES:** It is similar to the plain pocketbook, but is smaller, with lower beaks, and a characteristic color pattern of numerous, fine wavy rays.

**HOSTS:** Bass and sunfishes.

**DERIVATION:** Latin, *fascia* – a band + Latin, – *ola*, small, referring to the rays on the shell.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Endangered

# Ebonyshell

*Reginaia ebenus*

**DESCRIPTION:** Medium-sized, with a thick hinge and a deep, compressed beak cavity. Beaks prominently twisted forward. Sculptureless. Shell black to tan, it may be faintly rayed. Nacre always white.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** Typical of rivers. It is not a creek or lake species.

**RANGE:** Ohio River in the southwest corner of the state. Previously more widespread but never common.

**SIMILAR SPECIES:** The longsolid lacks the twisted appearance of the prominent beaks. The Wabash pigtoe has a sulcus.

**HOSTS:** Skipjack herring, bass, and crappies.

**REMARKS:** Previously placed in *Fusconaia* but moved to *Reginaia* based on genetic evidence.

**DERIVATION:** Latin, *ebenus* – [resembles] ebony wood.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Endangered

**TRIANGULAR**

# Elephantear

*Elliptio crassidens*

**DESCRIPTION:** Medium-sized, very solid, rounded or elongate triangular in profile. Beaks low and wide with one or two weak ridges. Shell otherwise sculptureless. Shell green to yellow or black often with blurred faint green rays. Hinge teeth massive. Nacre purple, salmon, or rarely white.

**SIZE:** To at least 6 inches in length.

**HABITAT:** Strictly a big river species in Ohio, in stable cobble and sand.

**RANGE:** Rare outside of the Ohio River. It never occurred in Lake Erie.

**SIMILAR SPECIES:** The heavy, smooth shell with purple nacre is unique.

**HOSTS:** Only the skipjack herring has been implicated as a host, although others undoubtedly exist as well.

**DERIVATION:** Latin, *crassus* – solid + Latin, *dens* - teeth.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Endangered

# Longsolid

*Fusconaia subrotunda*

**DESCRIPTION:** Medium-sized, solid, with a thick hinge and a deep compressed beak cavity. Beaks low and wide, without sculpture. Shell sculptureless. Juveniles are brightly colored but adults are usually a dull tan to black. Nacre always white.

**SIZE:** To 4 inches in length.

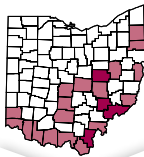
**HABITAT:** Typical of rivers. It is not a creek or lake species.

**RANGE:** Inhabits the state's larger rivers where it is generally quite rare.

**SIMILAR SPECIES:** The ebonyshell has a twisted appearance with prominent umbos. The Wabash pigtoe has a sulcus. Neither of those species is brightly colored as a juvenile.

**HOSTS:** None identified.

**DERIVATION:** Latin, *subrotunda* – almost round.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**

ADULT



JUVENILE





**STATUS:** ■ Endangered

**TRIANGULAR**

# Ohio Pigtoe

*Pleurobema cordatum*

**DESCRIPTION:** Medium-sized, solid, rather triangular, beaks twisted and face forward, positioned near anterior margin, shell with a distinct sulcus. Beaks high and prominent. Beaks not obviously sculptured. Shell otherwise sculptureless. Shell tan to chestnut, rarely with blurred faint green rays. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** A river species, very rarely in large creeks, in stable sand and cobble.

**RANGE:** The Ohio and lower Muskingum rivers; rare in Big Darby Creek.

**SIMILAR SPECIES:** The pyramid pigtoe is even more twisted forward; the round pigtoe lacks a sulcus; in the Wabash pigtoe the beaks face each other.

**HOSTS:** Sunfishes, shiners, and chubs.

**DERIVATION:** Latin, *cordis* – heart-shaped.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**

BIG RIVER FORM



SMALL RIVER FORM





**STATUS:** ■ Endangered

**TRIANGULAR**

# Pyramid Pigtoe

*Pleurobema rubrum*

**DESCRIPTION:** Medium-sized, solid, triangular, beaks twisted far forward and face forward, positioned at or beyond anterior margin, shell with a distinct sulcus. Beaks very high and prominent. Beaks not obviously sculptured. Shell sculptureless. Shell tan to chestnut, rarely with blurred faint green rays. Hinge teeth well-developed. Nacre white or with rose flush.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** A river species, in stable sand and cobble.

**RANGE:** May still occur in the lower Muskingum River, where it would be very rare.

**SIMILAR SPECIES:** The Ohio pigtoe is less twisted forward; the round pigtoe lacks a sulcus; in the Wabash pigtoe the beaks face each other.

**HOSTS:** Shiners and chubs.

**DERIVATION:** Latin, *rubrum* – red [nacre].



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**

SMALL RIVER FORM



BIG RIVER FORM



**STATUS:** ■ Species of concern

# Round Pigtoe

*Pleurobema sintoxia*

**DESCRIPTION:** Highly variable. Medium-sized, solid, rounded to triangular. Shell lacks a sulcus. Beaks high and prominent (rivers) to low and small (creeks). Beaks sculptured with two or three angular ridges. Shell otherwise sculptureless. Shell yellowish to chestnut, rarely with blurred faint green rays. Hinge teeth well-developed. Nacre white or rose.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** Rivers, creeks, and large lakes, in stable sand and cobble.

**RANGE:** Was widespread in Ohio, including Lake Erie, but has become uncommon.

**SIMILAR SPECIES:** The Ohio pigtoe, pyramid pigtoe, and Wabash pigtoe all have a sulcus, but some specimens may be difficult to identify.

**HOSTS:** Shiners, sunfishes, and dace.

**DERIVATION:** Latin+Greek, *semitoxon* – bowed [hinge].



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**

BIG RIVER FORM



SMALL RIVER FORM



**STATUS:** ■ Common

**TRIANGULAR**

# Wabash Pigtoe

*Fusconaia flava*

**DESCRIPTION:** Highly variable. Medium-sized. Creek specimens are flattened side-to-side with low beaks; big river specimens are fatter with higher beaks. Both forms have a sulcus. Beaks face each other, beak sculpture not obvious. Shell sculptureless. Shell yellow to tan or chestnut, occasionally with faint green rays. Nacre always white.

