

NONINDIGENOUS SPECIES INFORMATION BULLETIN: Asian clam, *Corbicula fluminea* (Müller, 1774) (Mollusca: Corbiculidae)

IDENTIFICATION: Adults can reach 50 mm in length. The shell is ovate and deep at the hinge. The exterior of the shell is normally a yellow-green to brown in color with thick, concentric rings. The inside of the shell is layered with polished, light purple nacre. They have three cardinal teeth in each valve with two lateral serrated teeth in each side of the right valve and only one in each side of the left valve.



NATIVE RANGE: This is a freshwater species inhabiting southern and eastern Asia (Russia, Thailand, Philippines, China, Hong Kong, Taiwan, Korea, and Japan) and Africa.

LIFE HISTORY: The sexes are normally separate, however, hermaphrodites exist and are capable of self-fertilization. The spawning season lasts about 6 months starting in early summer. Fertilization takes place in the inner gills. The first larval stage called a trochophore (15-20 microns) develops on the inner gill. The second stage called the veliger (~0.2 mm) is incubated on the gill also. This is when the

characteristic D-shaped shell begins. At approximately 1 mm, the juvenile is discharged and begins its adult life on the bottom. Pigments and growth rings should then be visible. They reach maturity at 6-10 mm with a life span of about 1-4 years. Their primary source of food is phytoplankton.

HABITAT: Found in sandy and muddy bottomed streams, rivers, ponds, lakes, and man-made canals. They can also withstand degraded waters.

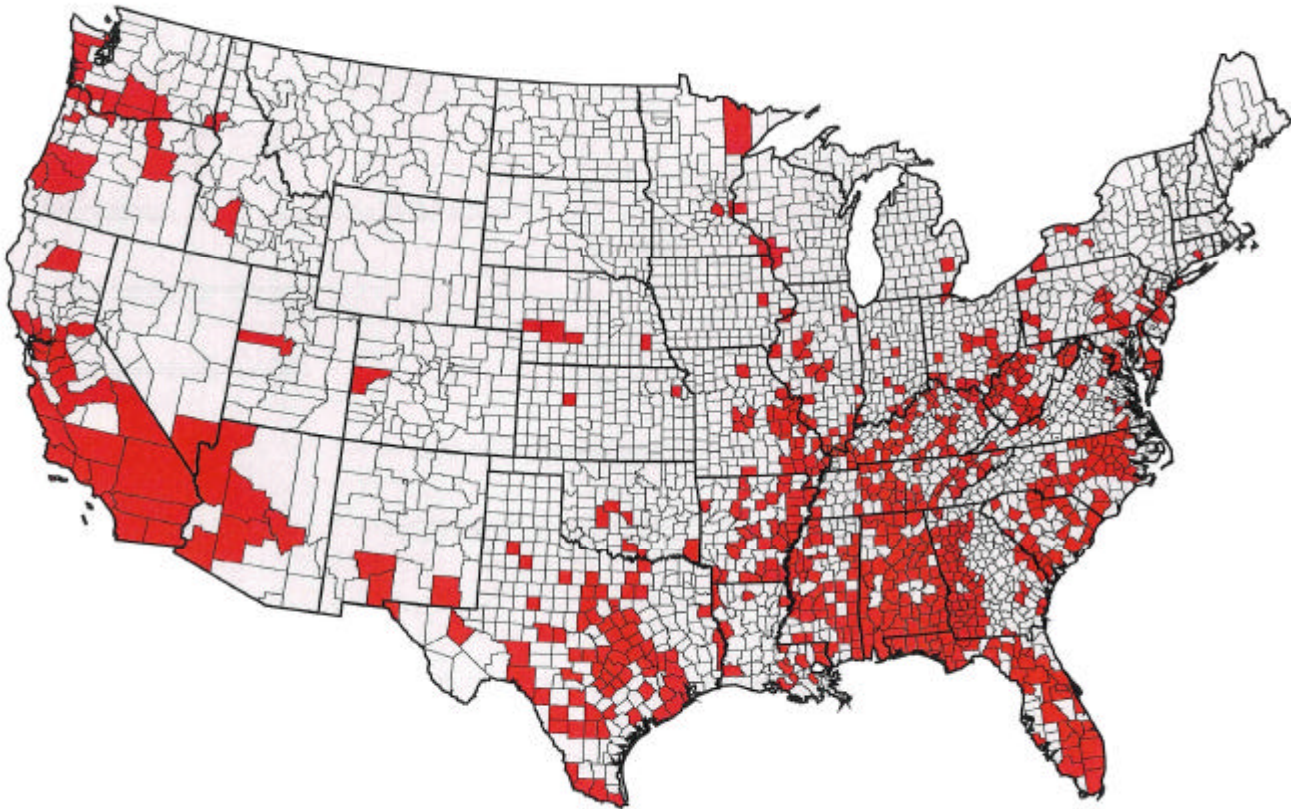
MEANS OF INTRODUCTION: The source of first introduction to North America is unknown. It is suspected that this species was brought from China by immigrants as a food source and subsequently released.

NONINDIGENOUS OCCURRENCES: First found in California in 1938 where they spread quickly by way of irrigation canals. A big migration east occurred when they were discovered in the Ohio River in 1957. Throughout the US, they can be found in many drainages except for the several states in the northern plains and the northeast. The Asian clam has long been recognized as a pest as far back as the 1950s in irrigation systems of California. *Corbicula* continues to expand its range into uninfested waters especially in the Midwest and Northeast.



IMPACTS: The Asian clam is a known biofouler in power plant and industrial water systems and has also caused problems in irrigation canals and pipes. Ecologically, this species can alter benthic substrates and compete with native mussel species for food and space.

CONTROL and MANAGEMENT: The Asian clam is likely to spread in North America until it reaches its lower temperature tolerance. In closed environments, such as power plants, mechanical or chemical control methods can be employed to reduce or eliminate this species where problems occur. To eliminate the source of many introductions, navigation and dredging activities should be investigated.



***Corbicula fluminea* occurrences by counties.**

If you have collected or observed this species, or know of someone who has, please call the **Nonindigenous Aquatic Species Toll-Free Hotline, 1-877-STOP-ANS** and report the information. Or, report it using our website, <http://nas.er.usgs.gov/>.