2022 Mintz Pond Submerged 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 reported in Mintz Pond in 2011. Since then the Aquatic Weed Program (AWCP) and Fayetteville Public Works Commission (PWC) have worked together to manage Hydrilla. More information concerning past management activities can be found on the AWCP online database (NCDEQ-DWR :: Aquatic Weed Control (ncwater.org)).

Methods

The AWCP completed the survey on November 4th. Using a point-intercept method, a total of 24 points were sampled at Mintz Pond (Figure 1). Three rake tosses were conducted at pre-determined points throughout the lake 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. Approximately 2 miles of sonar tracks 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 23, or 96%, of the rake toss points (Figure 2). Species found during the survey included Bladderwort (*Utricularia spp.*), Hydrilla (*Hydrilla verticillata*), Illinois Pondweed (*Potamogeton illinoensis*), the macroalgae Nitella (*Nitella spp.*), and Sandhills Milfoil (*Myriophyllum laxum*) (Table 1; Figures 3 – 7). The estimated coverage of Bladderwort, Nitella, and Sandhills Milfoil were 9 acres, 5 acres and 6.5 acres, respectively (Figures 8 – 10).

Other native aquatic vegetation found during the survey was Watershield (*Brasenia schreberi*), Waterpod (*Hydrolea quadrivalvis*), Fragrant water lily (*Nymphaea odorata*), and Spatterdock (*Nuphar lutea*). Alligatorweed (*Alternanthera philoxeroides*), an invasive, non-native plant, was observed growing along much of the western shoreline.

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

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Species	Total	Density Rating							
		Trace		Sparse		Moderate		Dense	
		Number of points	%	Number of points	%	Number of points	%	Number of points	%
Bladderwort (*Utricularia spp.*)	17	3	18%	11	65%	2	12%	1	6%
Hydrilla (*Hydrilla verticillata*)	2	1	50%	1	50%	0	0%	0	0%
Illinois Pondweed (*Potamogeton illinoensis*)	2	1	50%	1	50%	0	0%	0	0%
Nitella (*Nitella spp.*)	10	3	30%	5	50%	1	10%	1	10%
Sandhills Milfoil (*Myriophyllum laxum*)	13	1	8%	5	38%	7	54%	0	0%
Vegetated points	23	5	22%	5	22%	5	22%	8	35%

Table 1. Species abundance during the 2022 Mintz Pond survey.

