

# AISS

## Aquatic Invasive Species

### CHANNELED APPLE SNAIL

Photos and diagram by Stijn Ghesquiere  
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**COMMON NAMES:** Channeled apple snail, Gold variant apple snail

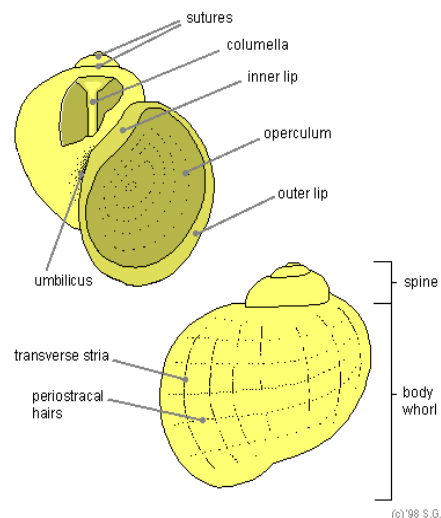
**SCIENTIFIC NAME:** *Pomacea canaliculata*

Apple snails belong to the phylum: Mollusca, class: Gastropoda (snails), subclass: Prosobranchia, order: Mesogastropoda, family: Ampullariidae (apple snails).

**DISTRIBUTION:** *Pomacea canaliculata* is distributed throughout the Amazon Inferior Basin and the Plata Basin: Southeast Brazil, Argentina, Bolivia, Paraguay and Uruguay. The snail also invaded in the Southern parts of the United States (Texas and Florida, up to central Ohio) and Hawaii.

**Indiana:** Three snails of the genus *Pomacea* were found in Lake Wawasee in the fall of 2002. There are no members of the apple snail family native to Indiana.

**DESCRIPTION:** The shell of this apple snail species is spherical and relatively heavy with 5 to 6 whorls which are separated by a deep, indented suture (the spiral seam marking). The shell opening (aperture) is large and oval to round. Males are known to have a rounder aperture than females. The umbilicus (see anatomy diagram) is large and deep. Body color of the channeled apple snail varies from yellow to brownish black.



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**LIFE CYCLE BIOLOGY:** The diet of the channeled apple snail consists of all types of plants. This species of apple snail spends its days submerged and hidden in vegetation and is more active at night. The activity rate of this snail varies with the water temperature.

*Pomacea canaliculata* is sexual mature at around 1 inch in size. During fall and winter, the reproduction is at its lowest and rising spring temperatures increase

reproduction. The reddish eggs, numbering from 200-600, are loosely attached to each other and to an object above the waterline. By depositing the eggs out of water, egg predation by fish is reduced.



**PATHWAYS/HISTORY:** In the 1980's, channeled apple snails were introduced in Taiwan to start an escargot industry. Instead of becoming a useful human food resource, they escaped to rice fields and became serious rice eating pests. Through human introduction, this apple snail has rapidly spread to Indonesia, Thailand, Cambodia, Hong Kong, southern China, Japan, Philippines, and Hawaii and there are indications that they are invading Australia. The channeled apple snail also has been distributed and used in the United States to control nuisance aquatic plants.

**DISPERSAL/SPREAD:** The channeled apple snail has been widely distributed by the hobbyist aquarium industry because of their tolerance to warmer temperatures than that of the mystery snail (also used to control aquaria plant growth). However, this snail's voracious appetite gave it a bad reputation in the trade. This adversity may have contributed to the release of this species in non-native areas. Birds may also transport these large snails or eggs may be transported on aquatic vegetation.

**RISKS/IMPACTS:** Like all invasive species, the channeled apple snail has the potential to compete with native species for limited resources. Channeled apple snails feed on all types of aquatic plants; large consumption of plants could alter the natural balance of a water system. Their rapid and profuse reproduction coupled with their lack of predators in the United States could make their population explode causing further problems.

**MANAGEMENT/PREVENTION:** Once established, there is no way to eradicate all channeled apple snails. There are no chemicals available that will selectively eliminate the invasive snails. In areas where the snail is damaging agricultural crops, aggressively hand picking the snails and the use of domestic carnivorous ducks has reduced the snail population by 95%.

Like all invasive species, the key to preventing their spread is knowledge! You can help by practicing a few good techniques for stopping the spread of the channeled apple snail and other aquatic invasive species.

- ✓ DO NOT release any aquaria species in the natural environment. Euthanize animals and dispose of plants in the trash if you no longer wish to care or them.

- ✓ If you insist on keeping non-native snails, do so in an aquarium and not in outdoor ornamental ponds.
- ✓ Remove all plant fragments, rinse any mud or debris from equipment and wading gear, and drain any water from boats before leaving an access area. The transportation of plant fragments on boats, trailers, and in live wells is one of the main introduction routes of snails and other aquatic invasive species to new lakes and rivers.

#### **REFERENCES:**

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