2021 DWR Submerged Aquatic Vegetation (SAV) Survey Report
Lake Reidsville and Lake Hunt

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. Hydrilla is a federal and state listed noxious aquatic weed and is also recognized as a noxious aquatic weed by the NC Department of Environmental Quality (NCDEQ) which qualifies it for financial assistance from the NCDEQ's Aquatic Weed Control Program (AWCP). In 2017, the City of Reidsville reached out to the Aquatic Weed Control Program (AWCP) regarding vegetation growth in Lake Hunt. A subsequent site visit by staff from the AWCP confirmed that Lake Hunt was infested with Hydrilla. Since then, the AWCP and the City of Reidsville have worked together to manage the infestation in both Lake Hunt and Lake Reidsville. More information concerning past management activities can be found on the AWCP online database (NCDEQ-DWR :: Aquatic Weed Control (ncwater.org)).

Methods

The AWCP conducted a full-lake survey at Lake Hunt on October 12th and a full-lake survey on Lake Reidsville October 14th – October 15th and October 18th. Using a point-intercept method, a total of 59 points were sampled at Lake Hunt (Figure 1) and a total of 127 points were sampled at Lake Reidsville (Figure 2). Three rake tosses were conducted at each point 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 28 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

Lake Hunt

SAV was found at 24, or 41%, of the rake toss points (Figure 5). Species found during the survey included Proliferating Spikerush (*Eleocharis* baldwinii), the macroalgae Chara (*Chara spp.*), Filamentous algae (*Spirogyra spp.*) and the blue-green algae Lyngbya (*Microseira wollei*) (Table 1; Figures 3, 6 – 9). All these species have been found during previous surveys. The estimated coverage of Lyngbya was 4.6 acres (Figure 10).

Other native aquatic vegetation observed during the survey was Spatterdock (*Nuphar lutea*) and Knotweed (*Polygonum spp.*).

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Lake Reidsville

SAV was found at 38, or 30%, of the rake toss points (Figure 11). Species found during the survey include Bladderwort (*Utricularia spp.*), Chara (*Chara spp.*), Hydrilla (*Hydrilla verticillata*), Lyngbya (*Microseira wollei*), and Proliferating Spikerush (*Eleocharis baldwinii*) (Table 2; Figures 4, 12 – 16). All these species have been found during previous surveys.

In 2021 the estimated coverage of Hydrilla was 1.5 acres (Figure 17).

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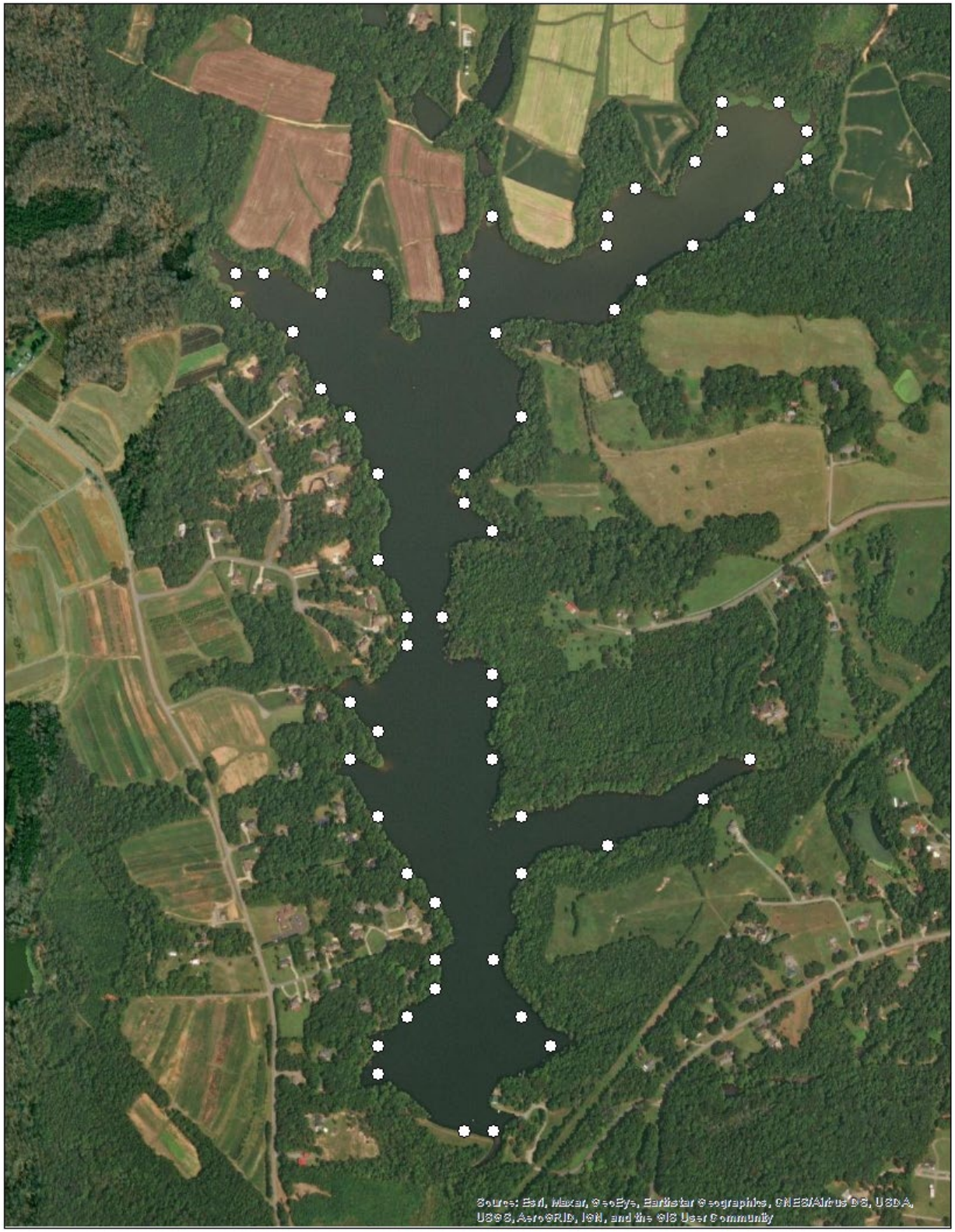

Figure 1. Map showing pre-determined rake toss points at Lake Hunt.

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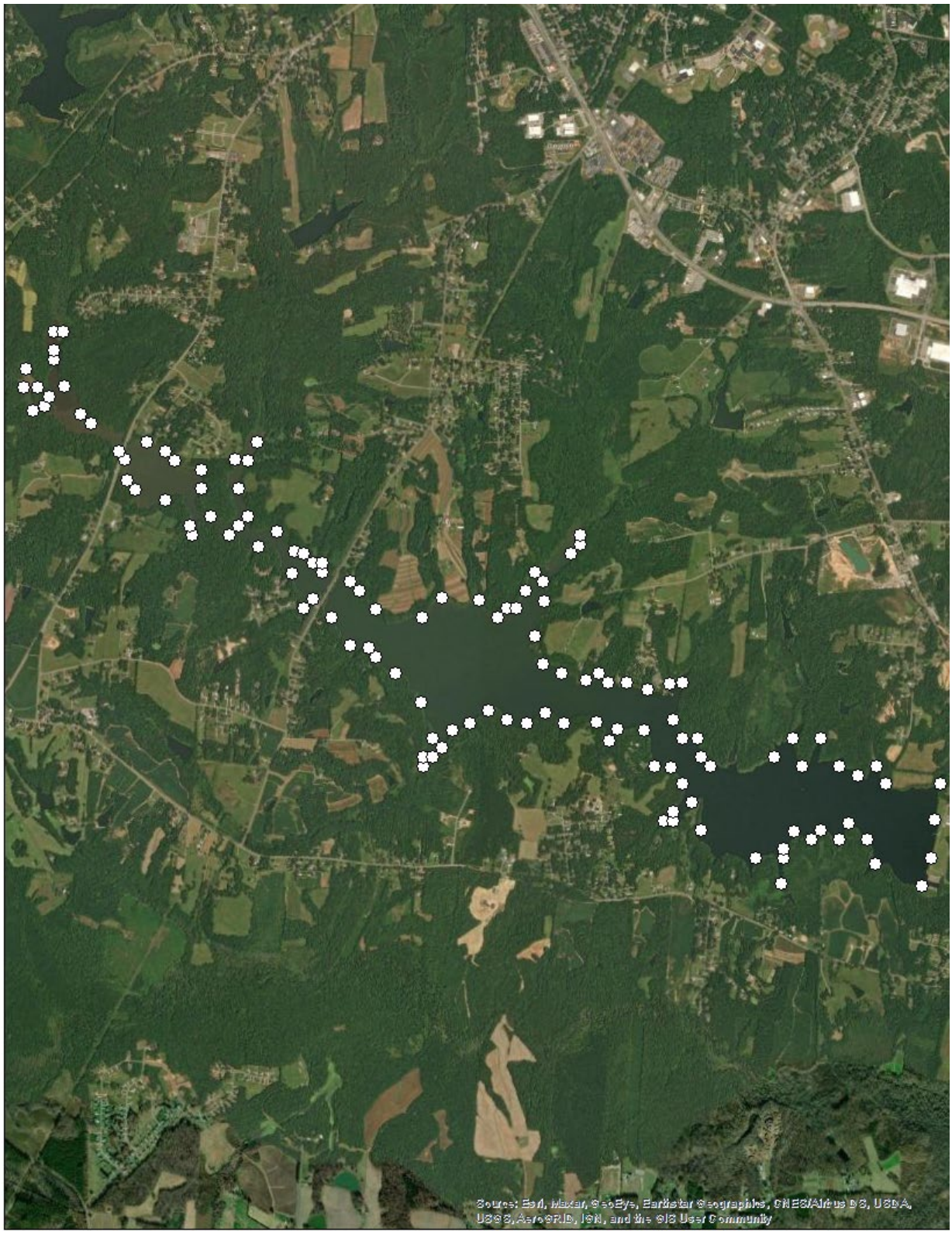