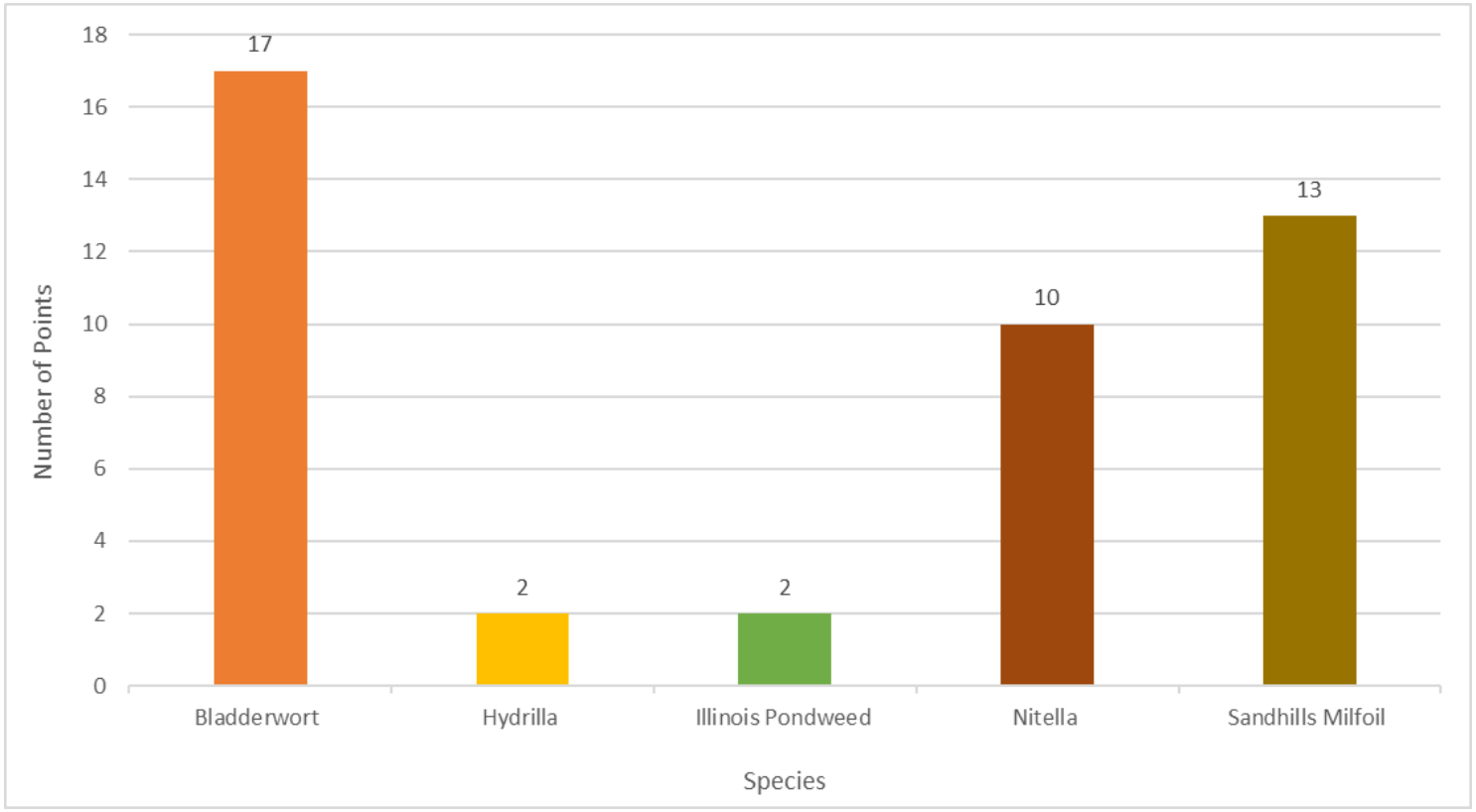

Figure 2. Relative abundance during the 2022 Mintz Pond survey.

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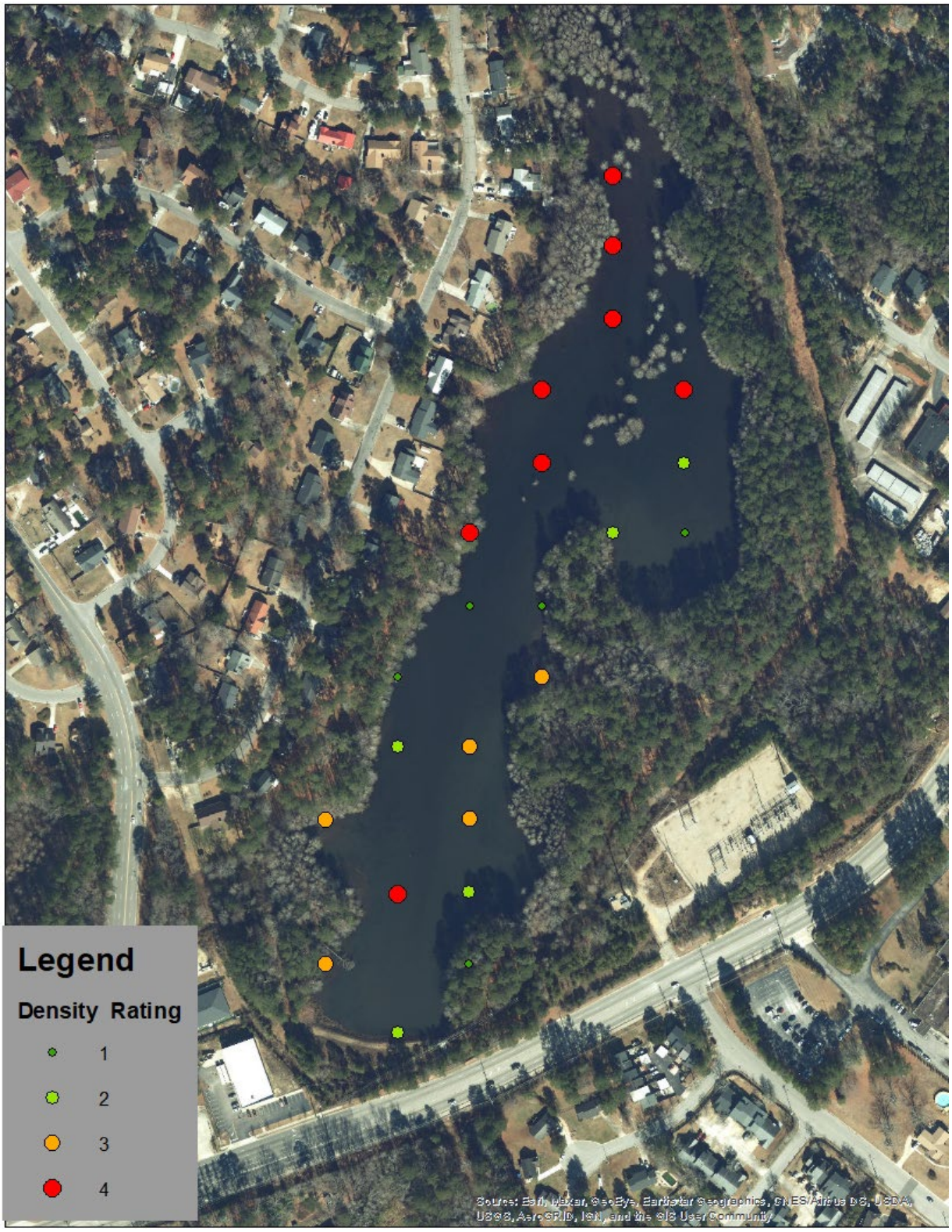

