2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) 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 Cane Creek in 2016 adjacent to the boat launch. Since then, the AWCP and Orange Water and Sewer Authority have worked together to manage the infestation. 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 a full-lake survey of Cane Creek October 4th – 6th. Using a point intercept method, a total of 94 points were sampled in 2022 (Figure 1). 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

SAV was found at 83, or 88%, of the rake toss points (Figure 2). Species found during the survey include Brittle Naiad (*Najas minor*), Chara (*Chara spp.*), Hydrilla (*Hydrilla verticillata*), Slender pondweed (*Potamogeton pusillus*), and Southern naiad (*Najas guadalupensis*) (Table 1; Figures 3-8).

Hydrilla acreage greatly increased from 2021 to 2022. The estimated coverage of Hydrilla in 2021 was 12 acres compared to 52 acres in 2022. In 2021, Hydrilla was concentrated to just the lower portion of the reservoir but now it is found throughout the reservoir (Figure 9). The coverage of Brittle Naiad, another noxious aquatic weed, was 29 acres (Figure 10).

Alligatorweed (*Alternanthera philoxeroides*) and Creeping Water Primrose (*Ludwigia grandiflora*) was also found during the survey. They were found scattered along the shoreline in multiple locations throughout the reservoir.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

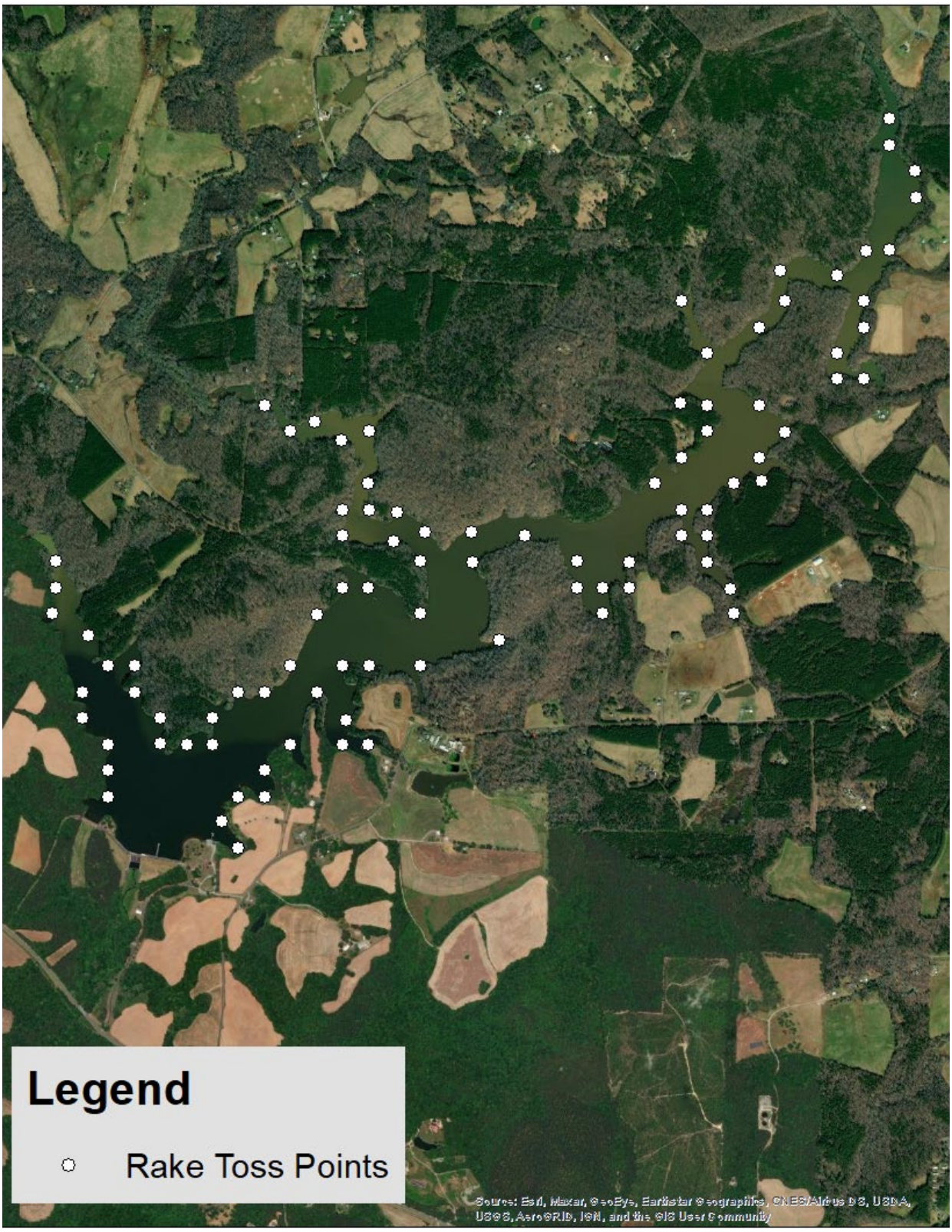

Figure 1. Map showing pre-determined rake toss points.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

