

# Asian Clam

*Corbicula fluminea*  
syn. *Corbicula manilensis*, *C. leana*, *C. fuminalis*



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Fabio Moretzsohn, Texas A&M University-Corpus Christi, Bugwood.org



Shawn Liston, Audubon of Florida, Bugwood.org

## Overview:

The Asian clam is a freshwater clam species native to Southeast Asia<sup>2</sup> where it is used for human consumption and feed for domestic fowl.<sup>1</sup> It is sold as fish and via the aquarium trade as “pygmy” or “gold” clams in the U.S. It was introduced to North America possibly as a food product<sup>2</sup> but has spread throughout the Mississippi River basin by the 1970s.<sup>3</sup> Juvenile clams can be introduced around the globe via ballast water.<sup>1</sup>

Asian clams are hermaphroditic, meaning each individual has both sexual organs, and are capable of self-fertilization.<sup>1</sup> Therefore, a single individual could result in an infestation. High reproductive rates can result in clam densities reaching 10,000 to 20,000 per square meter, with a single clam releasing an average of 400 juveniles per day.<sup>1</sup>

The high population densities of Asian clams can clog water intake pipes with live clams, empty shells, and dead body tissue. In the US, in 1980, the cost of clearing Asian clams from nuclear service water systems was estimated at 1 billion dollars annually.<sup>1</sup> Floating dead clams can also clog water intake screens.<sup>1</sup>

Asian clams are present in three of the Great Lakes, on the Quebec side of the St. Lawrence River and on Vancouver Island.<sup>2</sup>

As of January 1, 2016, the possession, sale, or transport of this species in Alberta is illegal under the Fisheries Act.

## Habitat:

Asian clams can inhabit lakes and streams with silt, sand, mud, or gravel

bottoms, but prefer fine or coarse, clean sand. For short periods they can tolerate salinities up to 13 ppt.<sup>1</sup> Asian clams can tolerate water temperatures between 2 to 30°C, require high dissolved oxygen concentrations of flowing water, and are intolerant of pollution.<sup>1</sup>

## Identification:

Asian clams have a small, oval-triangular shell usually less than 25 mm across but can grow to 65 mm<sup>1</sup>. The shells have evenly spaced ridges on the surface<sup>1</sup> and the clam has a muscular foot, which facilitates movement.<sup>2</sup> There are two colour morphs - a yellow-green to light brown shell colouration and a dark brown one. The yellow morphs have a white nacre (inside) and the brown morphs have a dark brown or purple nacre.<sup>4</sup> The anterior and posterior of the hinge bear lateral teeth with fine



# Asian Clam (continued)

serrations.<sup>4</sup>

## Ecology:

Asian clams possess both sexual organs and are capable of self-fertilization. Sperm is released into the water, caught by another clam, and then brooded in the gills.<sup>1</sup> Larvae are released via the excurrent siphon in to the water. Larvae spawned early season can reach sexual maturity by the fall. Spawning can occur year round if water temperatures exceed 16°C; reproductive rates are highest in the fall.<sup>1</sup> A single clam can release 400 juveniles in a day and up to 70,000 per year.<sup>1</sup> Larvae disperse passively in water currents.<sup>4</sup>

Adult clams lie on or slightly buried in silt, sand or gravel.<sup>3</sup> Average lifespan is 2 to 4 years, depending on habitat, but can reach a maximum of 7 years.<sup>1</sup>

## Economic Impacts:

Asian clams cause significant costs to water treatment plants and hydro power stations by clogging pipes and filters.<sup>1</sup> Environmental impacts of *C. fluminea* could also have impacts on recreation and tourism.

## Environmental Impacts:

Asian clams are filter feeders and compete directly with many native clams for food resources and habitat space.<sup>1</sup> This can have impacts on biodiversity and food chains.<sup>2</sup>

## Sociological Impacts:

Asian clams are vectors for a variety of parasites of danger to humans

consuming poorly cooked or raw clams.<sup>4</sup> The transformation of native aquatic communities results in the intrinsic loss of natural capital and enjoyment of natural areas. Asian clam infested waterbodies could have negative impacts on shoreline property values.

## Prevention:

Learn how to identify Asian clams and how to prevent spread. If you find an Asian clam, report it. Asian clams used for bait can escape into water bodies. Asian clams have been used in aquaria.<sup>3</sup> Never, ever empty your aquarium into natural water bodies.

Asian clams can be spread by recreational equipment. Inspect boats and other water recreational equipment after each use, removing any plant or other debris after exiting the water. Live wells and motors should be drained on dry land. Rinse all equipment with very hot water or let dry in the sun for at least 5 days.<sup>2</sup>

Asian clams can be transported in ballast water. The Canadian government's Ballast Water Program and The International Convention for the Control and Management of Ships' Ballast Water and Sediments are designed to prevent the introduction of non-native aquatic species.

## Control:

Currently there are no established control options for golden mussels other than preventing introduction.



Fabio Moretzsohn, Texas A&M University-Corpus Christi, Bugwood.org



Fabio Moretzsohn, Texas A&M University-Corpus Christi, Bugwood.org



# Asian Clam *(continued)*



U.S. Geological Survey, U.S. Geological Survey, Bugwood.org



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

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