**SIZE:** To 4 inches in length but usually 2-2½ inches.

**HABITAT:** Creeks to rivers to lakes in stable sand and cobble.

**RANGE:** Statewide.

**SIMILAR SPECIES:** The Wabash pigtoe has a sulcus, which is lacking in the similar longsolid, ebonyshell, and round pigtoe.

**HOSTS:** Bluegill, crappies, shiners, and chubs.

**DERIVATION:** Latin, *flavus* – yellow.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**

BIG RIVER FORM



SMALL RIVER FORM



**STATUS:** ■ Endangered

**GREEN RAYS**

# Butterfly

*Ellipsaria lineolata*

**DESCRIPTION:** Medium-sized, solid, rounded or triangular in profile. Shell sculptureless. Shell colored with peculiar rays of alternating light and dark spots. Hinge teeth massive. Nacre always white. Sexes differ slightly.

**SIZE:** To at least 4 inches in length.

**HABITAT:** Strictly a big river species in Ohio, in stable cobble and sand.

**RANGE:** Rare outside of the Ohio River, common only in the lower Muskingum River. It never occurred in Lake Erie.

**SIMILAR SPECIES:** The smooth shell with rays of alternating light and dark is unique.

**HOSTS:** Freshwater drum and perhaps sunfishes and sauger.

**DERIVATION:** Latin, *lineola* – a little line.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Endangered

GREEN RAYS

# Clubshell

*Pleurobema clava*

**DESCRIPTION:** Small-sized, elongate, very triangular, beaks positioned near anterior margin. Beaks low and wide, sculptured with two or three angular ridges. Shell otherwise sculptureless. Shell yellow with broken dark green rays, at least as a juvenile. Hinge teeth well-developed. Nacre always white.

**SIZE:** Usually 1½-2½ inches in length.

**HABITAT:** Creeks, less commonly in rivers, in stable sand and cobble.

**RANGE:** Once found in many creeks across the state. Now it is quite rare; records from Lake Erie are controversial.

**SIMILAR SPECIES:** The yellow, elongated, triangular shell with green patches is unique.

**HOSTS:** Darters, shiners, and central stoneroller.

**DERIVATION:** Latin, *clava* – club, club-shaped.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES

**STATUS:** ■ Species of concern

# Creek Heelsplitter

*Lasmigona compressa*

**DESCRIPTION:** Medium-sized, rather rectangular, flattened, thin, posterior slope without corrugations. Beaks low and small with weak W-shaped ridges. Shell green to brown, usually with green rays. Hinge teeth well-developed but not massive. Nacre always white, occasionally flushed with yellow or salmon. Animal orange. This species is simultaneously hermaphroditic (both male and female at the same time). All sexually mature individuals have a "female" shell outline.

**SIZE:** Usually 2½-3 inches in length.

**HABITAT:** Creeks, rarely in rivers and large lakes, in sand and cobble.

**RANGE:** Statewide but very uncommon. It requires good water quality.

**SIMILAR SPECIES:** The fluted shell is very similar but the posterior slope is corrugated.

**HOSTS:** Catfishes, sunfishes, bass, crappies, and shiners.

**DERIVATION:** Latin, *compressus* - flattened.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES





**STATUS:** ■ Species of concern

# Deertoe

*Truncilla truncata*

**DESCRIPTION:** Small-sized, triangular, solid, pointed posteriorly. Beaks prominent and wide, beak sculpture of very fine double-looped ridges. Posterior ridge sharply angled. Shell otherwise sculptureless. Shell green or yellowish to tan, with green rays, spots, or zigzag markings. Hinge teeth well-developed but small. Nacre white, pink, or salmon. Sexes look very similar.

**SIZE:** Usually 1½-2½ inches in length.

**HABITAT:** Rivers, large creeks, and large lakes in muddy sand and cobble.

**RANGE:** Most of Ohio's larger rivers, and Lake Erie and its drainages.

**SIMILAR SPECIES:** The fawnsfoot is more elongate and lacks a sharp posterior ridge.

**HOST:** Freshwater drum.

**DERIVATION:** Latin, *truncatus* – cut off, truncated.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



**STATUS:** ■ Species of concern

# Elktoe

*Alasmidonta marginata*

**DESCRIPTION:** Medium-sized, thin, posterior slope with weak corrugations, hinge teeth very reduced (laterals absent), beak with two or three heavy V-shaped ridges. Shell patterned with green rays with peculiar green flecks, posterior slope paler. Nacre always white. Animal orange.

**SIZE:** Usually 2½-4 inches in length.

**HABITAT:** Small rivers and large creeks in sand and cobble.

**RANGE:** Statewide in good water quality habitats; rare in Lake Erie.

**SIMILAR SPECIES:** The corrugated posterior slope and color pattern are unique.

**HOSTS:** Rock bass, warmouth, and suckers.

**REMARKS:** An indicator of good water quality.

**DERIVATION:** Latin, *marginis* – border, referring to the distinct inner shell margin.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



**STATUS:** ■ Species of concern

# Fawnsfoot

*Truncilla donaciformis*

**DESCRIPTION:** Small-sized, elongate, solid, pointed posteriorly. Beaks low and small, beak sculpture of fine double-looped ridges. Posterior ridge rounded. Shell otherwise sculptureless. Shell green or yellowish to tan, with green rays, spots, or zigzag markings. Hinge teeth well-developed but small. Nacre always white. Sexes look different.

**SIZE:** To 2 inches in length.

**HABITAT:** Rivers, large creeks, and large lakes in muddy sand and cobble.

**RANGE:** Most of Ohio's larger rivers, and Lake Erie and its drainages.

**SIMILAR SPECIES:** The deertoe is less elongate and has a sharp posterior ridge.

**HOST:** Freshwater drum.

**DERIVATION:** Latin, *donaciformis* – shaped like a *Donax*, the marine bivalves known as coquinas.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Species of concern

# Kidneyshell

*Ptychobranthus fasciolarus*

**DESCRIPTION:** Medium-sized, solid, compressed, elongate. Beaks low and wide, beak sculpture not obvious. Sculptureless. Shell yellow with broken green rays, at least as juveniles. Hinge teeth well-developed and massive. Nacre always white.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** Creeks and large lakes, less commonly in rivers, in sand and cobble. It requires good water quality.

