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Alabama Aquatic Nuisance Species Series: Amazonian Apple Snail

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Species Profile

- Scientific Name: *Pomacea maculata*
- Common Name(s): Amazonian apple snail, island apple snail
- Native Region: South America
- Date of US Introduction: 1978
- First Observed in Alabama: 2008
- Known US Range: Florida, Texas, Georgia, Mississippi, Louisiana, South Carolina, and Alabama
- Presumed Means of Introduction: Aquarium trade
- Recognized Impacts: Agricultural pest especially in rice growing areas, consumption of native wetland vegetation, potential human disease vector (nematodes and trematodes)

An Amazonian apple snail with a pink egg mass (Photo credit: Anthony Ford, US Fish and Wildlife Service, Daphne, AL)

Identification

The Amazonian apple snail can be difficult to distinguish from the Florida apple snail which has been found rarely in Alabama. The Amazonian apple snail can grow quite large (up to 4" across), with very round shells with 4-5 whorls. The shells are often yellow-brown, and the snail has an operculum, which it uses to seal up the shell opening. One of the most distinctive aspects of the Amazonian apple snail are the bright pink egg casings that they deposit near the waterline, usually in the springtime, as seen in the photo to the right (Photo credit: Ben Ricks).

How Did They Get Here?

The Amazonian apple snail is one of several large apple snails that are popular with aquarists. When the snails become too large, too abundant, or the aquarium owner no longer wishes to care for the aquarium, the snails, plants, and other animals in the aquarium are sometimes dumped in local waterways. This practice has led to the spread of several invasive, exotic species such as the aquarium plants hydrilla *Hydrilla verticillata* and Eurasian watermilfoil *Myriophyllum spicatum* that have cost many millions of dollars in control and management. The Amazonian apple snail was first found in Mobile County in 2008 and later at one site in Baldwin County. While it is not possible to know for certain, it is likely that the introduction of this invasive snail was from an aquarium source. **Unwanted aquarium plants should be allowed to dry thoroughly and disposed of or composted. Aquarium animals should never be released alive in Alabama's waters, and it is illegal to intentionally stock or release aquatic organisms into the public waters of Alabama.**

Why Are These a Problem?

Apple snails cause several problems. First, they can devastate rice crops, causing economic losses to farmers in neighboring states and reducing food supply in the southeastern U.S. Second, they voraciously consume wetland plants. The damage the snails do by eating the plants can negatively affect all the important functions of our marshes and wetlands. Fish and wildlife (especially waterfowl) habitat can be severely damaged by these aggressive grazers, and they can directly compete with native wildlife for food and essential habitat. Damage to plants reduces the ability of marshes to absorb nutrients and stabilize sediments leading to poor water quality in critical areas such as Mobile Bay and other coastal waters. A loss of these critical wetland plants can also reduce the ability of marshes to buffer the effects of large storms such as floods and hurricanes. Apple snails also serve as hosts of disease-causing trematodes and nematodes, including the rat ringworm

(*Angiostongylus cantonensis*), intestinal fluke (*Echinostoma ilocanum*), and the human endoparasite rat lungworm (*Eosinophilic meningoencephalitis*).

Invasive apple snails mature quickly, reaching sexual maturity with 60-80 days. They can lay more than 2,000 eggs per mass and can lay new clutches of eggs nearly every two weeks. Eggs are laid on hard vertical surfaces near but above water surfaces and incubate for 1-2 weeks, at which point the newly hatched young snails fall into the water. In newly invaded regions, apple snails can spread by both natural migration upstream and downstream, as well as through transport by people.

Control Efforts

Apple snails can be extremely difficult to control and virtually impossible to eliminate once they have become established and are reproducing. Chemical control methods using copper based compounds have been used to treat large areas. Unfortunately, the chemicals do not just kill the apple snails. Copper can be toxic to algae, fish, and other snails and clams. Physical traps are often used to collect adult apple snails. These traps help monitor the snails to determine if they continue to spread. Removing or killing the eggs also reduces the reproduction of the snails. While the public can be vital in reporting the presence of this snail and not moving them to new areas, actual control is best done by trained professionals.

What to Do if You Find One?

1. DO NOT TRANSPORT OR MOVE THEM. It is illegal to transport nuisance, invasive species in the state of Alabama.
2. Record the location and date you find the snail. Take a picture of the animal(s) and use a geo-tag if possible. Ideally, include something in the photograph for scale (e.g., a coin).
3. Report the finding immediately to the Alabama Department of Conservation and Natural Resources, Division of Wildlife and Freshwater Fisheries.
    a. You can find your local fisheries biologist here: http://www.outdooralabama.com/fishing/freshwater/staff/staff.pdf
4. If you are interested in doing more, periodically state agencies may have opportunities for volunteers to assist with control programs. Ask about these opportunities to learn more.

Any person, company, government agency or other entity desiring to stock or release any fish, mussel, snail, crayfish or their embryos into Alabama's public freshwaters must be approved by the Division of Wildlife and Freshwater Fisheries at 334-242-3471, by email by contacting Mr. Nick Nichols, Fisheries section at nick.nichols@dcnr.alabama.gov or by mail at the following address:

Alabama Wildlife and Freshwater Fisheries Division
64 North Union Street
Montgomery, Alabama 36104

Additional Reading

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