Testing Time Variables of Submersion on Pomacea bridgesii Egg Clusters

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The Pomacea maculata (apple snail) is a large, aquatic snail species invasive to the Southern United States. They consume large amounts of vegetation, which leads to wetland erosion as well as macrophytes, which are natural biofilters. We wanted to test if decreased apple snail egg viability could be associated with submersion in water. Snails in the genus Pomacea deposit their eggs above the water line on sturdy surfaces. Several State Parks recommend knocking egg clusters into the water as an eradication method. This is because the egg clusters usually develop out of the water. Because of the regulations of invasive species, a morphologically similar snail, Pomacea bridgesii, was studied as a model of egg survival instead of P. maculata. Our independent variable was time submerged under water after being laid, and we worked with three different stages in embryonic development; the first group was not submerged in water and was used as a control, the second group was submerged in 3.5 cm of water halfway through development, and the third group was submerged in 3.5 cm of water shortly after being laid. The eggs were cultivated in home aquaria. A P. bridgesii egg cluster consists of about 250 eggs. The eggs take two to three weeks to develop, and 36 hours to completely hatch once that process begins. 3 clusters of each group were recorded. We determined that under normal emersed conditions, about 195 snails hatched. In the middle group, we had about 34 hatches from each cluster. In the group where we submerged the eggs directly after hatching, we had 0 hatches for all three clusters. Our data supports the decrease in viability of egg clusters submerged sooner, and increased viability of eggs submerged later.