**RANGE:** Statewide in the proper habitat.

**SIMILAR SPECIES:** The spike is not yellow, has coarse beak sculpture, and usually a purple nacre. The rainbow is much smaller and thinner and has wavy beak sculpture.

**HOSTS:** Darters.

**DERIVATION:** Latin, *fascia* - banded.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Endangered

GREEN RAYS

# Little Spectaclecase

*Leaunio lienosus*

**DESCRIPTION:** Small-sized, oval, thin but solid. Beaks low and wide, beak sculpture of coarse, double-looped ridges. Shell otherwise sculptureless. Shell yellow to dark brown, often with blurred green rays. Hinge teeth well-developed but thin. Nacre always white. Sexes look different.

**SIZE:** Usually 1½-2½ inches in length.

**HABITAT:** Small, cool water creeks, often with a clay substrate.

**OHIO RANGE:** Found only in a few southern creeks such as Symmes, Pine, and Ohio Brush creeks.

**SIMILAR SPECIES:** The rainbow does not have double-looped beak sculpture and has a brighter and more boldly rayed color pattern.

**HOSTS:** None identified.

**REMARKS:** Some consider the Ohio populations of the Little Spectaclecase to be a unique subspecies, *Leaunio lienosus aquilonius*, but this hypothesis is not widely accepted.

**DERIVATION:** Latin, *lienosus* – "suffering from a disorder of the spleen"; grumpy; perhaps the author thought this species resembled a diseased spleen.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES



**STATUS:** ■ Species of concern

# Rainbow

*Cambarunio iris*

**DESCRIPTION:** Small-sized, oval, thin. Beaks low and wide, beak sculpture of coarse, irregular ridges. Shell otherwise sculptureless. Shell yellow to green to brown, with green, often broken, rays. Hinge teeth well-developed but thin. Nacre always white and iridescent. Sexes look different.

**SIZE:** Usually 1½-2 inches in length.

**HABITAT:** Creeks and large lakes.

**OHIO RANGE:** Widespread but obviously avoids unglaciated Ohio. It also occurs in Lake Erie.

**SIMILAR SPECIES:** The rayed bean is thicker and lacks obvious beak sculpture. The lilliput lacks the green rays.

**HOSTS:** Darters, bass, and sunfishes.

**REMARKS:** Previously in *Villosa*.

**DERIVATION:** Latin, *iris* – [nacre like] a rainbow.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**





**STATUS:** ■ Endangered

**GREEN RAYS**

# Rayed Bean

*Paetulunio fabalis*

**DESCRIPTION:** Small-sized, oval, often very thick. Beaks low and wide, beak sculpture not obvious. Shell otherwise sculptureless. Shell green to brown, with numerous, often wavy, green rays. Hinge teeth short and thick. Nacre white. Sexes look different.

**SIZE:** Rarely to 1½ inches in length.

**HABITAT:** Rivers, large creeks, and large lakes.

**RANGE:** Most records are for the Scioto River system, but it was once sporadic across the state and Lake Erie. It is now very rare in a few sites.

**SIMILAR SPECIES:** The rainbow is thinner and has obvious beak sculpture. The lilliput is thinner and lacks the green rays.

**HOSTS:** Darters and perhaps sculpins.

**REMARKS:** Previously in *Villosa*.

**DERIVATION:** Latin, *faba* – [shaped like] a bean.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**

**STATUS:** ■ Threatened

**GREEN RAYS**

# Slippershell Mussel

*Alasmidonta viridis*

**DESCRIPTION:** Small, compact. Beak sculpture of two or three heavy V or W-shaped ridges. Shell otherwise sculptureless. Shell patterned with numerous green rays, often wavy. Lateral teeth absent. Nacre always white. Animal orange.

**SIZE:** Usually 1 inch in length, rarely larger.

**HABITAT:** Headwaters, including intermittent creeks.

**RANGE:** Widely distributed but seems to avoid the unglaciated southeastern portion of the state; rare in Lake Erie.

**SIMILAR SPECIES:** The rare rayed bean is similar but lacks the beak sculpture of the slippershell.

**HOSTS:** Sculpins and darters.

**DERIVATION:** Latin, *viridis* – green.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**

**STATUS:** ■ Endangered

# Snuffbox

*Epioblasma triquetra*

**DESCRIPTION:** Medium-sized, compact. Shell with fine corrugations on the posterior slope. Shell tan with peculiar broken green rays. Hinge teeth well-developed. Nacre white. Sexes look somewhat different.

**SIZE:** Rarely to 2½ inches in length, usually 1½-2 inches.

**HABITAT:** This rare species occurs in rivers, creeks, and large lakes in stable cobble and sand.

**RANGE:** Historically sporadic in Ohio, including the Bass Islands.

**SIMILAR SPECIES:** The fawnsfoot and deertoe are similar but lack the posterior corrugations.

**HOST:** Logperch.

**DERIVATION:** Latin, *triquetrus* – triangular, referring to the shape of the shell.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



STATUS: ■ Common

# Fragile Papershell

*Potamilus fragilis*

**DESCRIPTION:** Medium-sized, rather oval, flattened, quite thin, most individuals with posterior wing. Beaks low and small without obvious sculpture. Sculptureless. Shell pale yellow to tan, often with faint green rays, posterior slope darker. Hinge teeth well-developed but fine. Nacre white, often partially flushed with pink. Sexes somewhat different.

**SIZE:** To 6 inches in length, usually 4-4½ inches.

**HABITAT:** Rivers and large lakes, in muddy sand and cobble.

**OHIO RANGE:** Statewide in rivers and Lake Erie; it is not a small creek species.

**SIMILAR SPECIES:** The pink heelsplitter and pink papershell have a uniformly purple or pink nacre.

**REMARKS:** Formerly in the genus *Leptodea*.

**HOST:** Freshwater drum.

**DERIVATION:** Latin, *fragilis* - fragile.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES



## WINGS

**STATUS:** ■ Common

# Pink Heelsplitter

*Potamilus alatus*

**DESCRIPTION:** Large-sized, thin, very compressed. Most individuals have a prominent, unsculptured wing. Beaks low and small, sculpture not obvious. Shell greenish to nearly black, often with blurred green rays. Hinge teeth well-developed but thin. Nacre pink or purple. Sexes somewhat different.