Figure 2. Map showing location and density of SAV.

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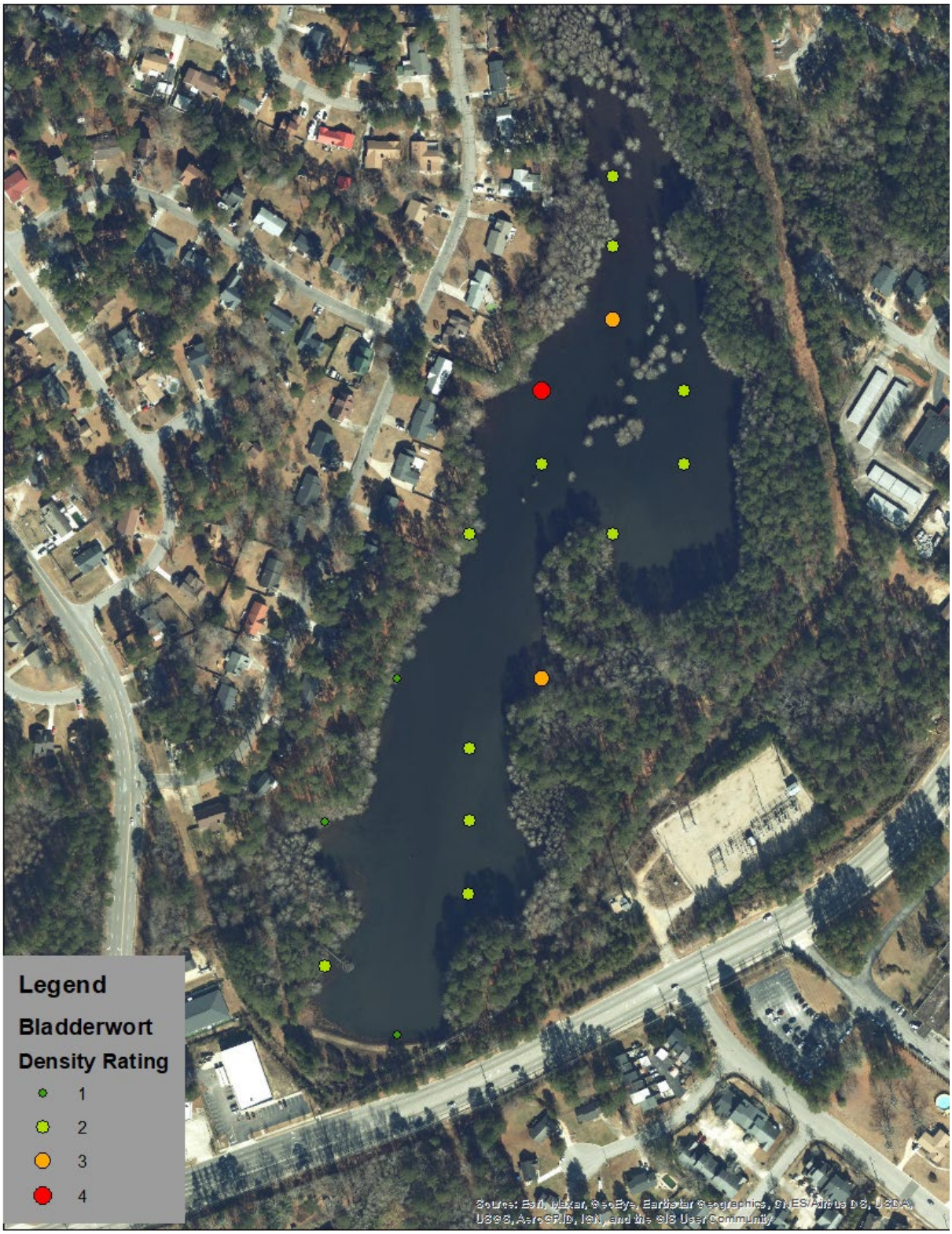

Figure 3. Map showing density and location of Bladderwort.