Figure 2. Map showing pre-determined rake toss points at Lake Reidsville.

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Species	Total Number of Points	Density Rating							
		Trace		Sparse		Moderate		Dense	
		Number of points	%	Number of points	%	Number of points	%	Number of points	%
Chara (*Chara spp.)*	4	1	25%	2	50%	0	0%	1	25%
Filamentous algae (*Spirogyra spp.*)	3	3	100%	0	0%	0	0%	0	0%
Proliferating spikerush (*Eleocharis baldwinii*)	6	5	83%	1	17%	0	0%	0	0%
Lyngyba (*Microseira wollei*)	16	7	44%	3	19%	1	6%	5	31%
Vegetated points	24	14	58%	2	8%	2	8%	6	25%

Table 1. Species abundance during 2021 Lake Hunt survey.

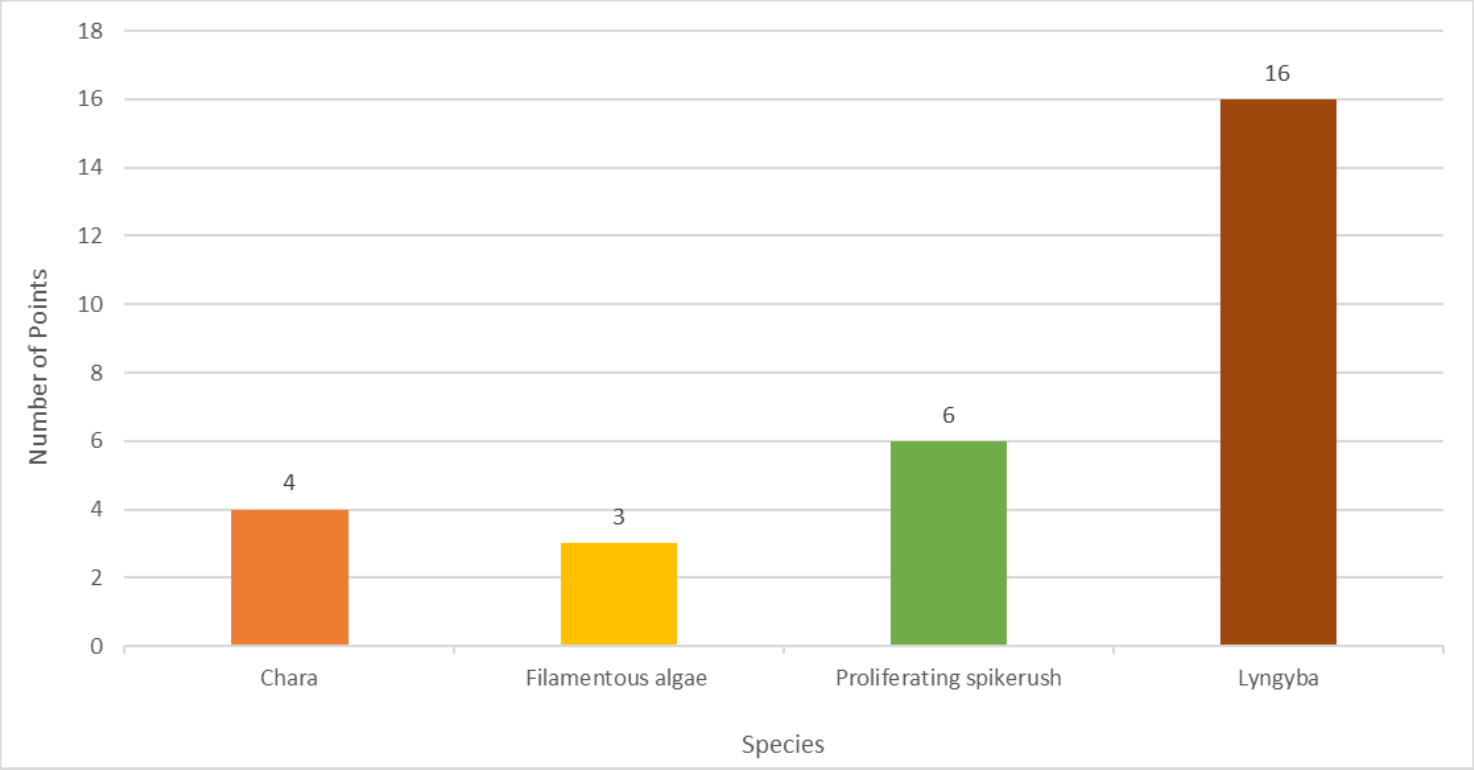

Figure 3. Relative abundance during the 2021 Lake Hunt survey.

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Species	Total Number of Points	Density Rating							
		Trace		Sparse		Moderate		Dense	
		Number of points	%	Number of points	%	Number of points	%	Number of points	%
Bladderwort (*Utricularia spp.*)	9	7	78%	2	22%	0	0%	0	0%
Chara (*Chara spp.*)	15	3	20%	4	27%	2	13%	6	40%
Hydrilla (*Hydrilla verticillata*)	13	6	46%	4	31%	1	8%	2	15%
Lyngbya (*Microseira wollei)*	11	4	36%	3	27%	1	9%	3	27%
Proliferating Spikerush (*Eleocharis baldwinii*)	10	6	60%	3	30%	1	10%	0	0%
Vegetated points	38	12	32%	11	29%	5	13%	10	26%

Table 2. Species abundance during the 2021 Lake Reidsville survey.

