

LAKE BRANTLEY INFESTED WITH INVASIVE SNAILS



Channeled apple snails from Lake Brantley

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On Tuesday, June 29th, personnel from FDEP and the Seminole County Stormwater Division visited Lake Brantley in Longwood with the intent of collecting aquatic plants. When they arrived, they were surprised to find thousands of very large snails in the lake. They later identified them as the channeled apple snail (*Pomacea canaliculata*). This is not a native snail, but one that originated in South America. It has been introduced into many areas around the world, where it has become a very serious agricultural pest (mainly of rice and taro) and threatens many natural lakes and wetlands due to modification of habitat and competition with native species.

Several factors make channeled apple snails a serious environmental threat:

- **They eat virtually all types of aquatic plants.** In recent experiments, we found that they will readily consume almost any type of aquatic plant presented to them, being particularly fond of softer, less coarse plants like southern naiad (*Najas guadalupensis*), eelgrass (*Vallisneria americana*), and fanwort (*Cabomba caroliniana*). Large-scale consumption of plants in Lake Brantley could threaten the balance of the lake and lead to water-quality problems.
- **They reproduce rapidly, repeatedly, and profusely.** Especially during the warm months, females lay many large clusters of up to 1000 pink eggs. These clusters are easily visible several inches above the water on docks, seawalls, trees, and plant stems. Compared to the eggs of native apple snails (*Pomacea paludosa*), those of *Pomacea canaliculata* are smaller, pinker, and more numerous (see photo). Eggs hatch in one to two weeks, releasing hundreds of 2mm juveniles into the lake.
- **They have few predators in Florida.** Although there might be some predation by alligators, large turtles, and a few large birds, the effect that these predators have on channeled apple snail populations is likely very limited. Limpkins and endangered snail kites, both natural predators of native apple snails, have been observed feeding on these snails in south Florida, but they are rare.



Channeled apple snail eggs (left) with native apple snail eggs




Channeled apple snail (left) with native apple snail

- **They threaten native species.** Channeled apple snails probably compete with native apple snails for food and habitat. Loss of native apple snails could negatively effect populations of snail kites and other snail-eating vertebrate animals. Their heavy feeding on aquatic plants could impact populations of invertebrates (small animals like aquatic insects, grass shrimps, worms, etc.) that are fed on by small fish,

which are themselves eaten by larger fish like largemouth bass and crappie.

QUESTIONS ABOUT CHANNELED APPLE SNAILS:

- **Are they new to Florida?** No, populations are established in canals in south Florida, in the Tampa area, and in lakes in the Tallahassee area. However, this is the first documented introduction of these snails in Seminole County. Breeding populations also exist in TX, CA, and HI. Individuals have been collected as far north as NC and OH.
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- **How did they get into Lake Brantley?** Exactly how they got into Lake Brantley is not known. Channeled apple snails are frequently marketed in the aquarium trade. They might have been introduced when large snails were released into the lake by aquarists, or possibly as eggs attached to aquatic plants planted in the lake. They are occasionally used for food, so that is another possibility. Other means of introduction, such as dispersal via boats or large birds, or intentional release, are less likely.
 - **Are they edible?** The snails are sometimes eaten, traditionally raw. However, the snails carry a nematode called the rat lung worm (*Angiostrongylus cantonensis*) and other potentially dangerous parasites. Thus, raw consumption is not recommended. Until more is known about their edibility, any consumption of apple snails is probably not a good idea.
 - **Can anything be done about them?** Although there are molluscicides (pesticides for snails) available which are effective on apple snails, the safety and effectiveness of using such products in 285-acre Lake Brantley is uncertain. As mentioned above, biological control by predators is probably minimal in extent. Though of somewhat limited effectiveness, physical removal of eggs and adult snails would help in reducing the numbers of these invasive animals. ***The bright side of this is that the large population of channeled apple snails in Lake Brantley might not last too long. Several years ago, a huge population of another species of apple snails invaded Lake Waunatta in Orange County, but crashed after apparently exhausting much of their food supply.***

WHAT CAN YOU DO TO HELP?

- **Do not spread them around!** Do not transfer snails to other water bodies. Do not keep them in ornamental ponds outdoors, especially if located near a natural water body. If kept in aquaria, do not release them into the environment. If you no longer wish to keep snails kept in an aquarium, place them in a sealed plastic bag and place them in the freezer. Once frozen, put them - still in the bag - into the garbage.
- **Remove eggs and adults.** The pink egg masses are easily removed from hard surfaces near the water. (**Be sure not to remove the larger native apple snail eggs.**) The adults are easily seen and collected from the lake. (They will not harm the collector.)

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