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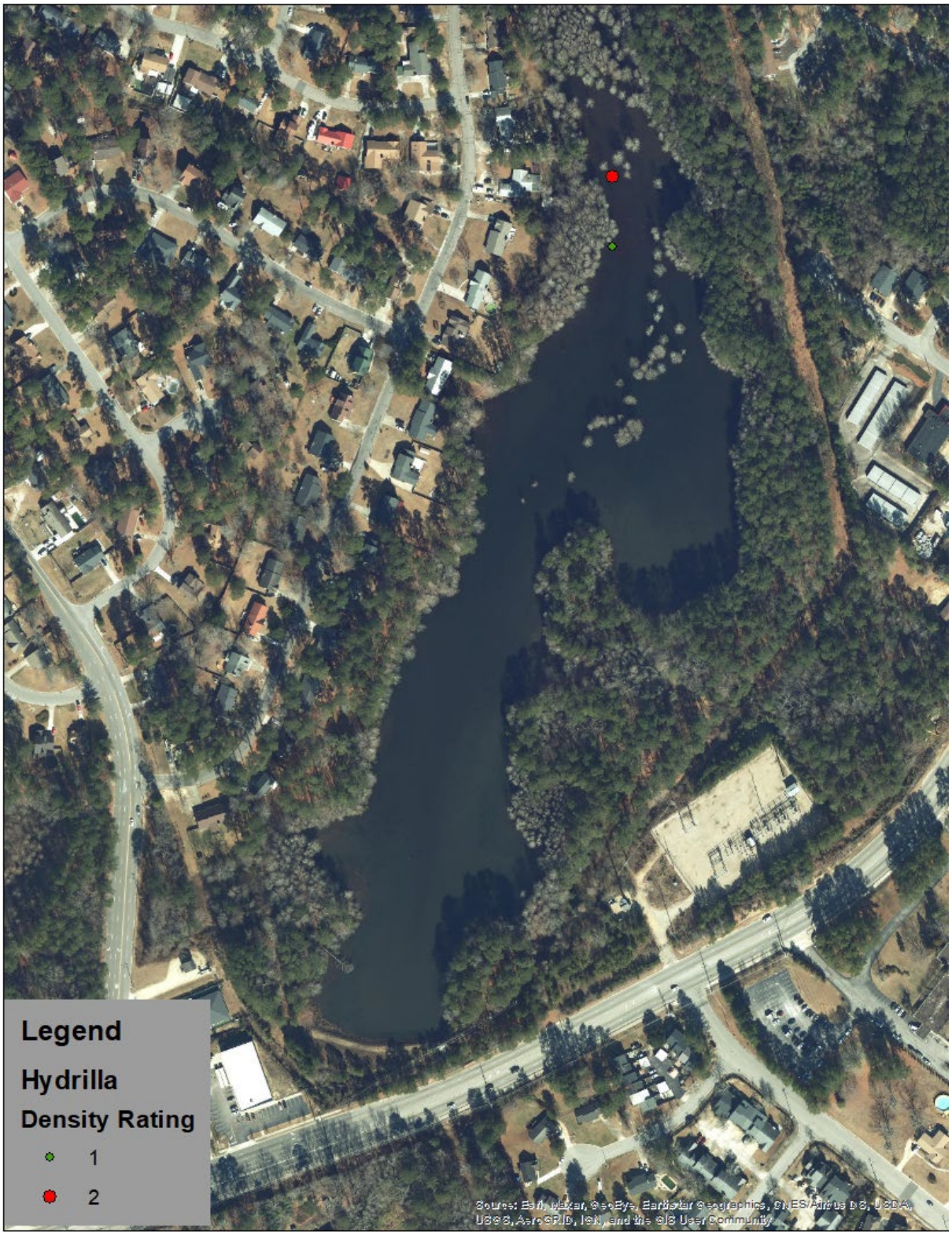

Figure 4. Map showing density and location of Hydrilla.

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Figure 5. Map showing density and location of Illinois Pondweed.