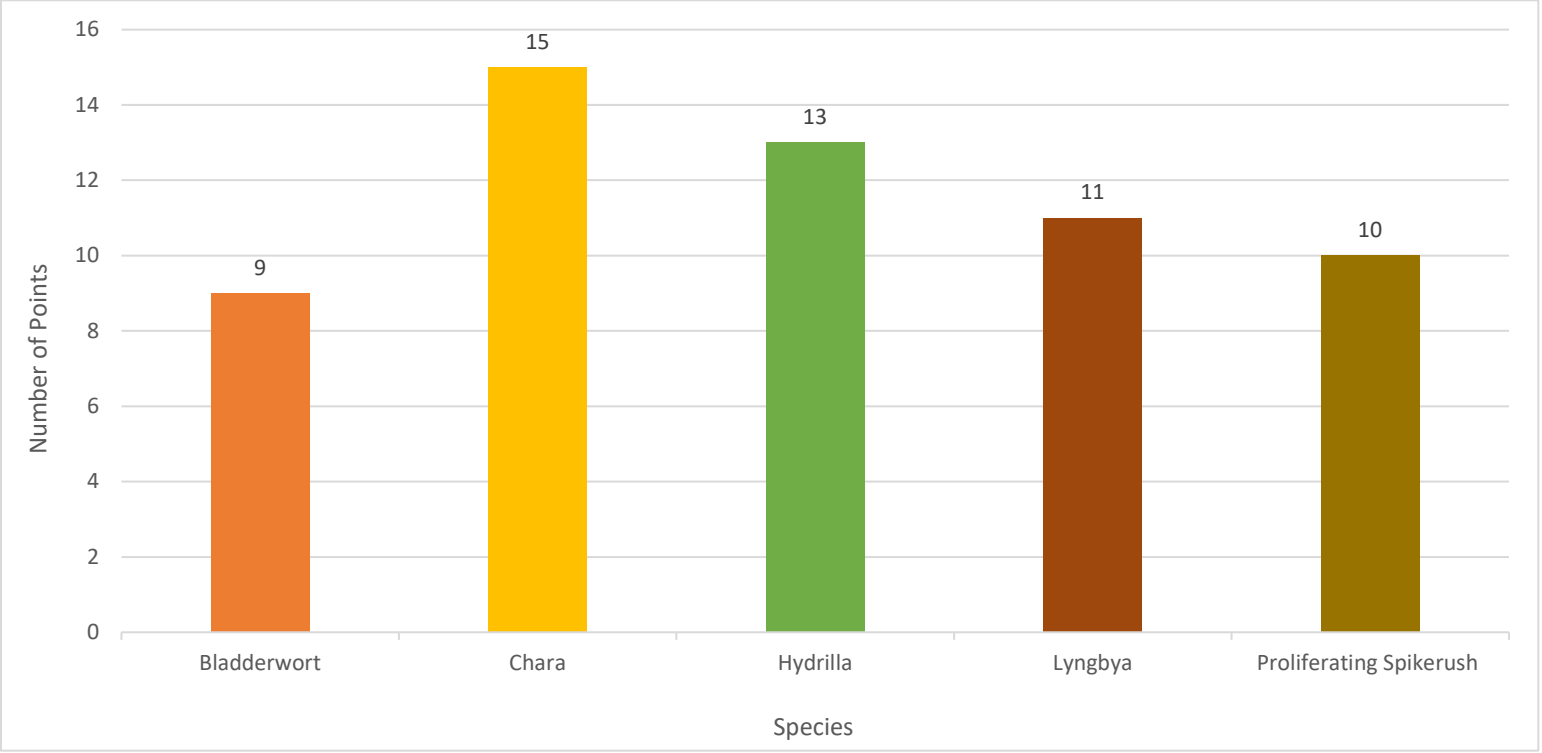

Figure 4. Relative abundance during the 2021 Lake Reidsville survey.

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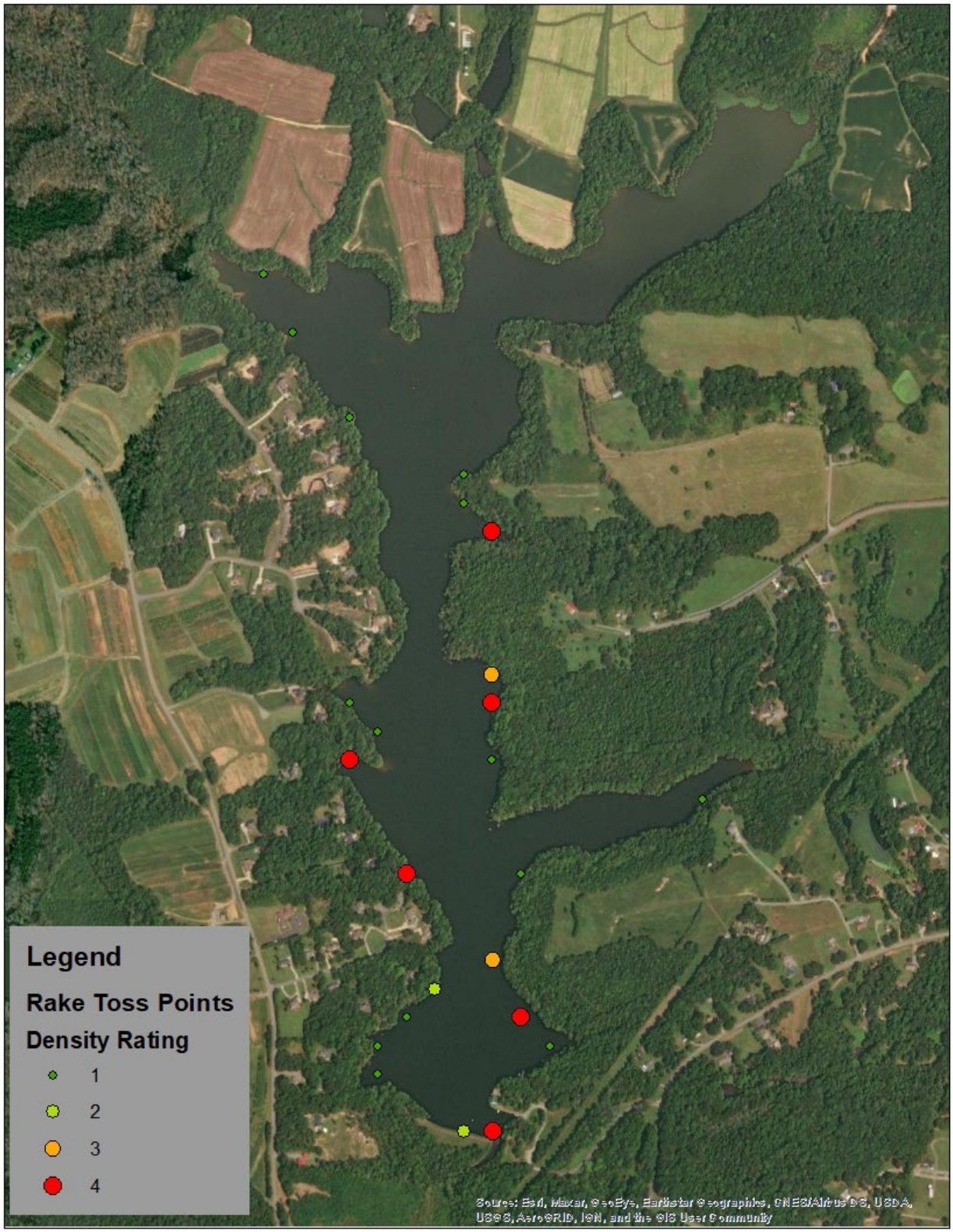

Figure 5. Map showing density rating and location of all SAV at Lake Hunt.

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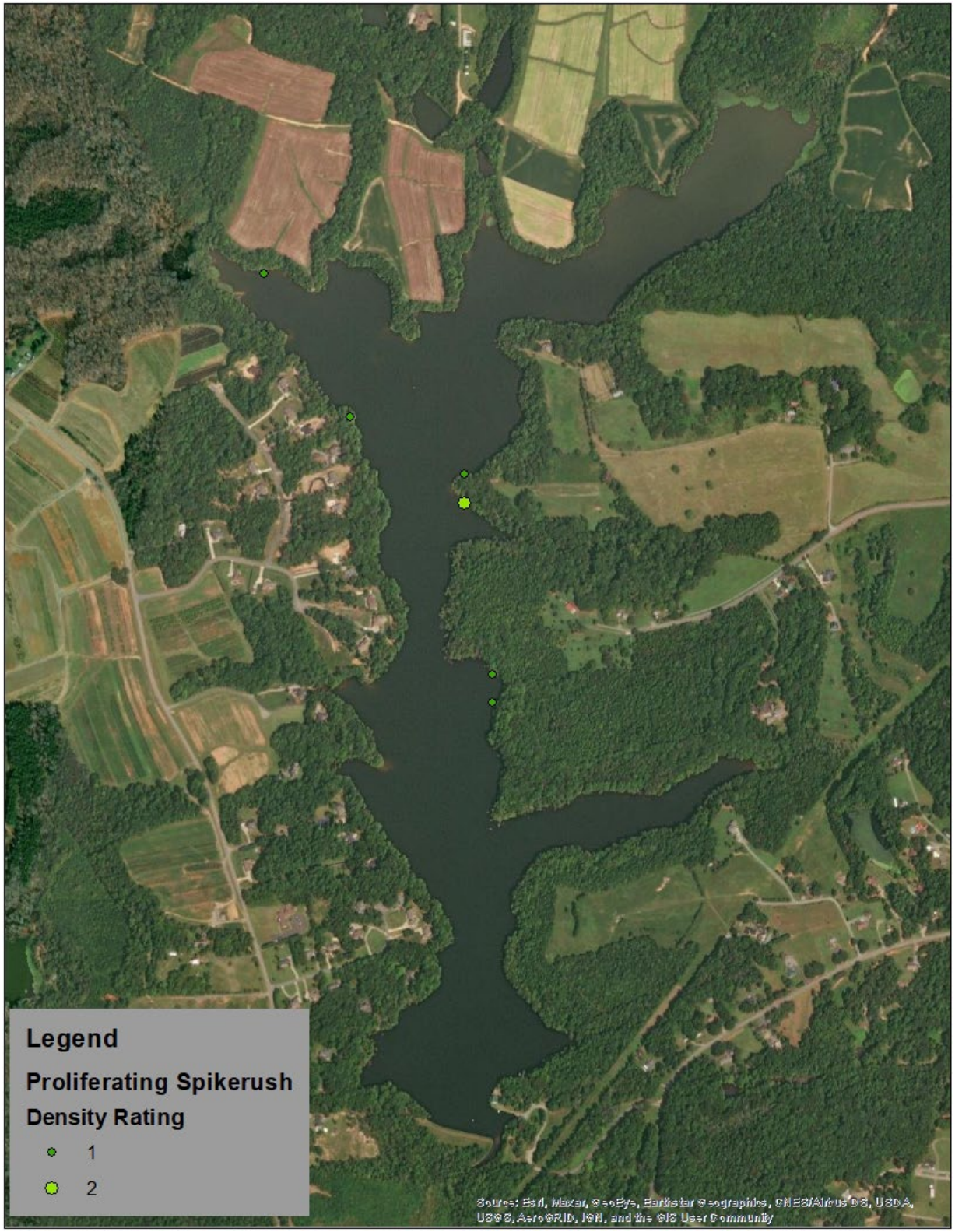

Figure 6. Map showing density rating and location of the Proliferating Spikerush at Lake Hunt.

