

AIS

Aquatic Invasive Species

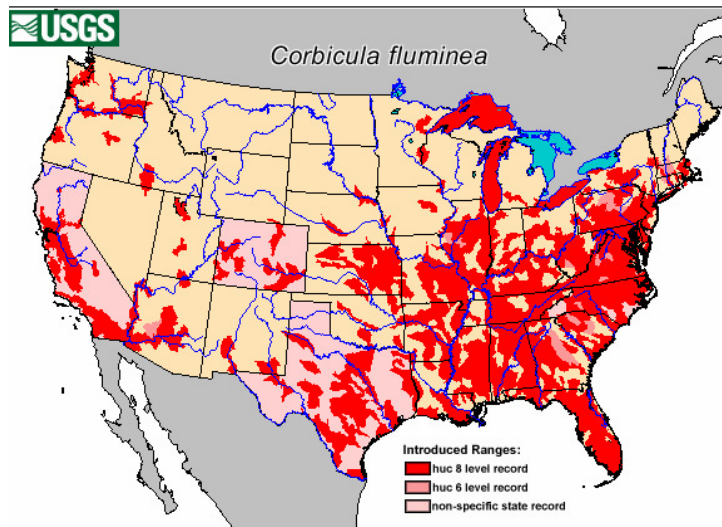
ASIATIC CLAM



COMMON NAME: Asiatic Clam, Asian Clam, or Corbicula

SCIENTIFIC NAME: *Corbicula fluminea*

DISTRIBUTION: The Asian clam is indigenous in temperate to tropical southern Asia and east to the Mediterranean, southeast Asian islands, eastern and central Australia, and Africa, except in the Sahara desert. Since being discovered in the United States in 1924, this species has now spread to 40 U.S. states and the District of Columbia. Asiatic clam is well established in Indiana.



DESCRIPTION: This freshwater bivalve mollusk with distinct concentric rows of elevated ridges on the shells. The shell is rounded to slightly triangular. The exterior is usually brown in color but can vary to a yellowish-gold. The nacre, or interior of the shell, is usually white to light purple. The average adult size is rarely larger than 1.5 inches.

LIFE CYCLE BIOLOGY: *Corbicula fluminea* prefers sand or gravel substrates in areas with running water. These filter feeders can be found at sediment surface or slightly buried beneath. A tube-like siphon draws water, food, and dissolved oxygen into the body and a second exhalent siphon expels water and wastes. This small clam moves by means of a strong muscular foot. The Asiatic clam has the ability to secrete a mucous thread from within the gills; this thread performs like a dragline, catching the current which pulls the clam off the bottom to allow it to float downstream. Robert S. Prezant of the University of Southern Mississippi reports this to be the first clam to have such a “booster thread.”

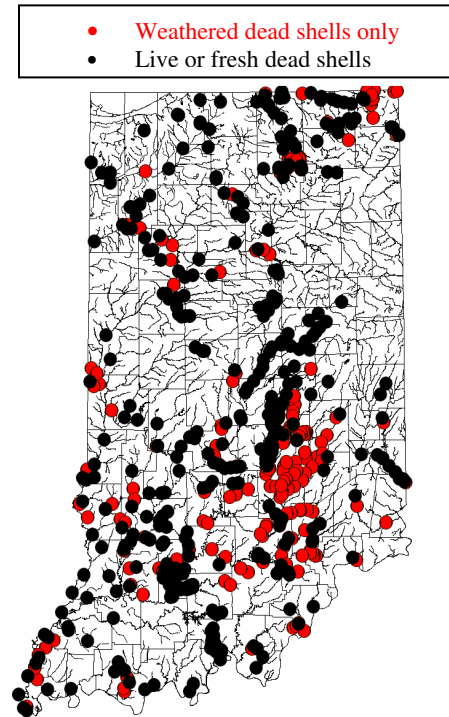
This species of clam is hermaphroditic, meaning that an individual produces both eggs and sperm, and is capable of self-fertilization. While self-fertilization occurs, they will also release sperm into the water that can be captured by other clams for fertilization of eggs. One small clam can produce as many as 400 larvae per day or up to 70,000 per year! The Asian clam can reach densities of 10,000 to 20,000 clams per square meter in a very short time.

Asiatic clams do not do well in water temperatures below 36° F (2° C). This explains the sparse distribution along the northern tier of the United States. Reproduction generally occurs in water temperatures above 61° F (16° C). This species can live in slightly brackish water (salinity up to 13ppt) but is viewed as a freshwater species.

PATHWAYS/HISTORY: The first record of *Corbicula fluminea* in the United States was documented in 1924 on the west coast, and it was discovered later in the Columbia River in Washington in 1937. This species was thought to enter the U.S. as a food item by Chinese immigrants. By the 1970s, the Asian clam had found its way into most of the Mississippi Basin, the Gulf Coast and on the east coast. By 1990, this species was recorded in New Jersey, Delaware, New York and Connecticut.

DISPERSAL/SPREAD: The primary means of dispersion of the Asiatic clam is through human transport, by way of water transfer through recreational activities, accidental transfer with imported aquaculture, and intentional introduction to provide a food item. *Corbicula* is occasionally sold for use in aquariums or water gardens. Passive movement via water currents is also a considerable means of distribution.

RISKS/IMPACTS: The most significant impact of the Asian clams’ introduction has been biofouling. Biofouling is the impairment or degradation of something as a result of the growth or activity of living organisms. Power plants, drinking water treatment systems, and other industries who withdraw water have suffered in areas where the clams reach high densities resulting in the shells clogging and reducing the volume of water



withdrawn from a body of water. The Asian clam also has been shown to cause problems in the pipes and canals of irrigation systems. Like most invasive species, this clam competes with native species for limited resources.

MANAGEMENT/PREVENTION: The use of screens and traps to “filter” out these adult clams from water systems is a means of mechanical control. Hot water can be injected into pipes containing Asian clams to kill the individuals. Chemicals, such as chlorine and bromine, have been proven to effectively kill juveniles and adults, however many environmental agencies have regulations restricting the use of these chemicals. Some states have regulations prohibiting the import, transport or possession of this species in order to attempt to control its numbers and limit the spread. In Indiana, it is illegal to possess a live Asiatic Clam (312 IAC 9-9-3).

By learning about the Asian clam and educating yourself on the ecological and economical impacts is a start to help stop their spread. You can also help by practicing a few good techniques for stopping the spread of any aquatic invasive species.

- ✓ Never empty your bait bucket into a different body of water from where you obtained your bait. Dispose of unused bait in the trash
- ✓ Never transfer live fish from one body of water to another.
- ✓ Remove all plant fragments and rinse any mud or debris from equipment and wading gear before leaving the access area.
- ✓ Drain all water from your boat before leaving the launch site.

REFERENCES:

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