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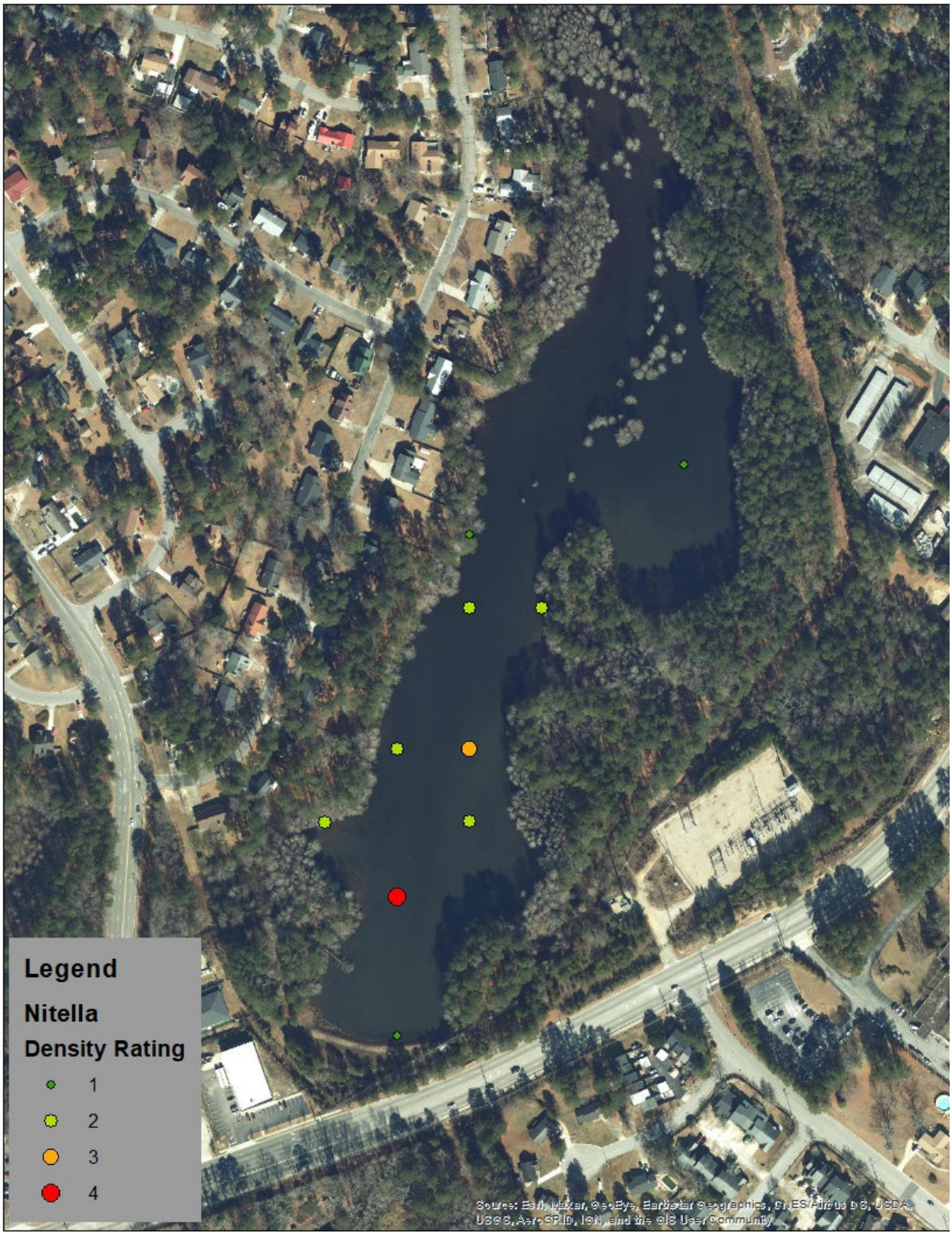

Figure 6. Map showing density and location of Nitella.