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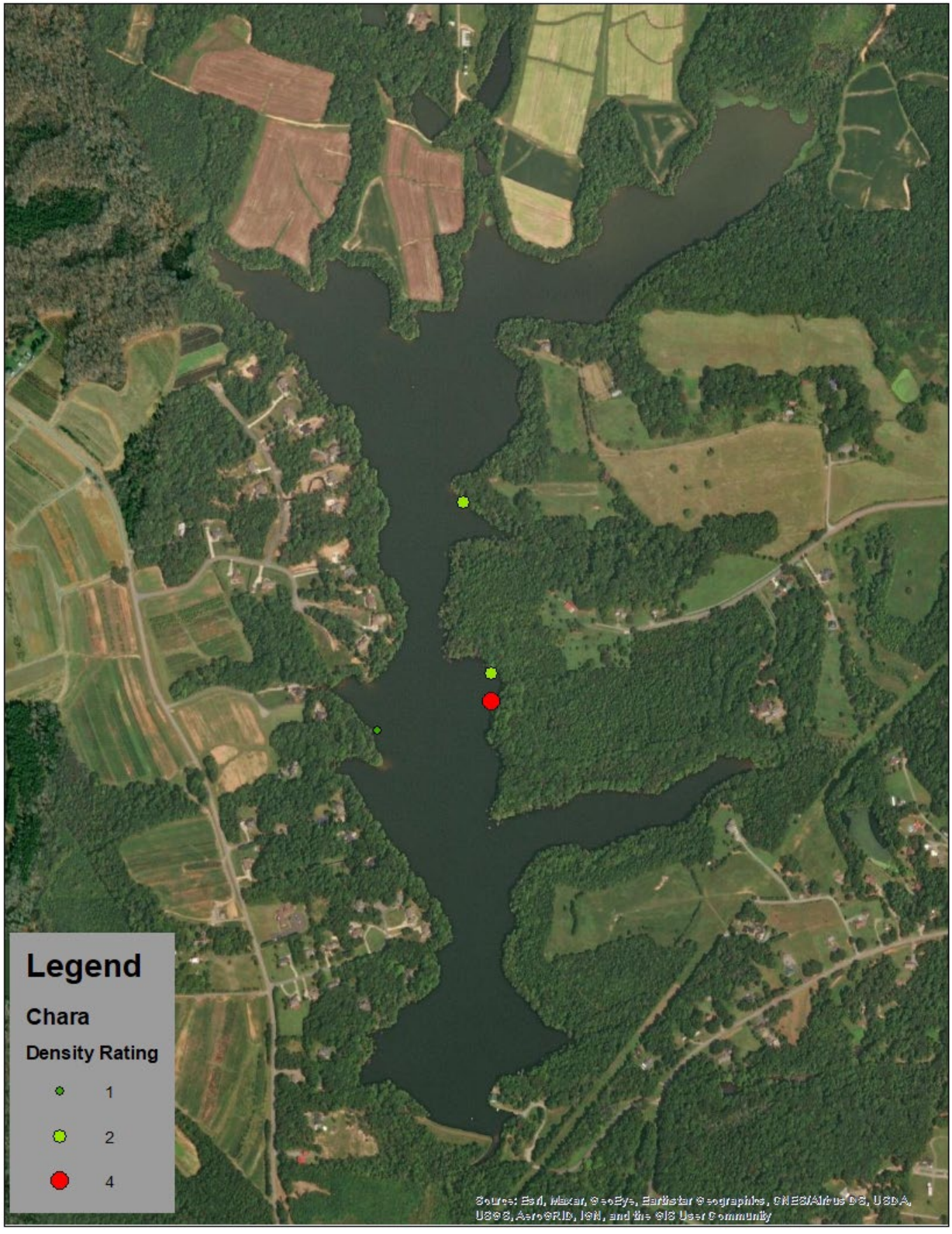

Figure 7. Map showing density rating and location of the macroalgae Chara at Lake Hunt.

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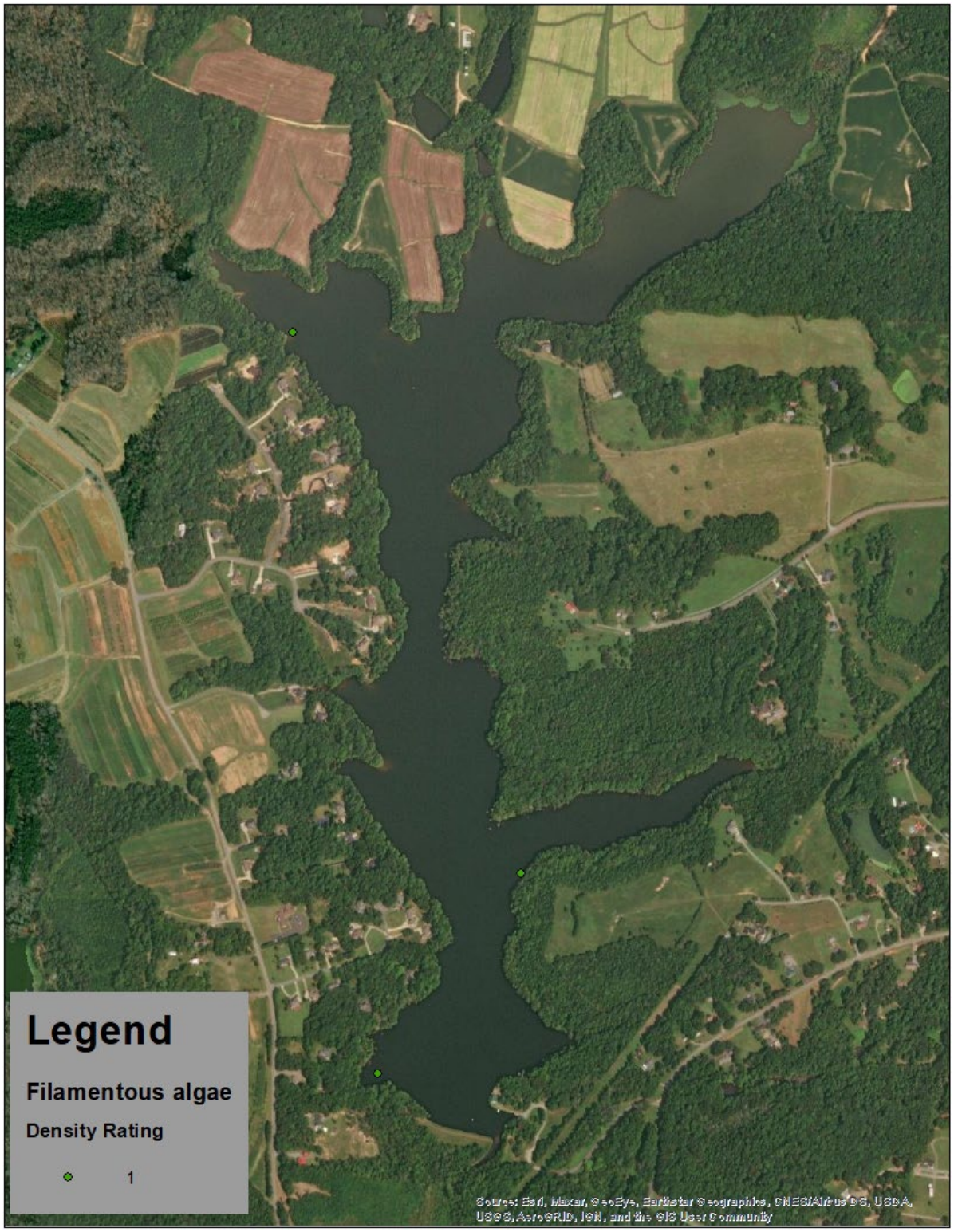

Figure 8. Map showing density rating and location of the filamentous algae (*Spirogyra spp.*) at Lake Hunt.