**SIZE:** To 7½ inches in length.

**HABITAT:** Rivers and large lakes, rare in creeks, in muddy sand and cobble.

**RANGE:** Most of Ohio's larger rivers and Lake Erie.

**SIMILAR SPECIES:** The white heelsplitter has white nacre and a corrugated wing. The pink papershell is more polished with a metallic nacre. The fragile papershell is yellow with a white nacre.

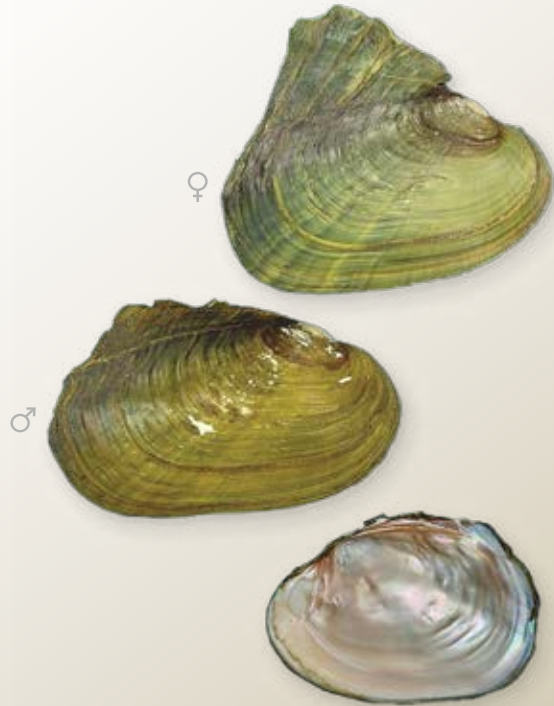
**HOST:** Freshwater drum.

**DERIVATION:** Latin, *alatus* - winged.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



## WINGS

**STATUS:** ■ Common

# Pink Papershell

*Potamilus ohioensis*

**DESCRIPTION:** Large-sized, quite thin, very compressed. Most individuals have a prominent, unsculptured wing. Beaks low and small, beak sculpture not obvious. Shell greenish or yellowish, polished, very rarely with faint green rays. Hinge teeth well-developed but thin. Nacre metallic pink or copper. Sexes somewhat different.

**SIZE:** To 6½ inches in length.

**HABITAT:** Rivers in muddy sand.

**RANGE:** Most of Ohio's larger rivers; absent from Lake Erie drainages.

**SIMILAR SPECIES:** The pink heelsplitter has a nonmetallic nacre. The fragile papershell is yellow with a white nacre. The white heelsplitter has a white nacre.

**HOST:** Freshwater drum.

**DERIVATION:** Ohio + Latin, *-ensis* - from, from Ohio. Surprisingly, *ohioensis* is an incorrect spelling.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**





## WINGS

**STATUS:** ■ Common

# White Heelsplitter

*Lasmigona complanata*

**DESCRIPTION:** Large-sized, rounded, very flattened, thin, with corrugated wing. Beaks low and small with coarse W-shaped ridges. Shell green to black, occasionally with blurred green rays. Hinge teeth massive but laterals become indistinct with age. Nacre always white. Sexes slightly different. Animal orange.

**SIZE:** To 7½ inches in length.

**HABITAT:** Rivers, large creeks, and large lakes, in muddy sand and cobble. Often found below sewage outfalls where carp congregate.

**RANGE:** Statewide in proper habitat.

**SIMILAR SPECIES:** The rounded shape, corrugated wing, and coarse W-shaped beak sculpture are unique.

**HOSTS:** Bass, sunfishes, crappies, and carp.

**DERIVATION:** Latin, *complanatus* - flattened.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Species of concern

**ELONGATE**

# Black Sandshell

*Ligumia recta*

**DESCRIPTION:** Large-sized, very elongate, solid, pointed. Beaks low and wide with no obvious sculpture. Shell yellow to black, often with green rays. Hinge teeth well-developed but fine. Nacre white often flushed with pink or purple, rarely uniformly pink or purple. Sexes look different.

**SIZE:** To 7 inches in length.

**HABITAT:** Rivers, large creeks, and lakes, in muddy sand and cobble.

**RANGE:** Statewide in most rivers and Lake Erie.

**SIMILAR SPECIES:** It differs from the spike in nacre color and lacks the coarse beak sculpture of that species. The similarly sized and shaped yellow sandshell is yellow and waxy.

**HOSTS:** Bass, sunfishes, yellow perch, crappies, walleye, and carp.

**DERIVATION:** Latin, *rectus* – straight, upright.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Threatened

**ELONGATE**

# Eastern Pondmussel

*Sagittunio nasutus*

**DESCRIPTION:** Medium-sized, very elongate, thin, pointed. Beaks low and wide with fine W-shaped sculpture. Shell yellow to tan, usually with faint green rays. Hinge teeth well-developed but fine. Nacre always white. Sexes somewhat different.

**SIZE:** To 4½ inches in length, usually 2½-3½ inches.

**HABITAT:** Rivers, ponds, and lakes, in muddy sand and cobble, often in backwaters.

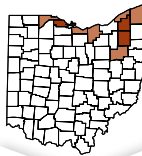
**RANGE:** The Atlantic Ocean and up the St. Lawrence River to the Great Lakes. In Ohio it occurs in the Cuyahoga River and around the western basin of Lake Erie.

**SIMILAR SPECIES:** It differs from the spike in nacre color and lacks the coarse beak sculpture of that species.

**REMARKS:** Previously in *Ligumia*.

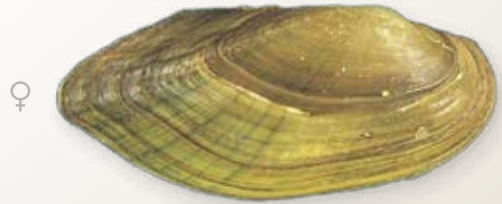
**HOSTS:** None identified.

**DERIVATION:** Latin, *nasutus* – having a large nose.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



**STATUS:** ■ Threatened

**ELONGATE**

# Pondhorn

*Unio merus tetralasmus*

**DESCRIPTION:** Medium-sized, elongate, rather thin, pointed posteriorly. Beaks low and wide, beak sculpture of concentric, backwards-facing ridges. Shell otherwise sculptureless. Shell yellow to brown, rarely with faint green rays. Hinge teeth well-developed but small. Nacre always white. This species is simultaneously hermaphroditic (both male and female at the same time). All sexually mature individuals have a "female" shell outline.

