

# 2023 Lake Rim Aquatic Vegetation Survey

## NC Division of Water Resources

### Introduction

Hydrilla, (*Hydrilla verticillata*), is one of the most economically and ecologically damaging invasive plants in the world and can lead to many undesirable outcomes. These include the forming of dense monocultures that crowd out native vegetation, reducing the habitat quantity and quality for aquatic organisms, clogging of municipal water intakes, and severely impacting recreational activities such as boating and swimming. For these reasons, it is considered a federal and state noxious weed which prohibits the import, sale, and movement of Hydrilla without a permit. Hydrilla was first found in Lake Rim in the summer of 2016. Herbicide applications were conducted that fall. Since then, the Wildlife Resources Commission (WRC) and the Aquatic Weed Control Program (AWCP) have worked together to manage Hydrilla in the reservoir. More information concerning past management activities can be found on the AWCP online database ([NCDEQ-DWR :: Aquatic Weed Control \(ncwater.org\)](https://ncdeq-dwr.gov/AquaticWeedControl)).

### Methods

The AWCP completed a full-lake survey of Lake Rim on November 2<sup>nd</sup>. Using a point intercept method, a total of 31 points were sampled in 2023 (Figure 1). Three rake tosses were conducted at pre-determined points along the shoreline to determine presence/absence of SAV as well as quantify rake coverage. Rake coverage was quantified using a scale from 0 to 4 (0 = no vegetation; 1 (Trace) = <25%; 2 (Sparse) = 25% - 50%; 3 (Moderate) = 50% - 75%; 4 (Dense) = 75% - 100%). Additionally, a recording fathometer (SONAR) was used to map and record the bottom. Roughly 2.5 miles of SONAR were logged. The SONAR data was uploaded to a third-party company, Biobase, to quantify the depth and biovolume data. Biovolume is a percentage of the water column taken up by vegetation when vegetation is present. All of this was then combined with the rake-toss data using GIS software to estimate coverage.

### Results

SAV was found at 13, or 42%, of the rake toss points (Figure 2). Species found during the survey include Bladderwort (*Utricularia spp.*) and Proliferating Spikerush (*Eleocharis baldwinii*) (Table 1; Figures 3 – 5). This was the first year that Proliferating Spikerush was found.

Hydrilla was not found at any of the pre-determined rake toss points. However, it was found in the headwaters of the reservoir. There was a large beaver dam that prevented us from going any further upstream, but a visual inspection did not identify any Hydrilla upstream of the dam, except along the upstream slope (Figures 6 – 7). Most of the Hydrilla was found on the downstream side of the dam. It covers an area of roughly 0.2 acres.

Other native aquatic vegetation observed during the survey were Spatterdock (*Nuphar lutea*), Water Lilly (*Nymphaea odorata*) and Watershield (*Brasenia schreberi*).