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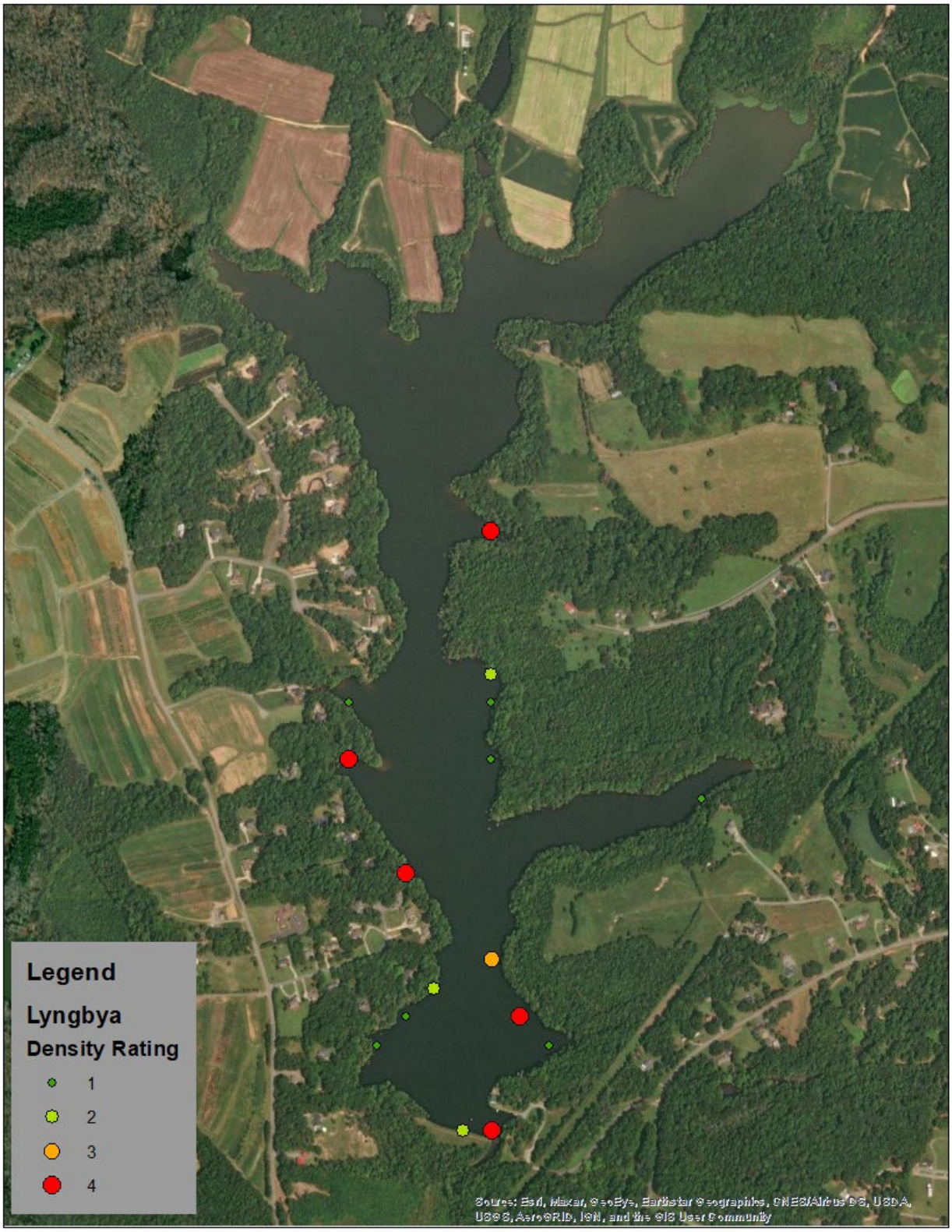

Figure 9. Map showing density rating and location of Lyngbya at Lake Hunt.

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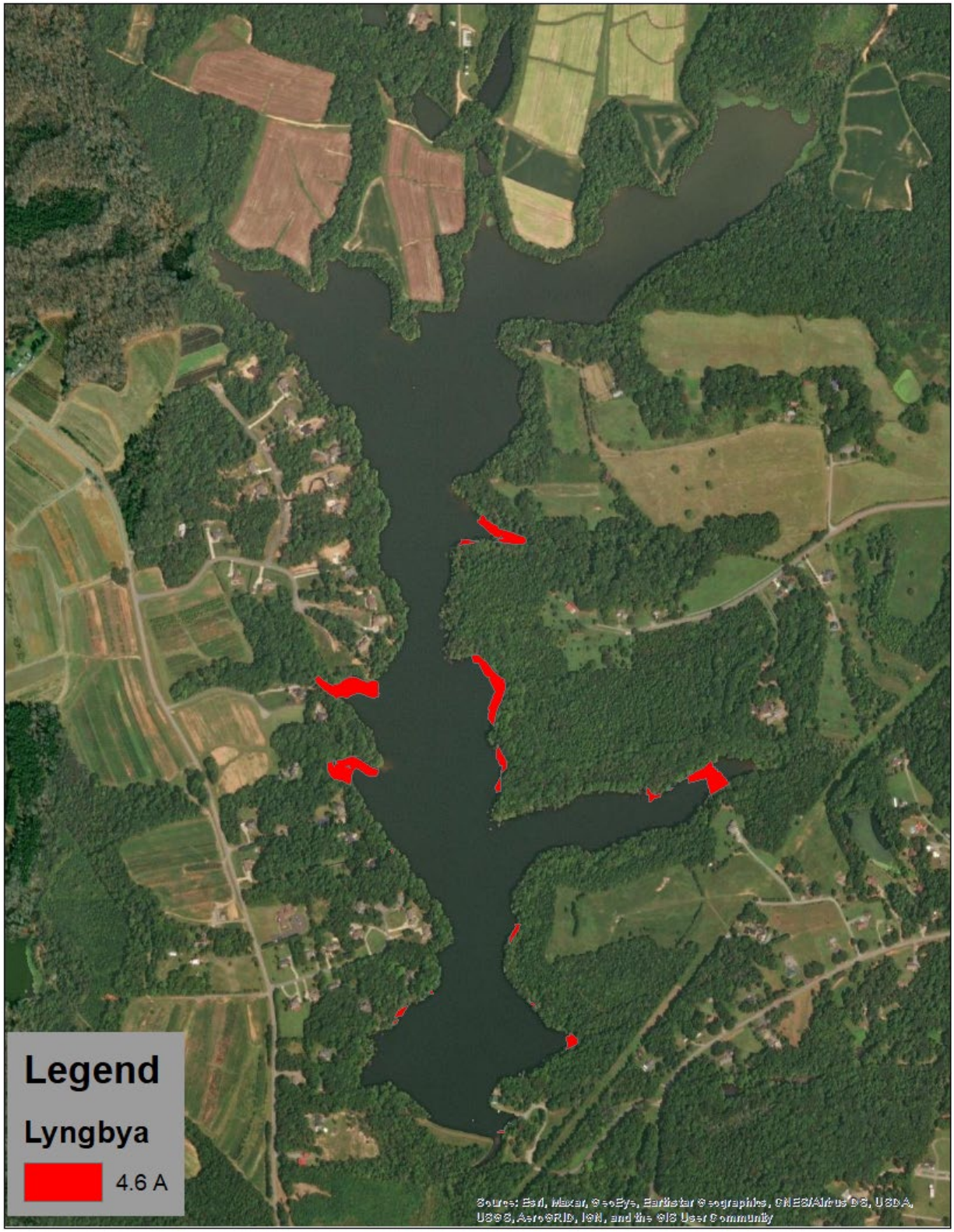

Figure 10. Map showing Lyngbya coverage in Lake Hunt.

