

Annual Variation in Spatial Coverage of an Invasive Macrophyte within a Shallow, Subtropical Reservoir

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Abstract. Submerged aquatic vegetation (SAV) can affect overall productivity and biogeochemical cycling within aquatic ecosystems. Because SAV can cover large areas, changes in nutrient cycling can alter nutrient transformation and storage within reservoirs. Lake Seminole is a shallow reservoir formed by the Woodruff dam at the confluence of the Flint and Chattahoochee rivers in southwestern Georgia. The SAV community of the lake is dominated by an invasive macrophyte, *Hydrilla verticillata*, which was found in the early 1960s. In order to investigate the effects of SAV on a reservoir scale, SAV must be identified and quantified. During the peak growing seasons of 2012-2014, we used a visual survey by boat followed by post-processing in ArcMap to create vegetation maps and determine the spatial coverage of SAV on Lake Seminole. We found surprising variation in *Hydrilla* coverage during this three-year period. We are currently investigating the relationships between *Hydrilla* coverage and local hydrology as these years spanned both drought and flood conditions. It is important to understand these connections, as Lake Seminole is the last impoundment in the embattled ACF Basin. Downstream water quality within the Apalachicola River is dependent on nutrient transformations within the lake. Thus, future water management planning must consider the contributions of reservoirs to water quality in order to maintain the integrity of the overall drainage basin.