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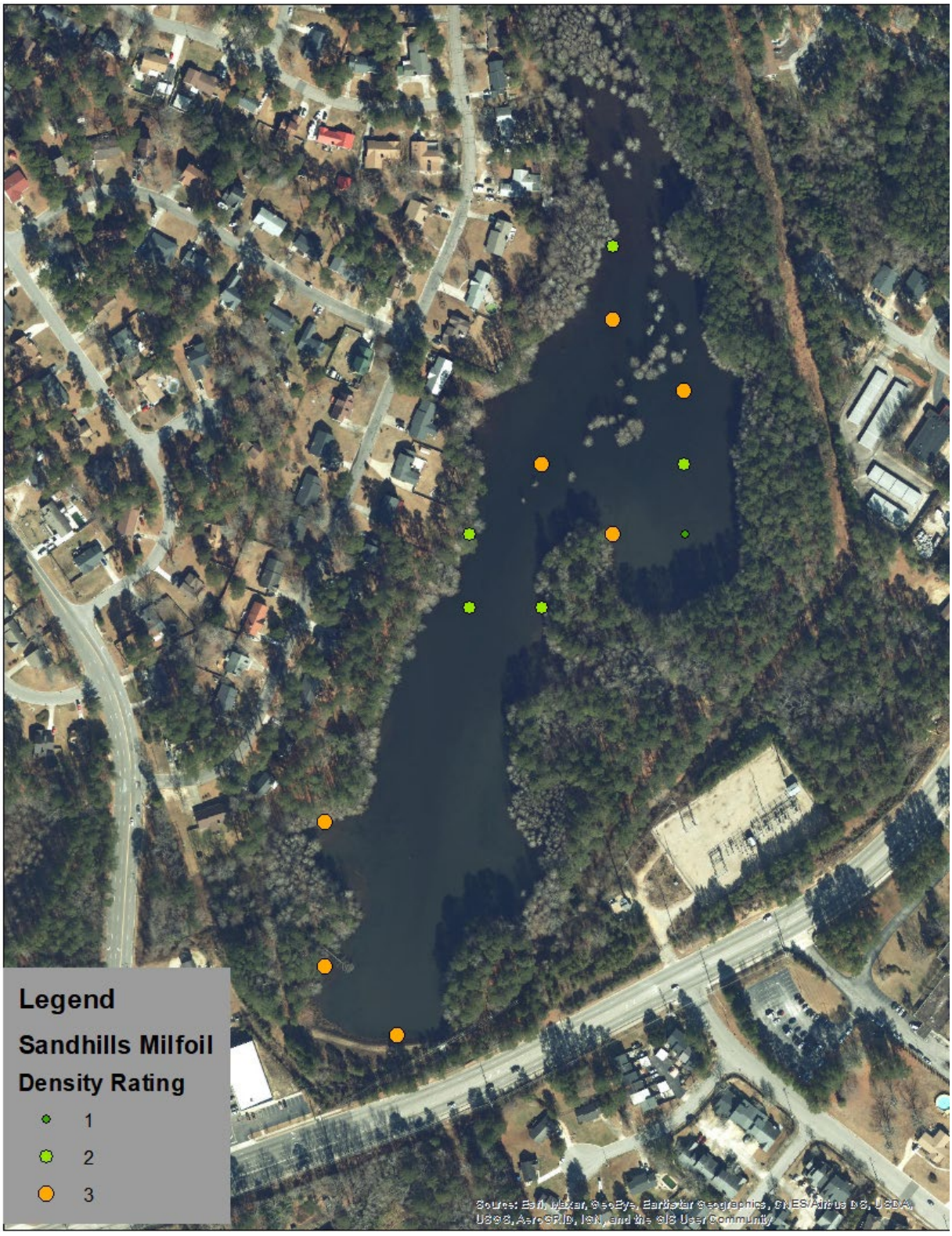

Figure 7. Map showing density and location of Sandhills Milfoil.

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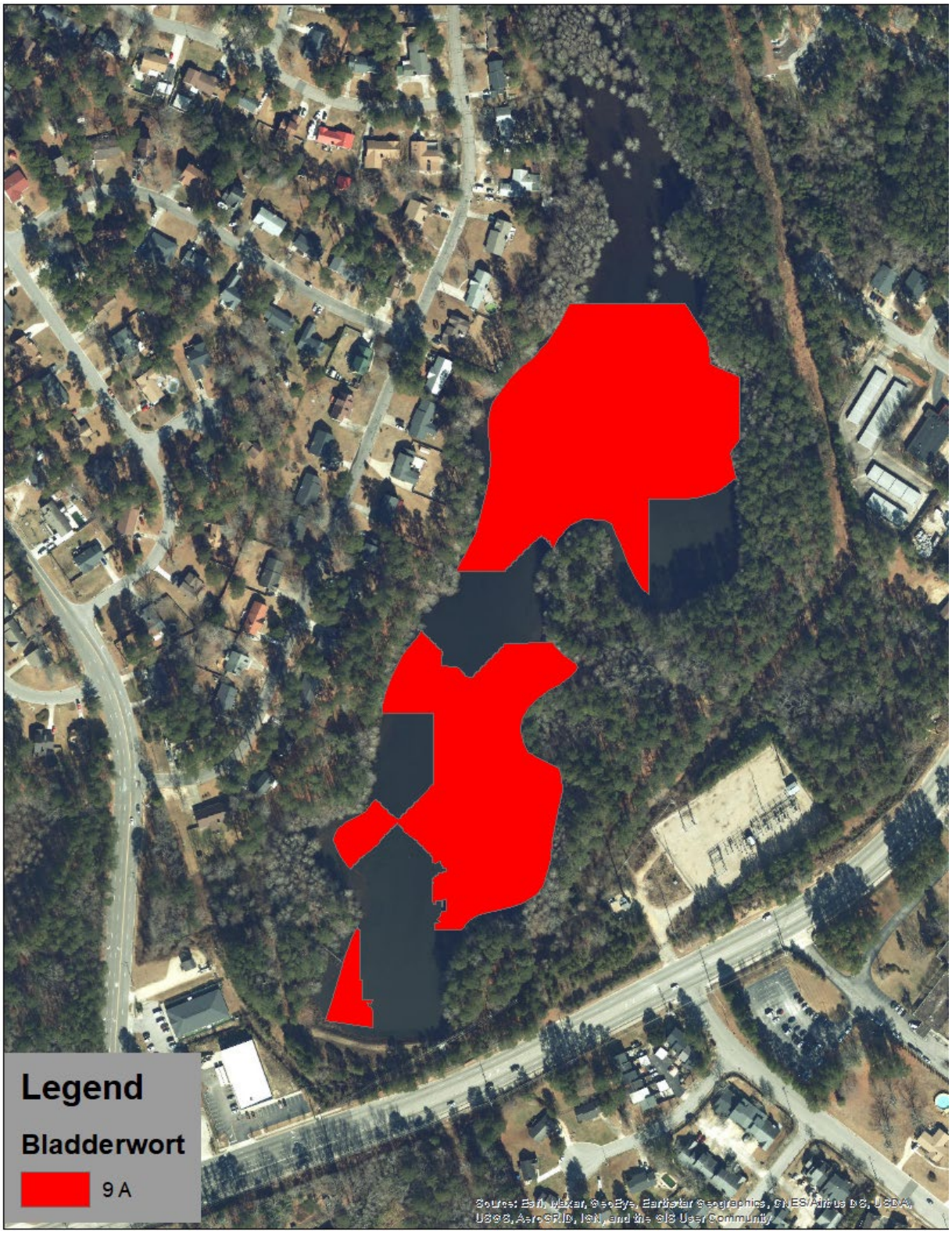