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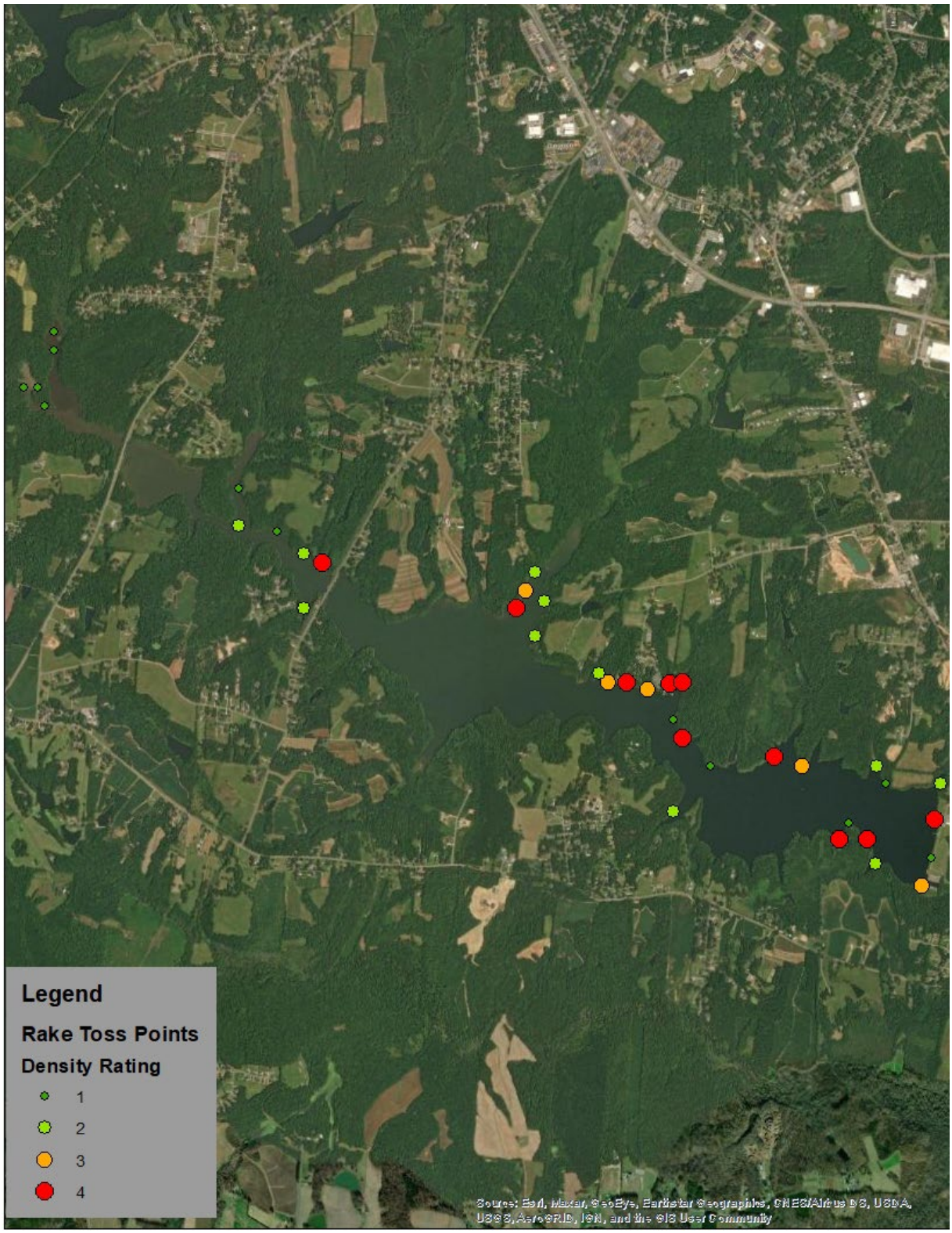

Figure 11. Map showing density rating and location of all SAV in Lake Reidsville.

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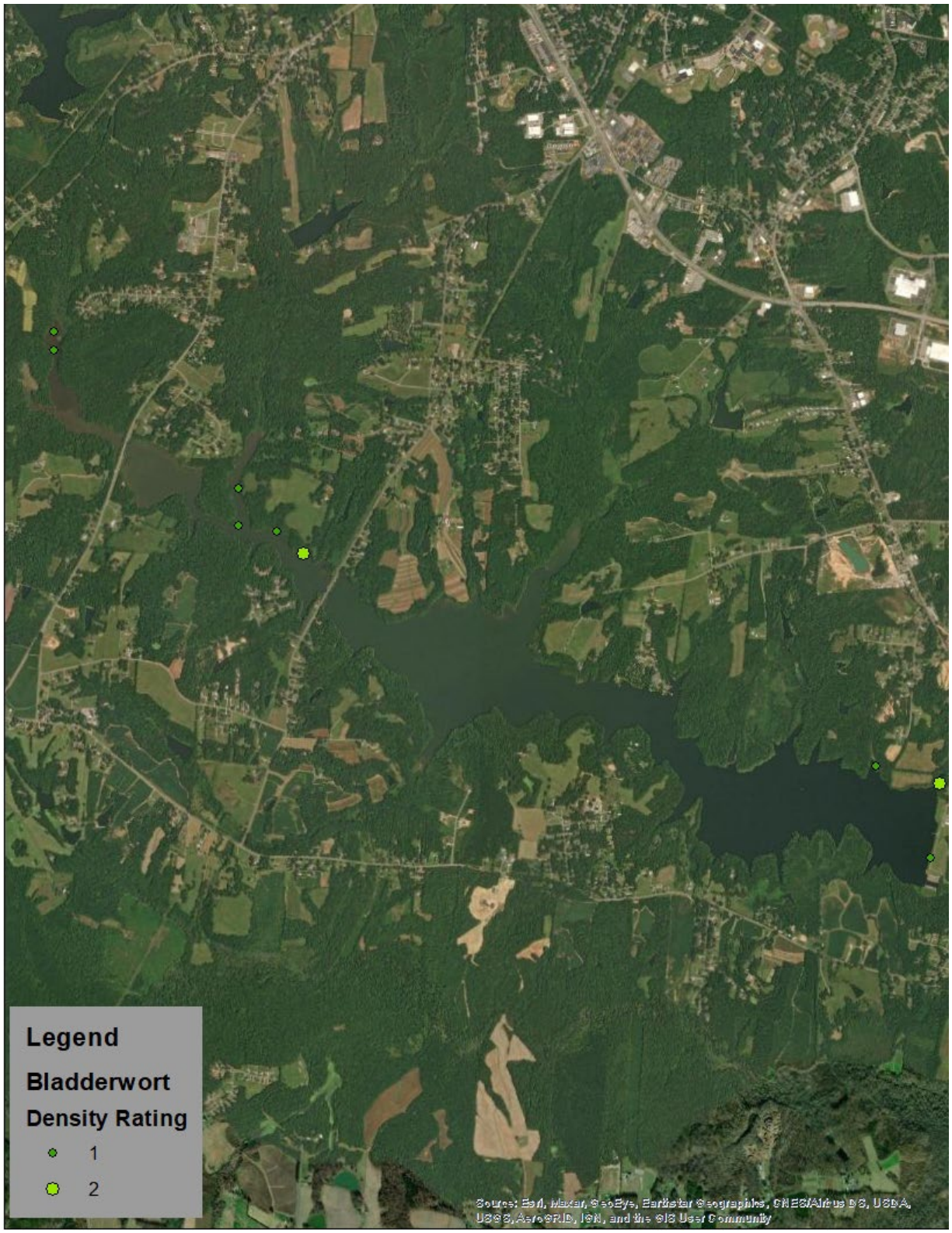

Figure 12. Map showing density rating and location of Bladderwort in Lake Reidsville.