**SIZE:** Usually 3-4 inches in length.

**HABITAT:** Muddy sand in rivers, creeks, and large lakes.

**RANGE:** Ohio is on the eastern edge of this prairie species' range. Records are sporadic.

**SIMILAR SPECIES:** The giant floater may resemble this species but lacks any hinge teeth and has double-looped beak sculpture. The beak sculpture of the pondhorn is diagnostic.

**HOST:** Golden shiner.

**DERIVATION:** Greek, *tetralasma* – four teeth.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**

**STATUS:** ■ Common

**ELONGATE**

# Spike

*Euryntia dilatata*

**DESCRIPTION:** Medium-sized, very elongate. Beak sculpture of thick parallel ridges. Shell otherwise sculptureless. Shell brown or tan often with faint green rays. Hinge teeth well-developed but not massive. Nacre usually purple, occasionally white, rarely salmon or yellow.

**SIZE:** Usually 2½-3½ inches in length, rarely to 5 inches.

**HABITAT:** Rivers, creeks, and large lakes in stable cobble and sand.

**RANGE:** Statewide.

**SIMILAR SPECIES:** The kidneyshell never has purple nacre and lacks the heavy beak ridges.

**HOSTS:** Bass, catfishes, crappies, sculpins, and sauger.

**REMARKS:** In older accounts as *Elliatio dilatata*.

**DERIVATION:** Latin, *dilato* – wide, referring to the elongate shape of the shell.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**

**STATUS:** ■ Endangered

**ELONGATE**

# Yellow Sandshell

*Lampsilis teres*

**DESCRIPTION:** Large-sized, very elongate, waxy, cylindrical. Beaks low and broad lacking wavy parallel ridges. Shell sculptureless. Shell yellow, occasionally with faint green rays. Hinge teeth well-developed but not massive. Nacre white, sometimes flushed with salmon. Sexes look different.

**SIZE:** To 5½ inches in length.

**HABITAT:** A big-river species, rarely straying into large creeks, in stable sand and cobble.

**RANGE:** Most records are from the Ohio River and lower Scioto and Muskingum rivers.

**SIMILAR SPECIES:** The black sandshell is brown or black. The fatmucket has wavy beak sculpture.

**HOSTS:** Bass, sunfishes, crappies, gar, and carp.

**DERIVATION:** Latin, *teres* - polished.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**



LACKS  
HINGE TEETH

STATUS: ■ Common

# Creeper

*Strophitus undulatus*

**DESCRIPTION:** Highly variable. Medium-sized, oval, thin but solid. Beaks low and wide, beak sculpture of two to four coarse V-shaped ridges. Shell otherwise sculptureless. Shell yellow or green to brown with numerous green rays. Hinge teeth lacking but hinge often thickened and twisted. Nacre white or yellowish, often with a darker flush under the hinge.

**SIZE:** Usually 2½-3 inches in length.

**HABITAT:** Rivers, creeks, and large lakes, in stable sand, cobble, and clay.

**RANGE:** Statewide.

**SIMILAR SPECIES:** The cylindrical papershell has finer beak sculpture, but the two species may be difficult to distinguish.

**HOSTS:** Catfishes, bass, darters, shiners, and sunfishes.

**DERIVATION:** Latin, *undulata* – undulating [hinge line].



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

LACKS  
HINGE TEETH

STATUS: ■ Common

# Cylindrical Papershell

*Anodontooides ferussacianus*

**DESCRIPTION:** Medium-sized, thin, fragile, elongated, often cigar-shaped. Low beaks have two to four fine, V-shaped ridges. Often patterned with blurred green rays. Hinge lacks teeth. Nacre always white.

**SIZE:** Usually 2-2½ inches.

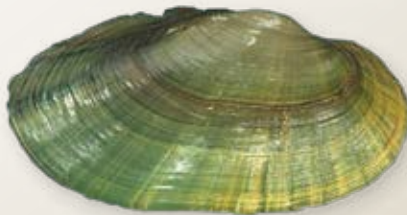
**HABITAT:** This is an extreme headwater species often found in intermittent pools in clay bottoms.

**RANGE:** Statewide in headwater streams.

**SIMILAR SPECIES:** The creeper is nearly identical and may be difficult to separate. The beak sculpture of the creeper is similar but heavier than that of the cylindrical papershell.

**HOSTS:** Suckers, sculpins, shiners, darters, bass, and minnows.

**DERIVATION:** Named for Baron André Étienne Justin Pascal Joseph François d'Audebert de Férussac, a famous French zoologist.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

LACKS  
HINGE TEETH

STATUS: ■ Common

# Eastern Floater

*Pyganodon cataracta*

**DESCRIPTION:** Medium-sized, very thin and fragile, elongate. Beaks very low (but not flush with the dorsal margin) and wide, beak sculpture of wavy concentric ridges. Shell green, posterior slope darker. Hinge teeth absent. Nacre iridescent white.

**SIZE:** Usually 3-4 inches in length.

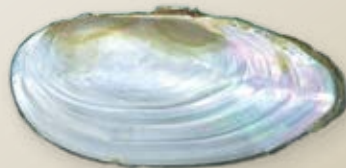
**HABITAT:** Lakes, ponds, and backwaters in silty sand.

**RANGE:** Recorded from northeastern Ohio prior to 1920. It may still occur there, confused with the giant floater.

**SIMILAR SPECIES:** The giant floater has double-looped beak sculpture. The paper pondshell has the beak flush with the dorsal margin.

**HOSTS:** Bass, sunfishes, suckers, and carp.

**DERIVATION:** Latin, *cataracta* – waterfall.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

LACKS  
HINGE TEETH

**STATUS:** ■ Common (introduced)

# Flat Floater

*Utterbackiana suborbiculata*

**DESCRIPTION:** Very large, flattened, thin and fragile, nearly circular in profile. Beak sculpture of weakly undulating or W-shaped ridges. Sculptureless. Hinge lacks teeth. Nacre always iridescent white, occasionally flushed with pink or yellow.