Figure 8. Map showing coverage of Bladderwort.

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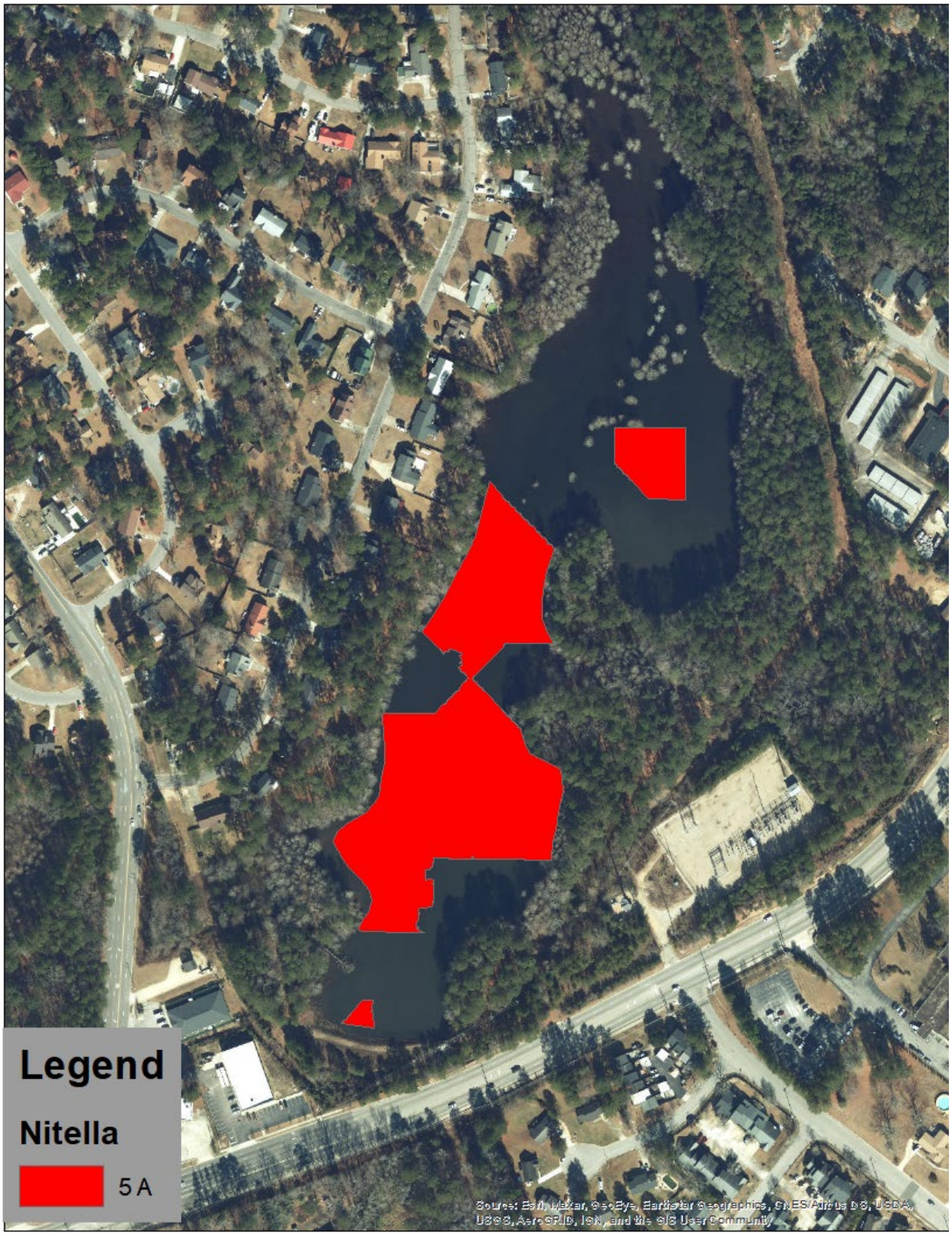