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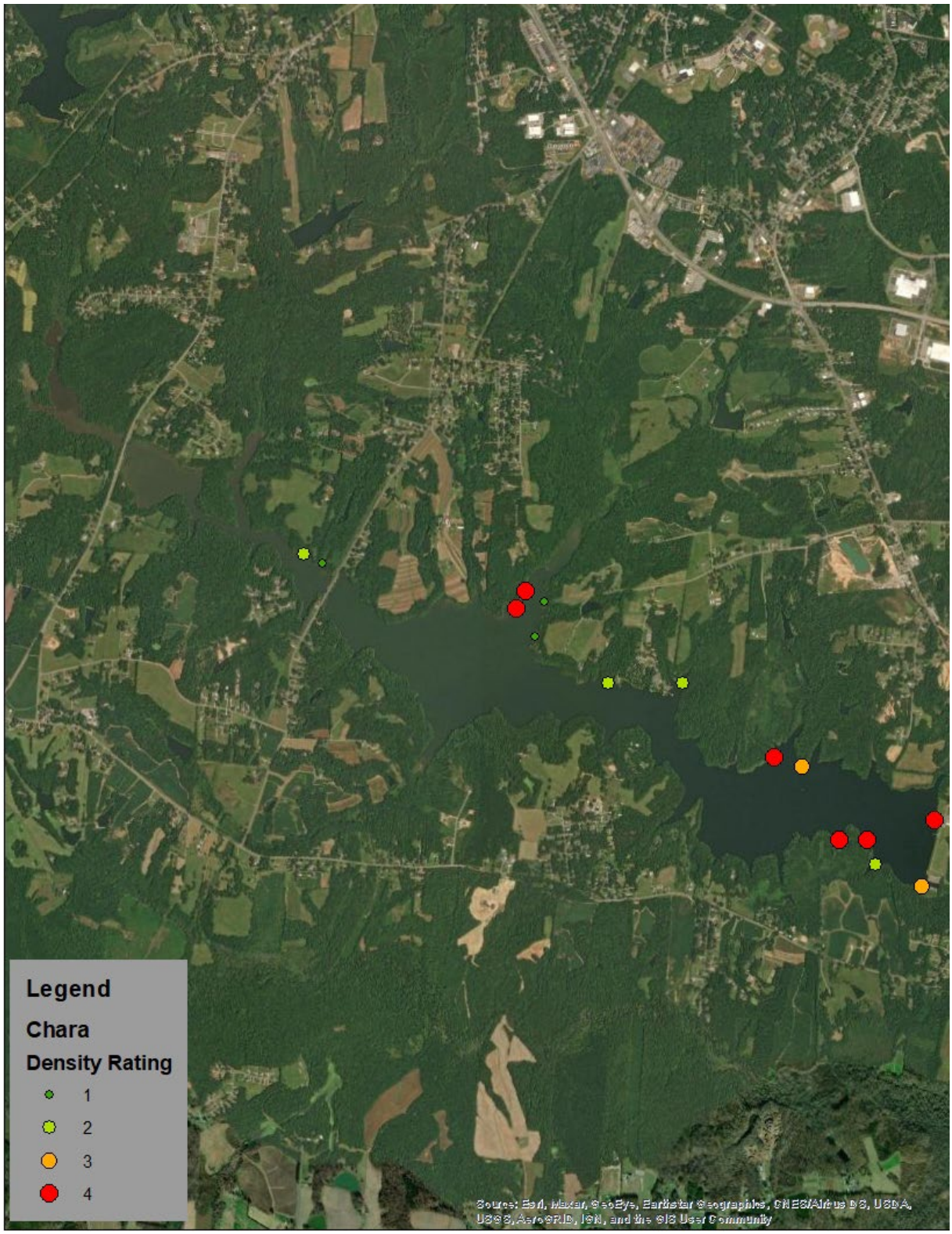

Figure 13. Map showing density rating and location of the macroalgae Chara in Lake Reidsville.

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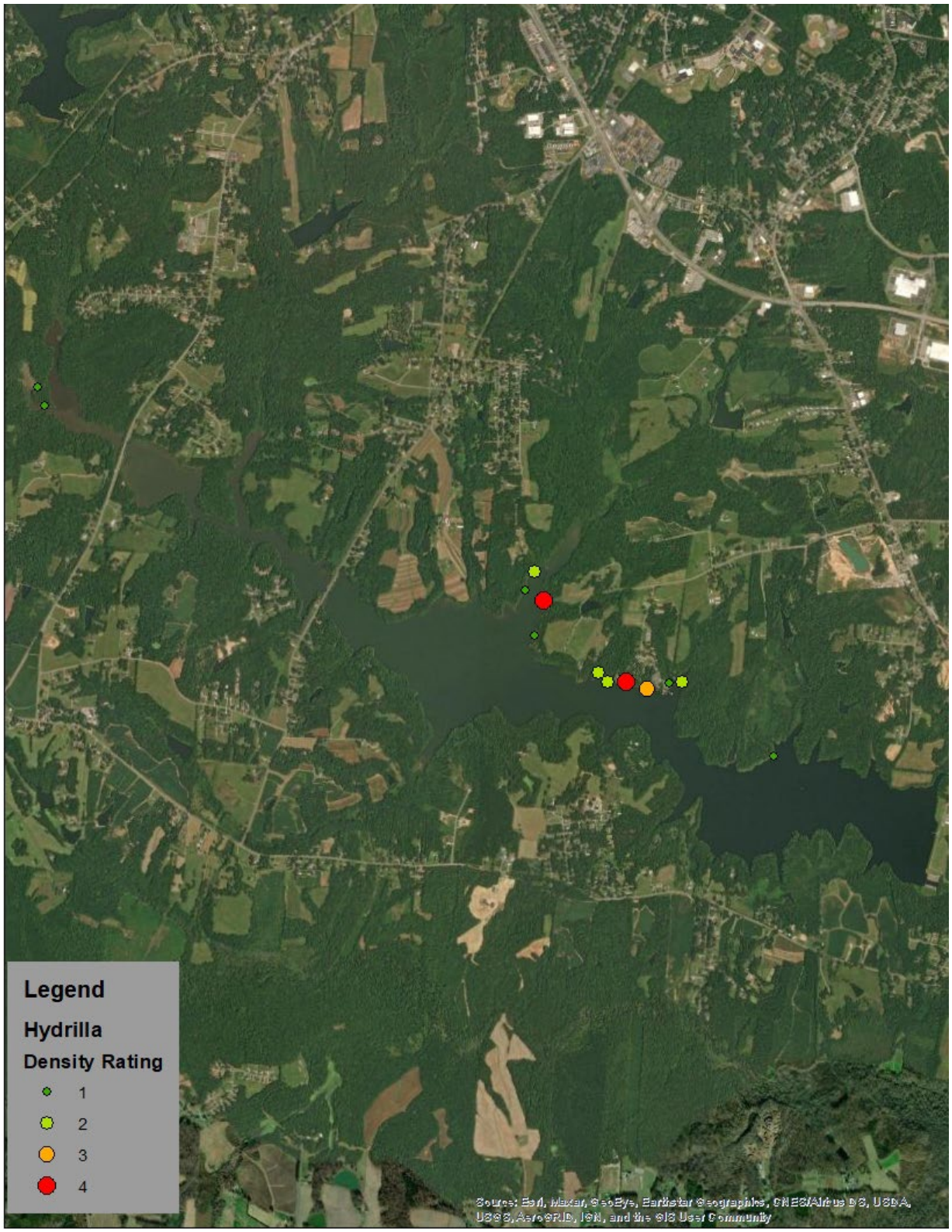

Figure 14. Map showing density rating and location of Hydrilla in Lake Reidsville.

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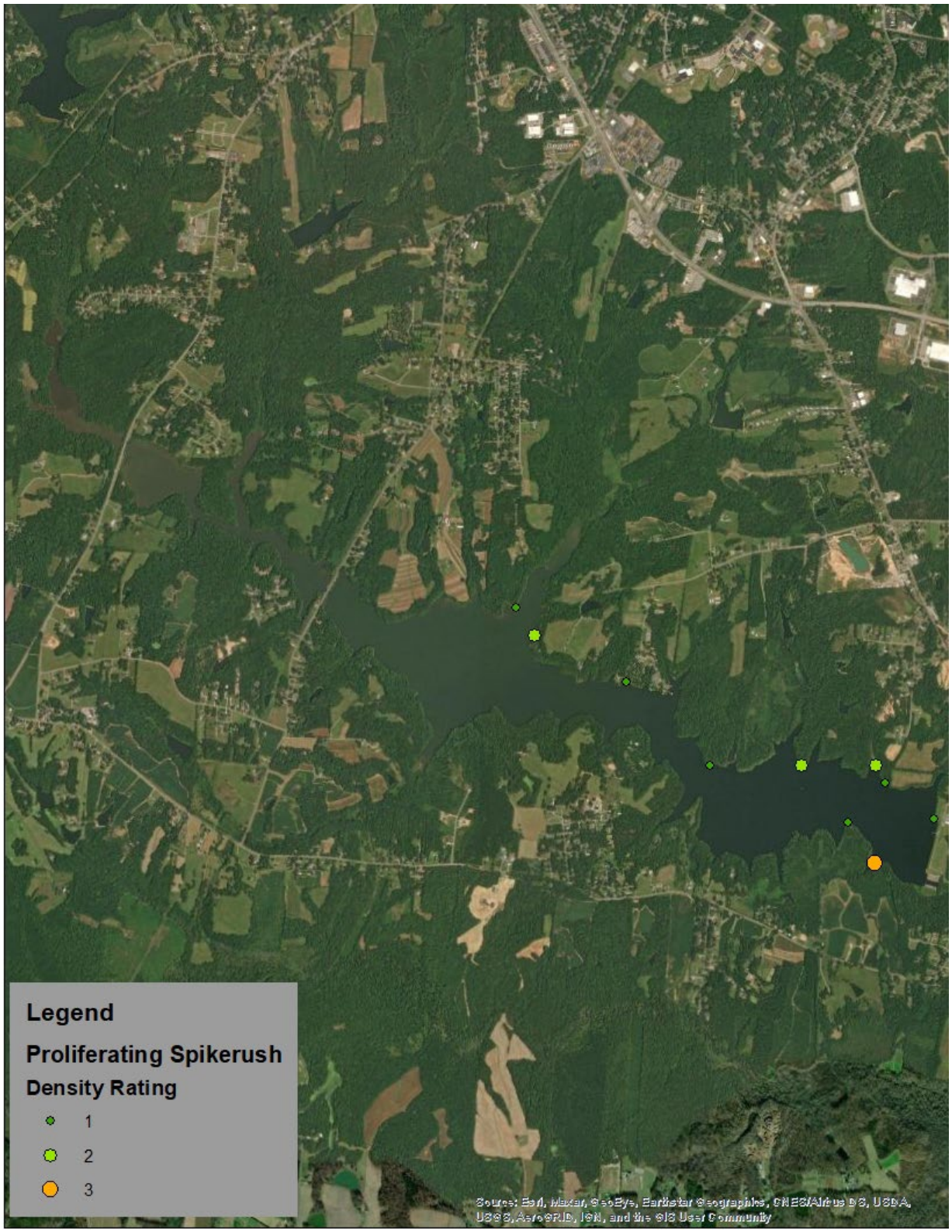

Figure 15. Map showing density rating and location of Proliferating Spikerush in Lake Reidsville.