**SIZE:** To at least 8 inches in length.

**HABITAT:** Usually found in muddy backwaters.

**RANGE:** An invasive species from the Mississippi River system, probably introduced on bait fishes. Sporadic in Ohio.

**SIMILAR SPECIES:** The very large, thin, flat, circular shell is unique in Ohio.

**HOSTS:** Catfishes, sunfishes, bass, crappies, and shiners.

**DERIVATION:** Latin, *suborbiculata* – almost round.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES

LACKS  
HINGE TEETH

STATUS: ■ Common

# Giant Floater

*Pyganodon grandis*

**DESCRIPTION:** Highly variable. Medium to very large-sized, thin and fragile, elongate to oval. Beaks prominent and wide, beak sculpture of double-looped ridges. Shell green to brown. Hinge teeth absent. Nacre iridescent white, sometimes discolored with salmon patches.

**SIZE:** Usually 3-4 inches in length, some up to 8 inches.

**HABITAT:** Ubiquitous in silty sand; less common in flowing water.

**RANGE:** The most common species in Ohio; often invades farm ponds on stocked fishes.

**SIMILAR SPECIES:** The eastern floater has wavy concentric beak sculpture. The paper pondshell has the beak flush with the dorsal margin.

**HOSTS:** Virtually any fish.

**DERIVATION:** Latin, *grandis* – large.



All Records ■  
Since 1980 ■

RECORDED  
COUNTIES



LACKS  
HINGE TEETH

STATUS: ■ Common

# Paper Pondshell

*Utterbackia imbecillis*

**DESCRIPTION:** Medium-sized, elongate, very thin. Beaks are flush with the dorsal margin, beak sculpture of fine double-looped ridges. Shell otherwise sculptureless. Shell yellow to green, occasionally with faint green rays, posterior slope often darker. Hinge teeth absent. Nacre always iridescent white. This species is simultaneously hermaphroditic (both male and female at the same time). All sexually mature individuals have a "female" shell outline.

**SIZE:** Usually 2½-3 inches in length.

**HABITAT:** Muddy sand in ponds, impoundments, and lakes.

**RANGE:** Statewide, often around ponds and impoundments.

**SIMILAR SPECIES:** The combination of the beaks flush with the dorsal margin and lack of teeth is unique.

**HOSTS:** Catfishes, sunfishes, and chubs.

**DERIVATION:** Latin, *imbecillis* – feeble or weak.



All Records ■

Since 1980 ■

RECORDED  
COUNTIES





**STATUS:** ■ Endangered

**RARE**

# Northern Riffleshell

*Epioblasma rangiana*

**DESCRIPTION:** Medium-sized, compact. Umbo low and wide, no obvious sculpture. Shell smooth. Female with greatly expanded posterior. Shell tan or brown with faint green rays. Hinge teeth well-developed. Nacre white. Sexes look very different.

**SIZE:** To 2¾ inches in length, usually 2-2¼ inches.

**HABITAT:** It lives in rivers and creeks in stable cobble/sand.

**OHIO RANGE:** Once sporadic in Ohio, including the Bass Islands, now only known from Big Darby Creek.

**SIMILAR SPECIES:** Males are almost indistinguishable from male White Catspaw. Females are unique in their greatly expanded posterior.

**HOSTS:** Hosts are darters and sculpins.

**REMARKS:** Previously *Epioblasma torulosa rangiana*.

**DERIVATION:** Named for Paul Charles Léonard Alexandre Rang, an early student of mussels.



All Records ■

Since 1980 ■

**RECORDED  
COUNTIES**

**STATUS:** ■ Endangered

**RARE**

# Purple Catpaw

*Epioblasma obliquata*

**DESCRIPTION:** Medium-sized, compact. Beaks prominent and wide. Shell smooth except for serrations on the edge of the female shell. Shell tan or brown with faint green rays. Hinge teeth well-developed. Nacre purple. Sexes look very different.

**SIZE:** Usually about 2½ inches in length.

**HABITAT:** This rare species occurs in rivers and large creeks in stable cobble and sand.

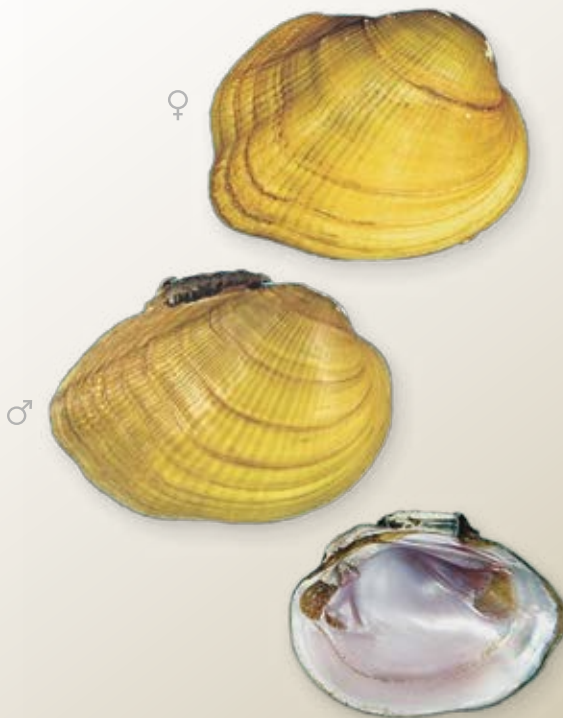
**RANGE:** Although there are rare records across the state it now is known only from Killbuck Creek.

**SIMILAR SPECIES:** The white catpaw has white nacre.

**HOSTS:** Darters and sculpins.

**REMARKS:** Once thought to be possibly extinct, the only remaining population is in Ohio.

**DERIVATION:** Latin, *obliquus* – oblique, referring to the shape of the shell.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**

**STATUS:** ■ Endangered

**RARE**

# White Catspaw

*Epioblasma perobliqua*

**DESCRIPTION:** Small-sized, compact. Beaks prominent and wide. Shell smooth except for serrations on the edge of the female shell. Shell tan or brown with faint green rays. Hinge teeth well-developed. Nacre white. Sexes look very different.

