INTRA-AND INTER-ANNUAL APPLE SNAIL POPULATION DYNAMICS IN LAKE SEMINOLE

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The introduction of the island apple snail, Pomacea maculata, across tropical and sub-tropical freshwaters is one of the most concerning species' introduction. As a cryptic species, observing and quantifying adults has proved challenging, leading to alternative methods to estimate populations. Pomacea spp. snails deposit egg masses above the water line, and can be identified to species and quantified as a proxy for adult abundance. In Lake Seminole, a reservoir in the Apalachicola-Chattahoochee-Flint (ACF) watershed, P. maculata were first observed in 2003, and subsequent dispersal was noted in 2009. To understand the distribution of P. maculata within Lake Seminole, shoreline surveys during 2013-2016 identified and quantified egg masses across the reservoir and nearby small ponds. Additionally, monthly surveys during 2016 identified peak egg mass production and whether egg mass deposition ceased during the winter. Egg masses of P. maculata and P. paludosa were observed in Lake Seminole each year and during winter months. The extent of P. maculata distribution increased in each survey year, including expansion into arms of the lake not present during previous surveys. We document dispersal of P. maculata from the Flint River arm of the lake to the Spring Creek and Chattahoochee arms of the lake by 2016. Monthly surveys indicated peak production during summer months, and production through December, where previous work suggested no egg masses produced during winter months. We hypothesize that continued dispersal of P. maculata, a voracious herbivore, will potentially alter submerged aquatic vegetation and aquatic food webs within Lake Seminole, among other unknown ecological consequences.

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