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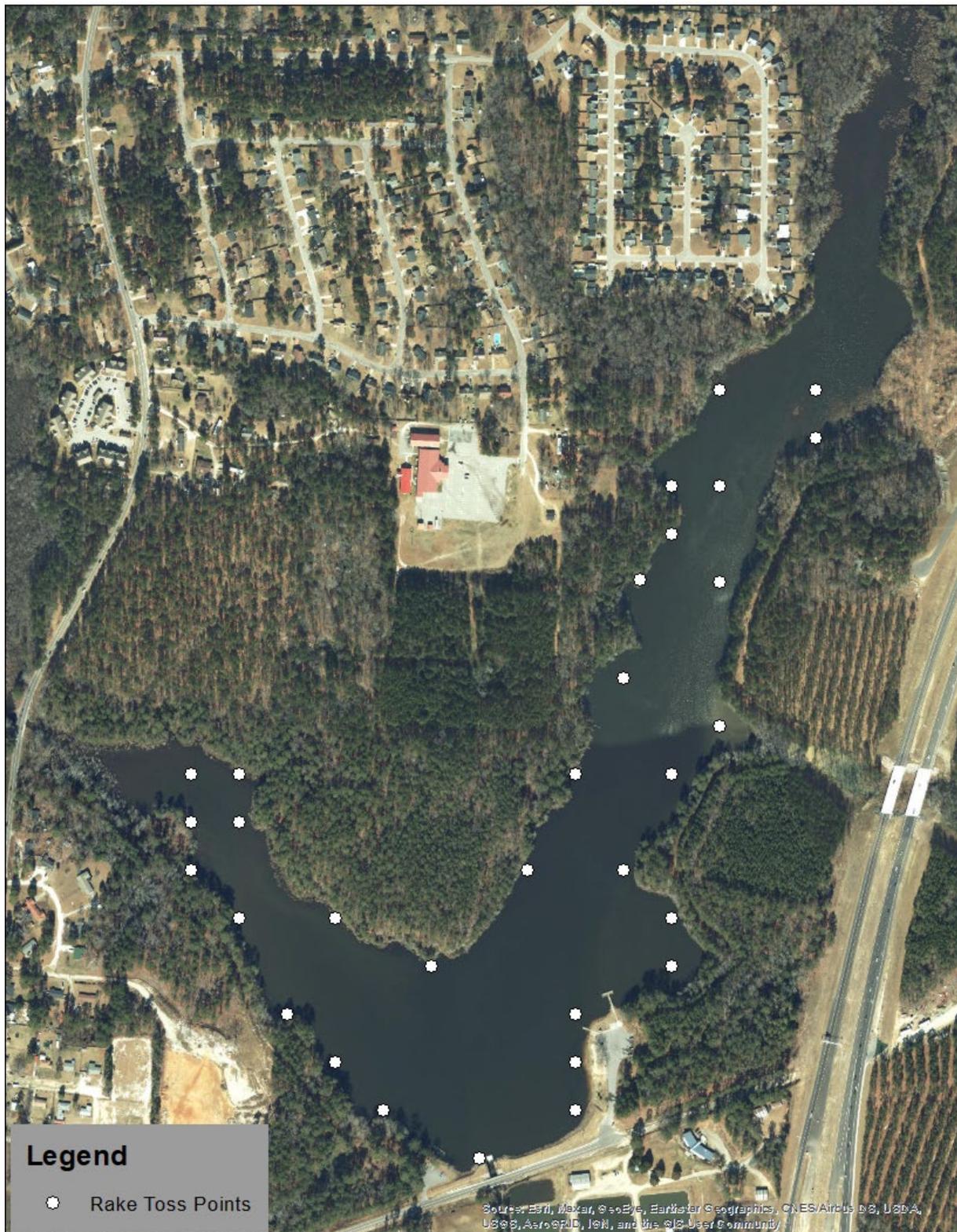


Figure 1. Map showing pre-determined rake toss points.

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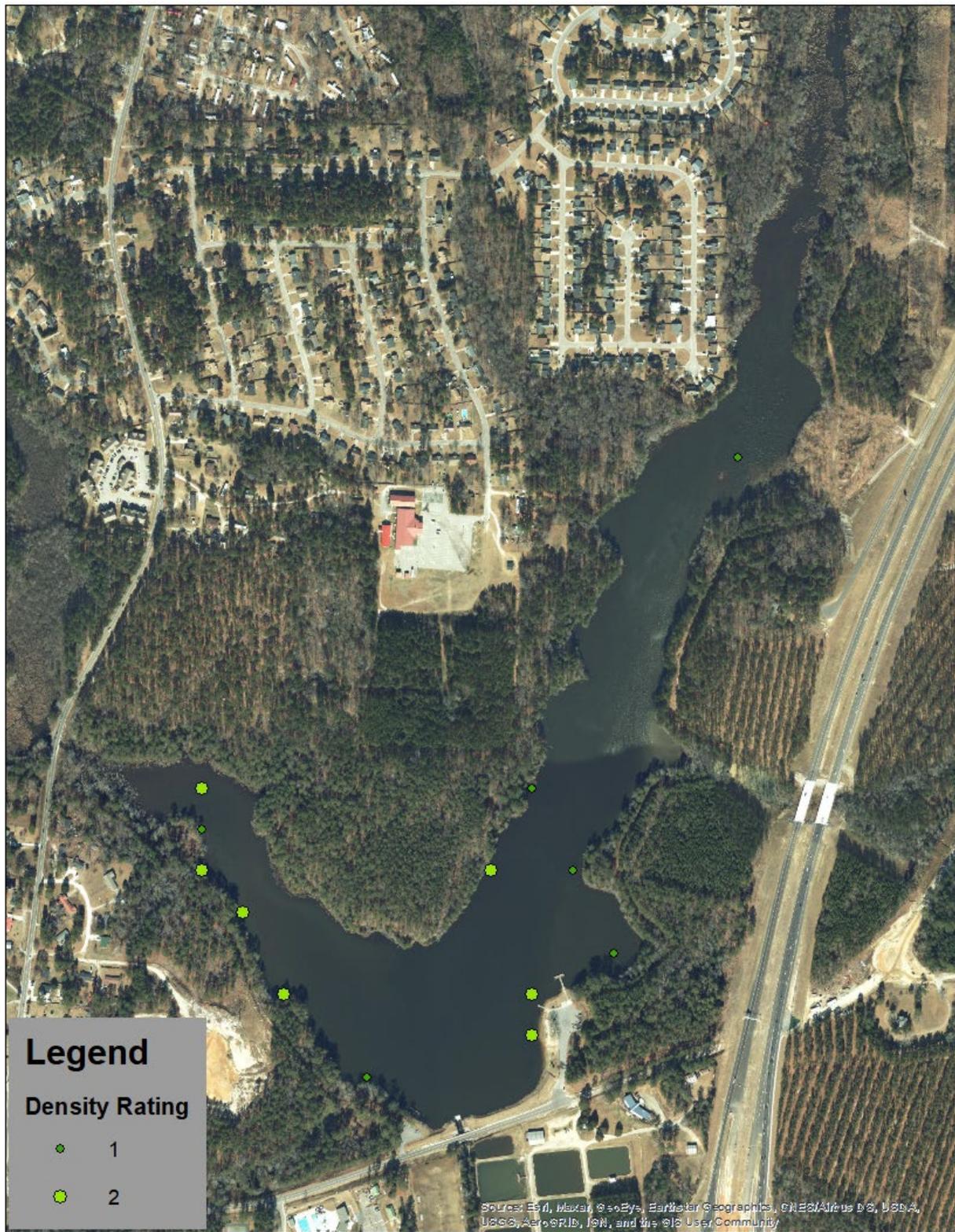