**SIZE:** Usually to 2 inches.

**HABITAT:** This extremely rare species occurs in rivers and creeks in stable cobble and sand.

**RANGE:** Known only from the Maumee River system, it was last seen in Fish Creek in the 1980s.

**SIMILAR SPECIES:** The purple catspaw has purple nacre.

**HOSTS:** Presumably darters and sculpins.

**REMARKS:** Previously as *Epioblasma obliquata perobliqua*. It is possibly extinct.

**DERIVATION:** Latin, *per* – very + Latin, *obliquus* – very oblique, referring to the shape of the shell.



All Records ■  
Since 1980 ■

**RECORDED  
COUNTIES**



# OHIO EXTIRPATED MUSSELS

These species are gone from the state



**SPECTACLECASE**  
(*Cumberlandia monodonta*)



**CRACKING  
PEARLYMUSSEL**  
(*Hemistena lata*)



**EASTERN ELLIPTIO**  
(*Elliptio complanata*)



**SCALESHELL**  
(*Leptodea leptodon*)



**HICKORYNUT**  
(*Obovaria olivaria*)



**RING PINK**  
(*Obovaria retusa*)



**WHITE WARTYBACK**  
(*Plethobasus cicatricosus*)



**ORANGEFOOT  
PIMPLEBACK**  
(*Plethobasus cooperianus*)



**ROUGH PIGTOE**  
(*Pleurobema plenum*)



**WINGED MAPLELEAF**  
(*Quadrula fragosa*)

# EXTINCT MUSSELS

These species are presumed to be gone from the planet



**LEAFSHELL**

*(Epioblasma flexuosa)*



**FORKSHELL**

*(Epioblasma lewisii)*



**OHIO RIFFLESHELL**

*(Epioblasma cincinnatiensis)*



**ROUND COMBSHELL**

*(Epioblasma personata)*



**TUBERCLED BLOSSOM**

*(Epioblasma torulosa)*

# HUMAN USE AND PROTECTION

## HUMAN USE

For at least 10,000 years, Native Americans have employed freshwater mussels for a variety of uses: ornamental, ceremonial, utilitarian, and as a food item. Having an iridescent nacre, or mother-of-pearl lining, mussels were valued as jewelry.

At one time, freshwater mussel shells were used to form buttons and this industry flourished on the Ohio River. Overharvesting, falling prices from a glutted market, and the invention of plastic buttons eventually ended this wasteful practice. In Ohio the remains of button factories may still be found in places such as Manchester and Cincinnati.

Of particular interest to humans were pearls. Pearls are the result of a foreign object (sand grain, twig, insect, etc.) being trapped between the mussels' shells. In order to protect its delicate tissues, the mussel deposits shell material around the source of the irritation. Over time this may grow to be a pearl. Large, flawless, gem-quality real pearls are rare and require decades to form. Most of the pearls sold today are not genuine but are cultured and can be produced in two to three years.

## PROTECTION

The Ohio Division of Wildlife has been instrumental in protecting native mussels, investing financial resources into the research, management, and protection of them.

Perhaps 70% of all North American mussel species are extinct or imperiled. As a result, many of these mussels are protected by law. Many species are protected by the Endangered Species Act, and many more are protected by state laws. In Ohio it is illegal to collect, harm, or harass any freshwater mussel – live, dead, rare, or common – without the proper permits. Ohio is perhaps the most proactive state in the conservation of mussels: strict regulations coupled with active research, surveys, and educational programs make Ohio a leader in the management of these rare animals.



Passive Integrated Transponders (PIT) tag on northern riffleshell mussel





# PUBLICATION FUNDING

Funding for this publication was provided in part by donations to the state income tax checkoff program, sales of the cardinal license plate, and the Ohio Wildlife Legacy Stamp.

For more information about Ohio's native wildlife, please contact the Division of Wildlife:

**1-800-WILDLIFE**

*(1-800-750-0750 Ohio Relay TTY only)*

**WILDOHIO.GOV**

To mail a donation, send to:

**WILDLIFE DIVERSITY FUND**

2045 Morse Road, Bldg G.  
Columbus, OH 43229-6693

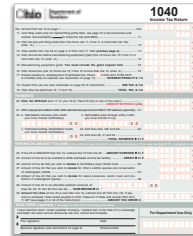
### To purchase a Legacy Stamp:

Call the Division of Wildlife at  
**1-800-WILDLIFE** or visit  
**wildohio.gov**



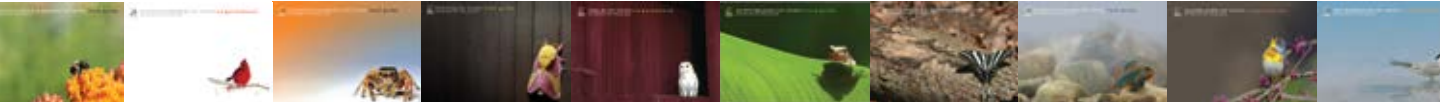
### To make a donation:

Go to the second page of the  
1040 income tax form for the  
**tax checkoff program**



### To purchase a license plate:

Visit your local registrar's  
office or call the **BMV** at  
**1-888-PLATES3**



## OTHER OHIO DIVISION OF WILDLIFE BOOKLETS

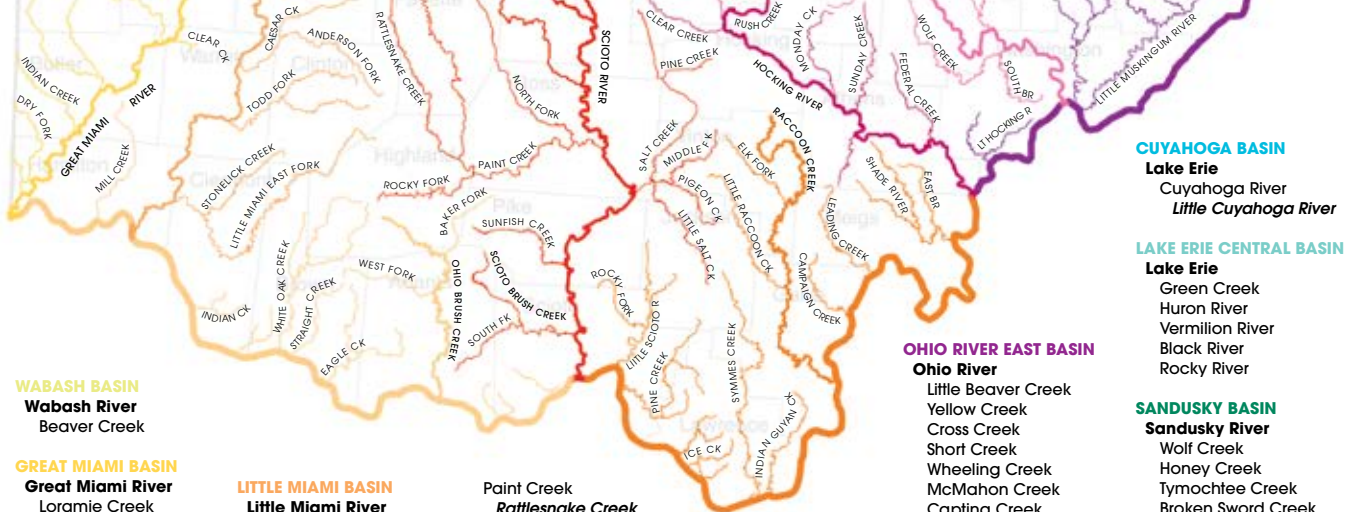
- Pub 5127 - Stream Fishes of Ohio
- Pub 5140 - Common Spiders of Ohio
- Pub 5204 - Butterflies & Skippers of Ohio
- Pub 5320 - Dragonflies & Damselflies of Ohio
- Pub 5334 - Sportfish of Ohio

