

ZEBRA MUSSELS

(Dreissena polymorpha)

INTRODUCED INVADER!

Zebra Mussels were first introduced to the United States in 1988 near Detroit, Michigan. Since then, they have spread and can be found from coast to coast. While not all lakes and rivers are infested with zebra mussels, once infested, zebra mussels can drastically change the complexion of a water body. Like all mussels, Zebra Mussels are filter feeders. However, Zebra Mussels are known for their ability to filter large quantities of water and removing zooplankton from the water column which are an essential food for young fish.



In some cases zebra mussels can produce up to one million eggs per year, allowing them to take over lakes and rivers very quickly. It is estimated that zebra mussels cause over 100 million dollars in damage a year. To prevent the spread of zebra mussels, please check your boat for mussels as you move from one body of water to another.

Generally about an inch long, they can be identified by their triangle shape and the zebra pattern on their shells.

LEGAL STATUS

Per New York State regulations:

It is illegal to collect or harvest living freshwater mussels in New York without a special scientific collection permit issued by the NYS Department of Environmental Conservation

NATURAL HISTORY

There are over 1000 species of freshwater mussels in the world with over 300 species in North America. New York is relatively mussel-rich with 50 species primarily in the southern part of the state, but there are only three known species of mussels on Fort Drum.

The average freshwater mussel lives about 10 years, but some species like the Eastern Pearl Shell found in the western Adirondacks can live up to 100 years!

Historically, freshwater mussels were an important food source for Native Americans. During the early 1900's, freshwater mussels were exploited to make buttons for clothing which led to significant population declines. The invention of plastic buttons has since replaced mussel shell buttons. Today, many mussel species are endangered due to water pollution, construction of dams, and competition with invasive Zebra Mussels.

Like saltwater oysters, freshwater mussels can produce pearls, although it is not common. Pearls are actually produced as a defense mechanism. When a foreign object gets inside the shell and becomes an irritation, the natural defense of the mussel (or oyster) is to cover the foreign object with a nacre substance; the same material used in forming the inside of a mussel shell. The nacre substance around the irritant forms the pearl.

Anatomy of a Freshwater Mussel

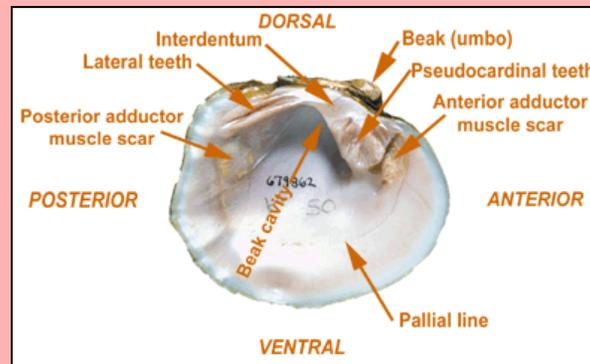


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Cover Photos: (top) Black Sandshell Mussel feeding; (middle) pile of Pearly Mussels; and (bottom) Ouachita Kidneyshell Mussel.



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EASTERN ELLIPTIO

(*Elliptio complanata*)

The Eastern Elliptio is one of the most abundant mussels in North America and is the most common mussel found on Fort Drum. The Eastern Elliptio can live up to 15 years and can be found in both fast and slow moving water bodies, and in almost any substrate type, allowing them to thrive in lakes, rivers, ponds and streams. This mussel is a vital food source for muskrats and otters.

The Eastern Elliptio has a history of being very resilient and widespread because of its ability to withstand conditions other mussels can not, such as pollution, dam building and dredging. They have also withstood heavy harvesting in the late 1800's and early 1900's, when their shells were used to make buttons.



This species is easily identified by their shape and color. The outside of their shell is often a dark brown, while the inside or nacre has a purple hue. The picture above depicts a typical Eastern Elliptio mussel.

EASTERN FLOATER

(*Pyganodon cataracta*)

The Eastern Floater is another widespread and common species. They can be found in a variety of habitats, but are most commonly found in calm protected waters with sandy or muddy bottoms. The Eastern Floater is found in numerous locations around Fort Drum, but is most abundant in Indian Pond. The Eastern Floater often exceed 10 inches in length and is the largest mussel found on Fort Drum.

The Eastern Floater is found along the east coast of the US and is secure throughout most of its range; though it is less abundant in southern states. These mussels can be easily identified by their brittle green and yellow shells. Because their shells are so brittle, predators can easily crack them open making them a preferred food source for many wildlife species.



EASTERN LAMPMUSSEL

(*Lampsilis radiata*)

The Eastern Lampmussel is the rarest mussel on Fort Drum. They tend to reside in moderate- to fast-flowing streams and rivers, but can be found in larger bodies of water as well. The Eastern Lampmussel prefers sandy or gravel substrate, but will colonize a variety of other substrates if sandy sediments aren't available. This mussel has thus far only been found in two locations on Fort Drum; Indian Lake and the Indian River.

Though not legally protected in New York, the Eastern Lampmussel is classified as endangered or critically imperiled in many states such as Pennsylvania, North Carolina, and Delaware.



The Eastern Lampmussel can be identified by its circular shell, which is often yellow and green, but older specimens tend to turn brown. Another key identifying feature are the distinct dark lines which run vertically down their shells.

Eastern Lampmussels can live up to 30 years making them the longest lived species of mussel on Fort Drum.

FRESHWATER MUSSEL I.D.

- 1a. Mussel shell triangle-shaped with alternating light and dark banding (Fig. 1).....Zebra Mussel
- 1b. Not as above.....2
- 2a. Mussel shell circular in shape (Fig. 2)..... Eastern Lampmussel
- 2b. Mussel shell elongate in shape (Fig. 3).....2
- 2a. Lateral Teeth Present (Fig. 4).....Eastern Elliptio
- 2b. Lateral teeth absent (Fig. 5).....Eastern Floater



Figure 1. Zebra Mussel



Fig. 2 Eastern Lampmussel



Figure 3. Eastern Floater



Figure 4. Eastern Elliptio



Fig. 5 Eastern Floater