Figure 2. Map showing location of SAV and associated density ratings.

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Species	Total	Density Rating							
		Trace (1)		Sparse (2)		Moderate (3)		Dense (4)	
		Number of points	%	Number of points	%	Number of points	%	Number of points	%
Bladderwort ( <i>Utricularia spp.</i> )	11	4	36%	7	64%	-	-	-	-
Proliferating Spikerush ( <i>Eleocharis baldwinii</i> )	2	2	100%	-	-	-	-	-	-
Vegetated points	13	6	46%	7	54%	-	-	-	-

Table 1. Species abundance during 2023 Lake Rim survey.

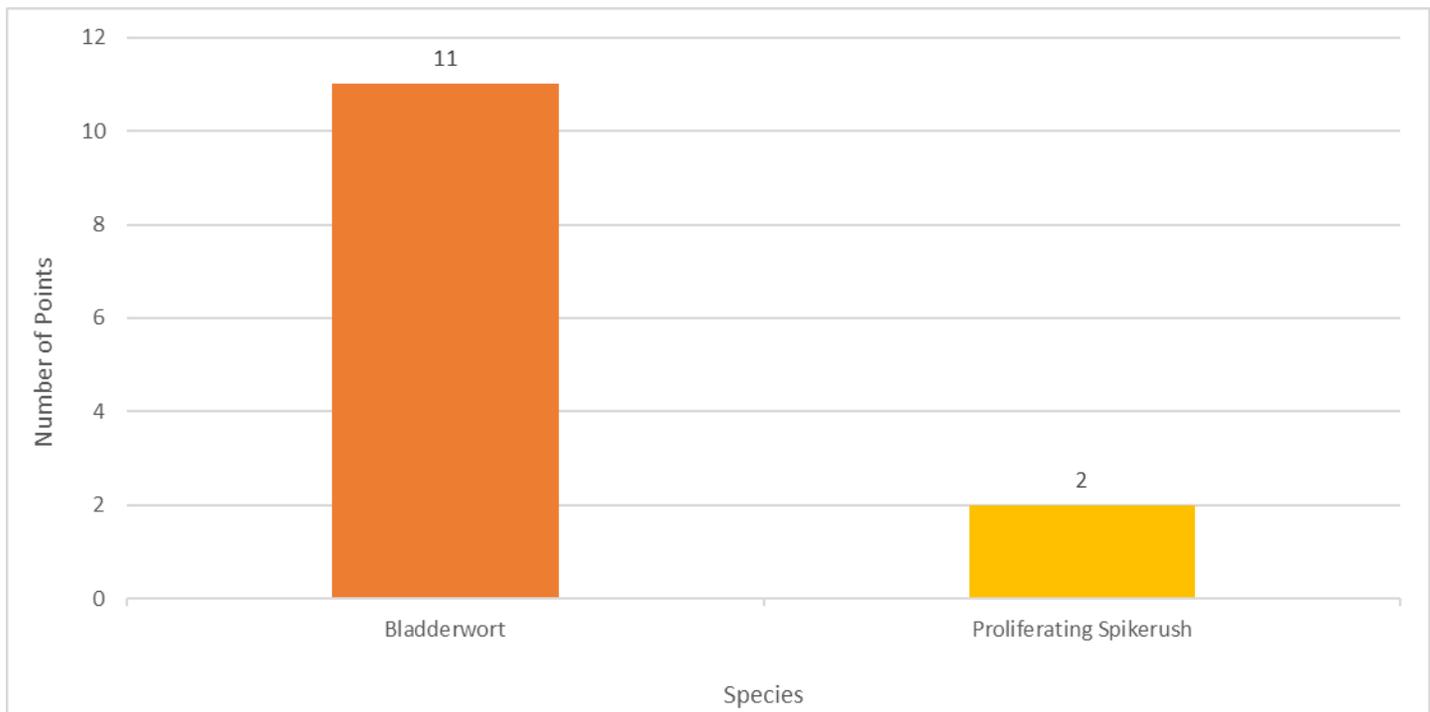


Figure 3. Relative abundance during the 2023 Lake Rim survey.

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Figure 4. Map showing Bladderwort locations and density ratings.

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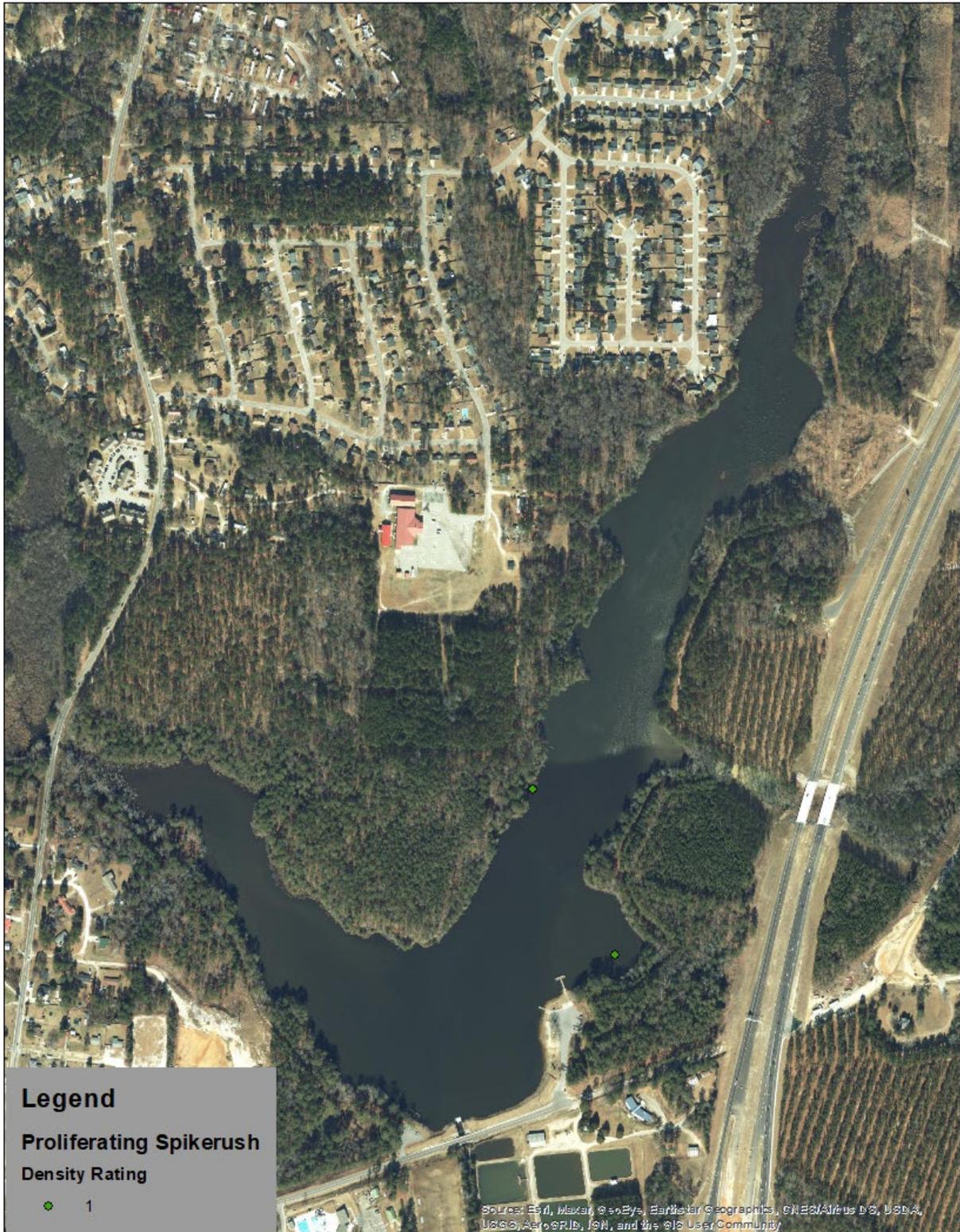


Figure 5. Map showing Proliferating Spikerush location and density rating.