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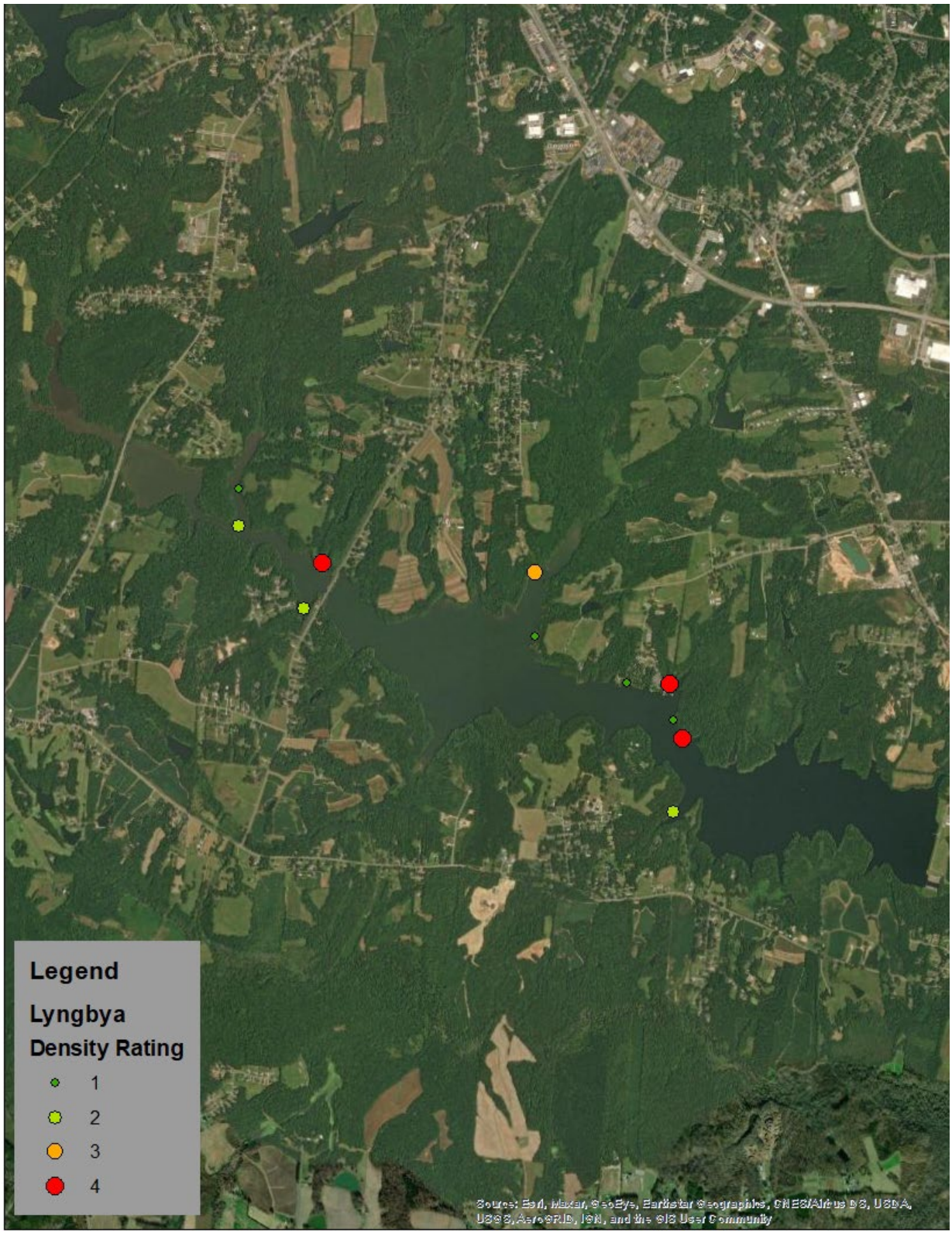

Figure 16. Map showing density rating and location of Lyngbya in Lake Reidsville.

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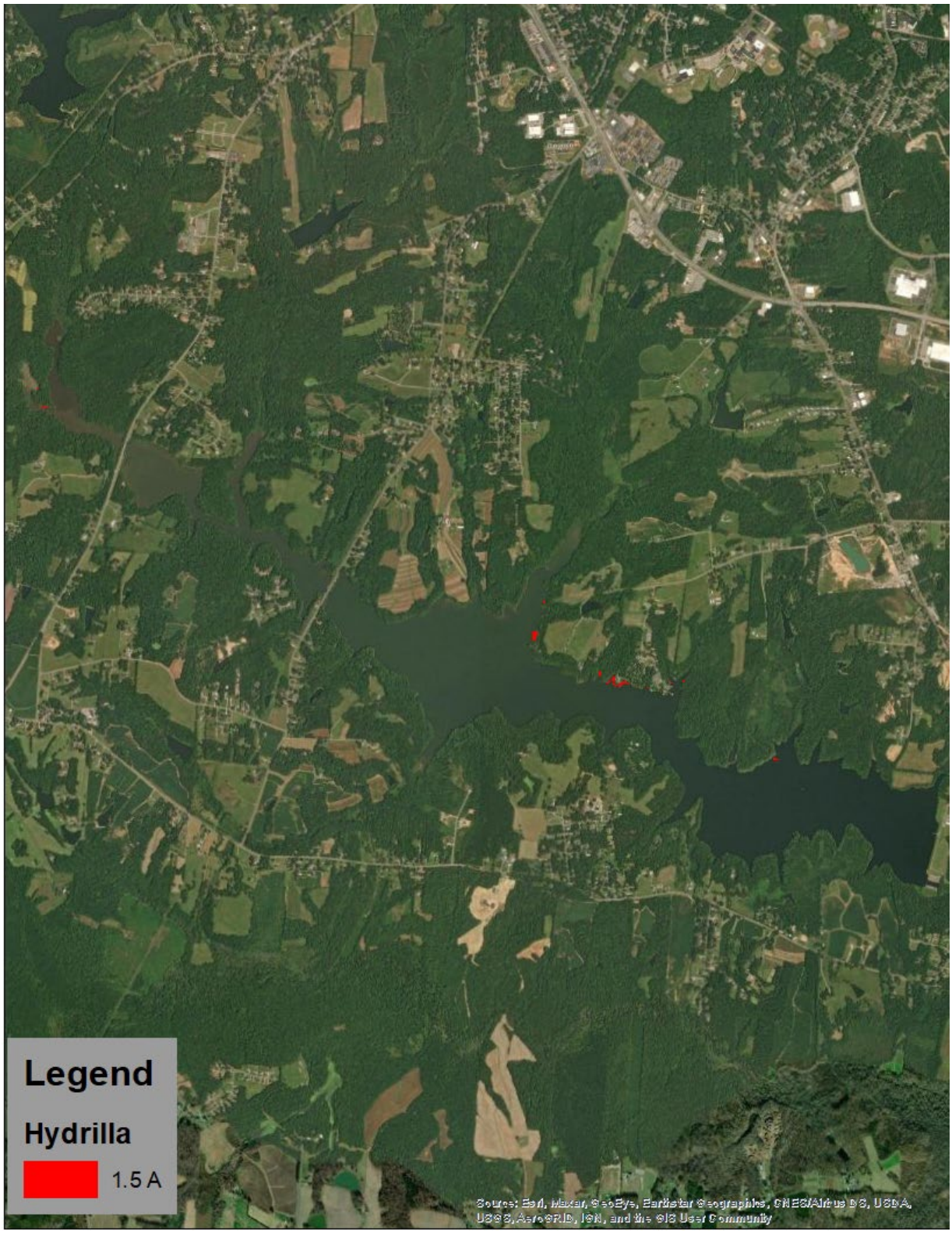

Figure 17. Map showing Hydrilla coverage in Lake Reidsville.