- Pub 5344 - Mammals of Ohio
- Pub 5348 - Amphibians of Ohio
- Pub 5349 - Warblers of Ohio
- Pub 5354 - Reptiles of Ohio
- Pub 5386 - Raptors of Ohio

- Pub 5414 - Common Birds of Ohio
- Pub 5418 - Waterbirds of Ohio
- Pub 5423 - Owls of Ohio
- Pub 5467 - Moths of Ohio
- Pub 5473 - Common Lichens of Ohio

- Pub 5488 - Common Bees & Wasps of Ohio
- Pub 5494 - Spring Wildflowers of Ohio
- Pub 5509 - Trees of Ohio
- Pub 5512 - Freshwater Snails of Ohio
- Pub 5527 - Millipedes of Ohio





**WABASH BASIN**

**Wabash River**  
Beaver Creek

**GREAT MIAMI BASIN**

**Great Miami River**  
Loramie Creek  
Stillwater River  
Spring Creek  
Honey Creek  
Wolf Creek  
Twin Creek  
Clear Creek  
Seven Mile Creek  
Indian Creek  
Dry Fork  
Mad River

**OHIO RIVER WEST BASIN**

**Ohio River**  
Mill Creek  
Indian Creek  
White Oak Creek  
Straight Creek  
Eagle Creek  
Ohio Brush Creek  
*West Fork*  
*Baker Fork*

**LITTLE MIAMI BASIN**

**Little Miami River**  
Little Miami East Fork  
Todd Fork  
Caesar Creek

**SOUTH POINT BASIN**

**Ohio River**  
Little Scioto River  
Pine Creek  
Ice Creek  
Symmes Creek  
Indian Guyan Creek  
Raccoon Creek  
Campaign Creek  
Leading Creek  
Shade River

**SCIOTO BASIN**

**Scioto River**  
Scioto Brush Creek  
Sunfish Creek  
Salt Creek

Paint Creek  
*Rattlesnake Creek*  
*Rocky Fork*  
Deer Creek  
Big Darby Creek  
*Little Darby Creek*  
Little Walnut Creek  
Big Walnut Creek  
*Alum Creek*  
*Blacklick Creek*  
Olentangy River  
*Whelstone Creek*  
Mill Creek  
Bakes Creek  
Little Scioto

**HOCKING BASIN**

**Hocking River**  
Federal Creek  
Sunday Creek  
Monday Creek  
Clear Creek  
Rush Creek

**MUSKINGUM BASIN**

**Muskingum River**  
Wolf Creek  
*South Branch*  
Moxahala Creek  
Jonathan Creek  
Licking River  
*Rocky Fork*  
Willis Creek  
Walhonding River  
*Kokosing River*  
*North Branch*  
*Mohican River*  
*Killbuck Creek*  
*Apple Creek*  
Tuscarawas River  
*Stillwater Creek*  
*Conotton Creek*  
*Sugar Creek*  
*Sandy Creek*

**OHIO RIVER EAST BASIN**

**Ohio River**  
Little Beaver Creek  
Yellow Creek  
Cross Creek  
Short Creek  
Wheeling Creek  
McMahon Creek  
Captina Creek  
Sunfish Creek  
Little Muskingum River  
Little Hocking River

**MAHONING BASIN**

**Beaver River (PA)**  
Mahoning River  
*Mosquito Creek*  
*Meander Creek*  
*Eagle Creek*  
Shenango River (PA)  
*Pymatuning River*  
*Yankee Creek*

**LAKE ERIE EAST BASIN**

**Lake Erie**  
Chagrin River  
Grand River  
Ashtabula River  
Conneaut Creek

**CUYAHOGA BASIN**

**Lake Erie**  
Cuyahoga River  
*Little Cuyahoga River*

**LAKE ERIE CENTRAL BASIN**

**Lake Erie**  
Green Creek  
Huron River  
Vermilion River  
Black River  
Rocky River

**SANDUSKY BASIN**

**Sandusky River**  
Wolf Creek  
Honey Creek  
Tymochtee Creek  
Broken Sword Creek

**PORTAGE BASIN**

**Portage River**  
Portage River  
*Middle Fork*  
*East Branch*  
Muddy Creek

**MAUMEE BASIN**

**Maumee River**  
Tiffin River  
St. Joseph River  
St. Marys River  
Auglaize River  
*Blanchard River*  
*Ottawa River*  
Swan Creek

**OTTAWA BASIN**

**Ottawa River**  
Ten Mile Creek





# DIVISION OF WILDLIFE

OHIO DEPARTMENT OF NATURAL RESOURCES

## MISSION STATEMENT

To conserve and improve fish and wildlife resources and their habitats for sustainable use and appreciation by all.

Ohio Division of Wildlife is the state agency responsible for managing Ohio's fish and wildlife resources. The primary source of funding for the division comes from the sale of hunting and fishing licenses, federal excise taxes on hunting, fishing, and shooting equipment, and donations from the public. We care about all wildlife and maintaining stable, healthy wildlife populations. Our challenge is to balance the needs of wildlife, habitat, and people.

### PUBLICATION 5517

Total Printed: 10,000 Unit cost: \$0.39 Publication date: 9/22