Figure 9. Map showing coverage of Nitella.

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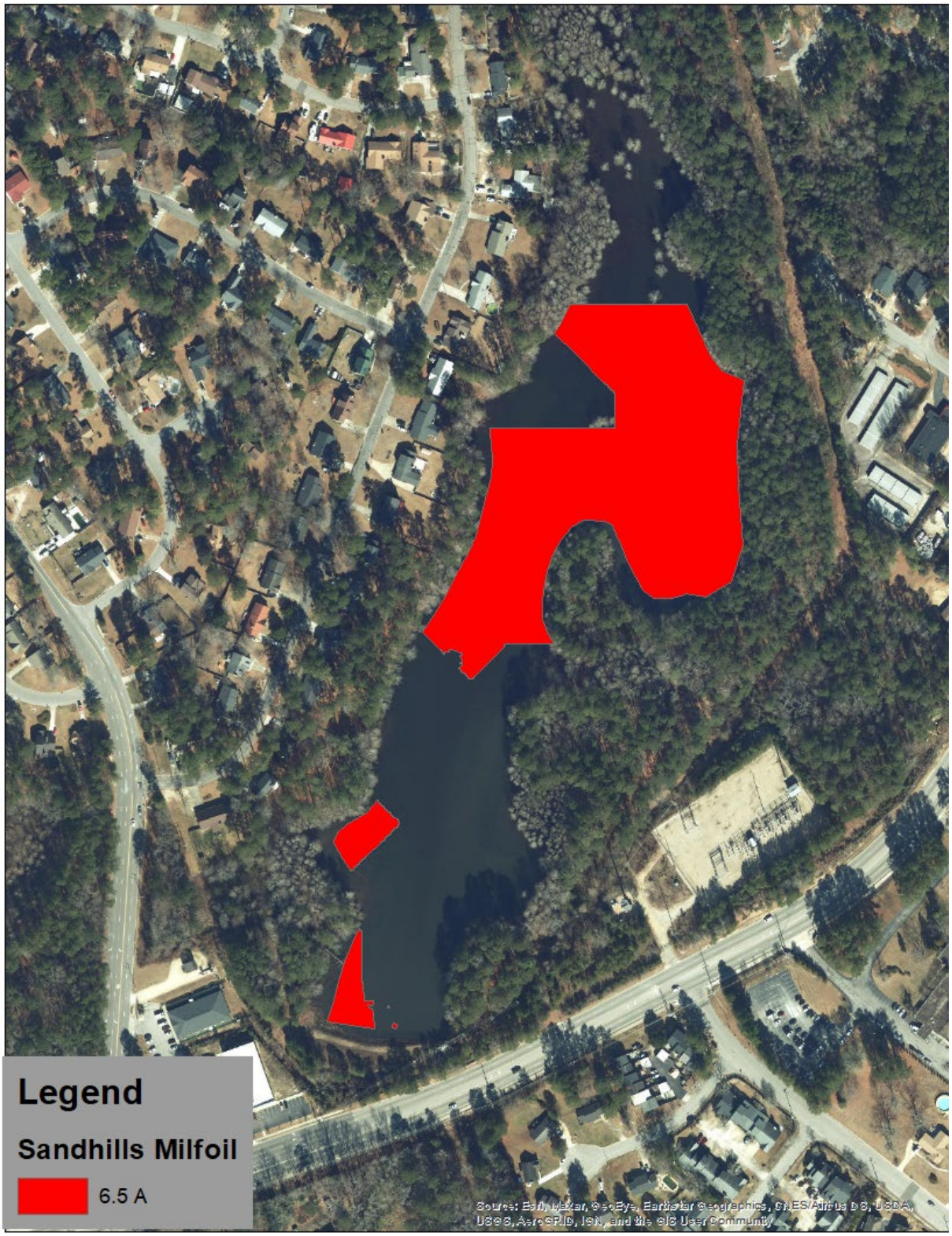

Figure 10. Map showing coverage of Sandhills Milfoil.