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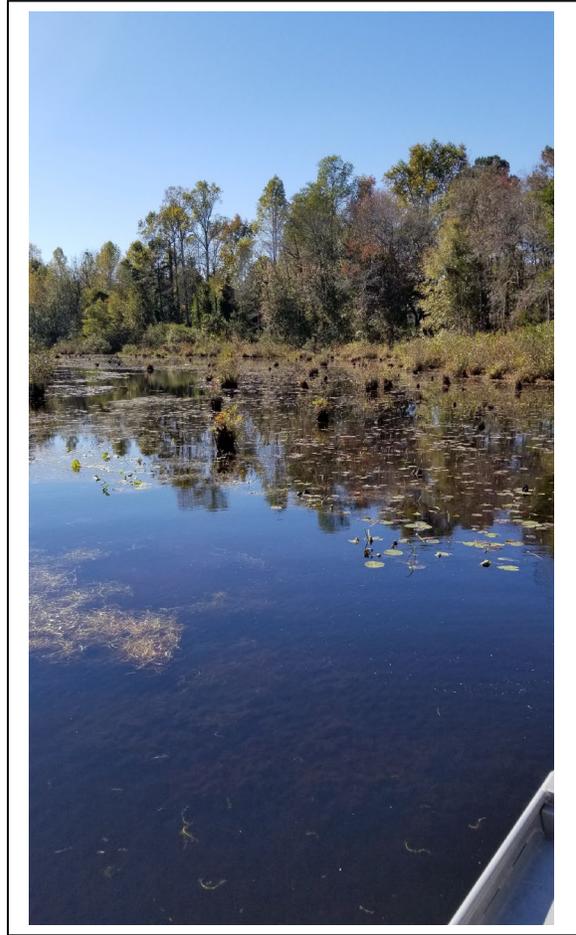
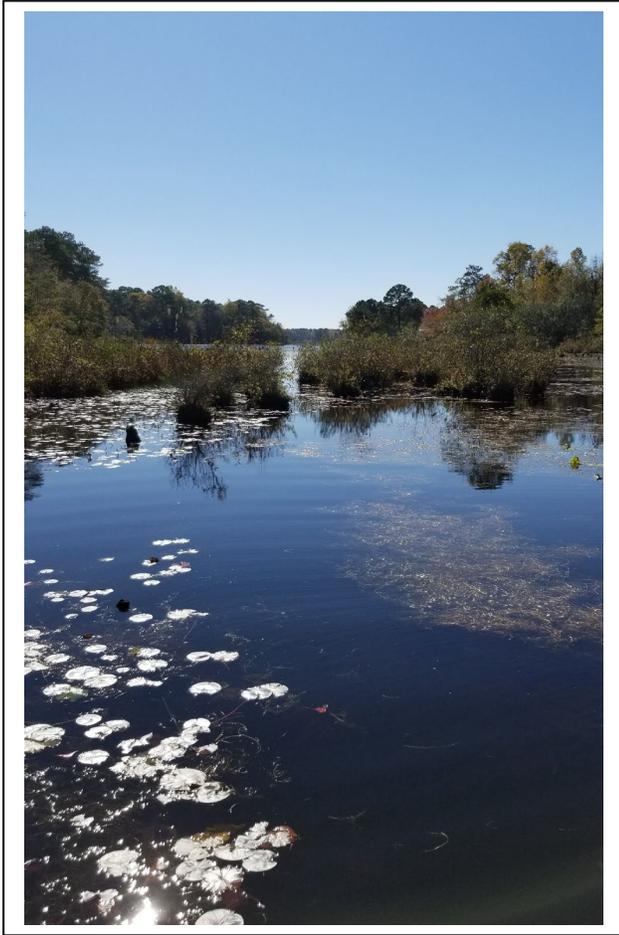


Figure 6. Pictures looking downstream of beaver dam with Hydrilla in the foreground.

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Figure 7. Picture showing beaver dam in headwaters of reservoir.