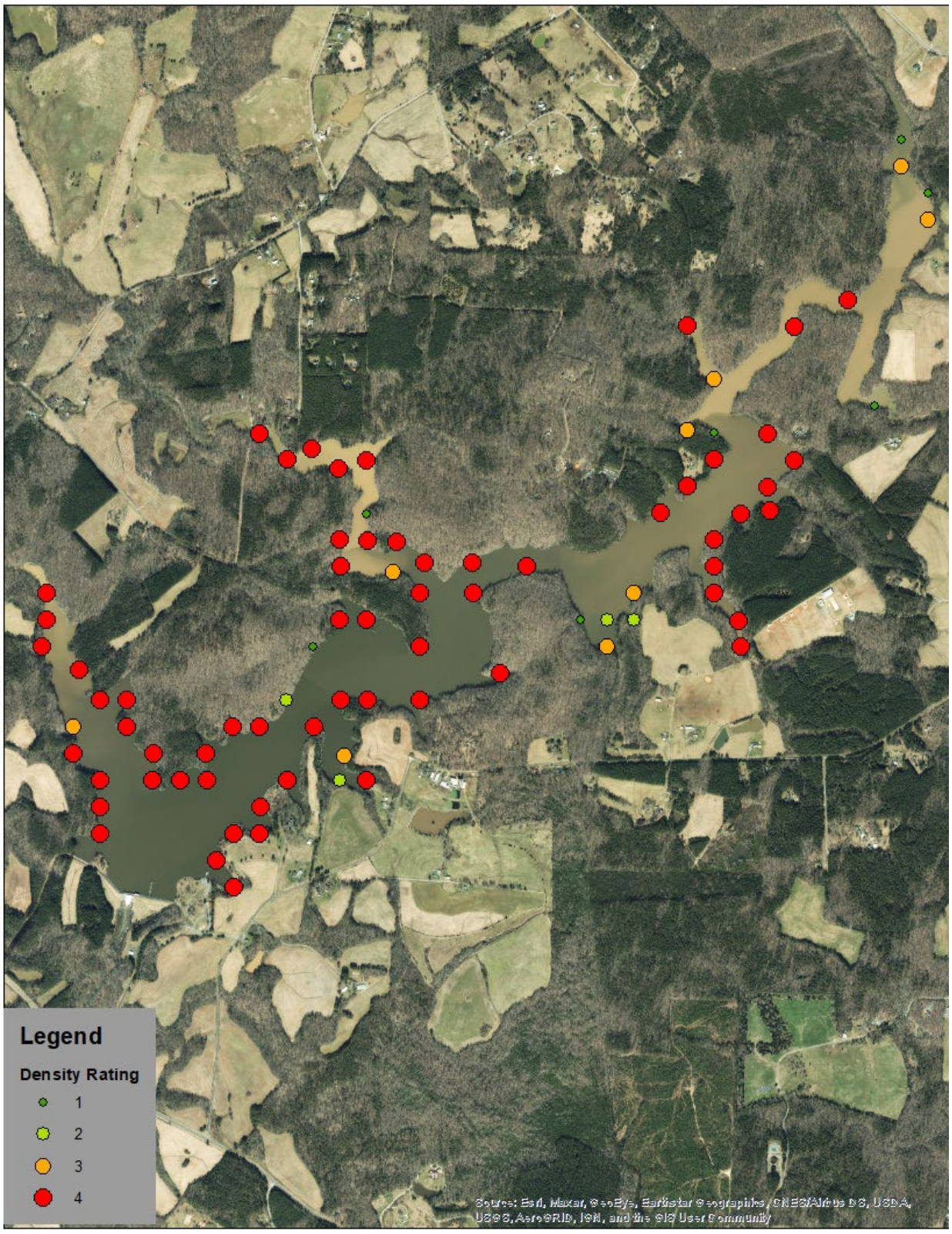

Figure 2. Map showing location of SAV and associated density ratings.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

Species	Total	Density Rating							
		Trace		Sparse		Moderate		Dense	
		Number of points	%	Number of points	%	Number of points	%	Number of points	%
Brittle naiad (*Najas minor*)	27	15	56%	6	22%	1	4%	5	19%
Chara (*Chara spp.)*	34	5	15%	16	47%	5	15%	8	24%
Hydrilla (*Hydrilla verticillata*)	65	16	25%	24	37%	10	15%	15	23%
Slender Pondweed (*Potamogeton pusillus*)	24	10	42%	9	38%	2	8%	3	13%
Southern naiad (*Najas guadalupensis*)	9	4	44%	5	56%	0	0%	0	0%
Vegetated points	83	7	8%	4	5%	9	11%	63	76%

Table 1. Species abundance during 2022 Cane Creek Reservoir survey.

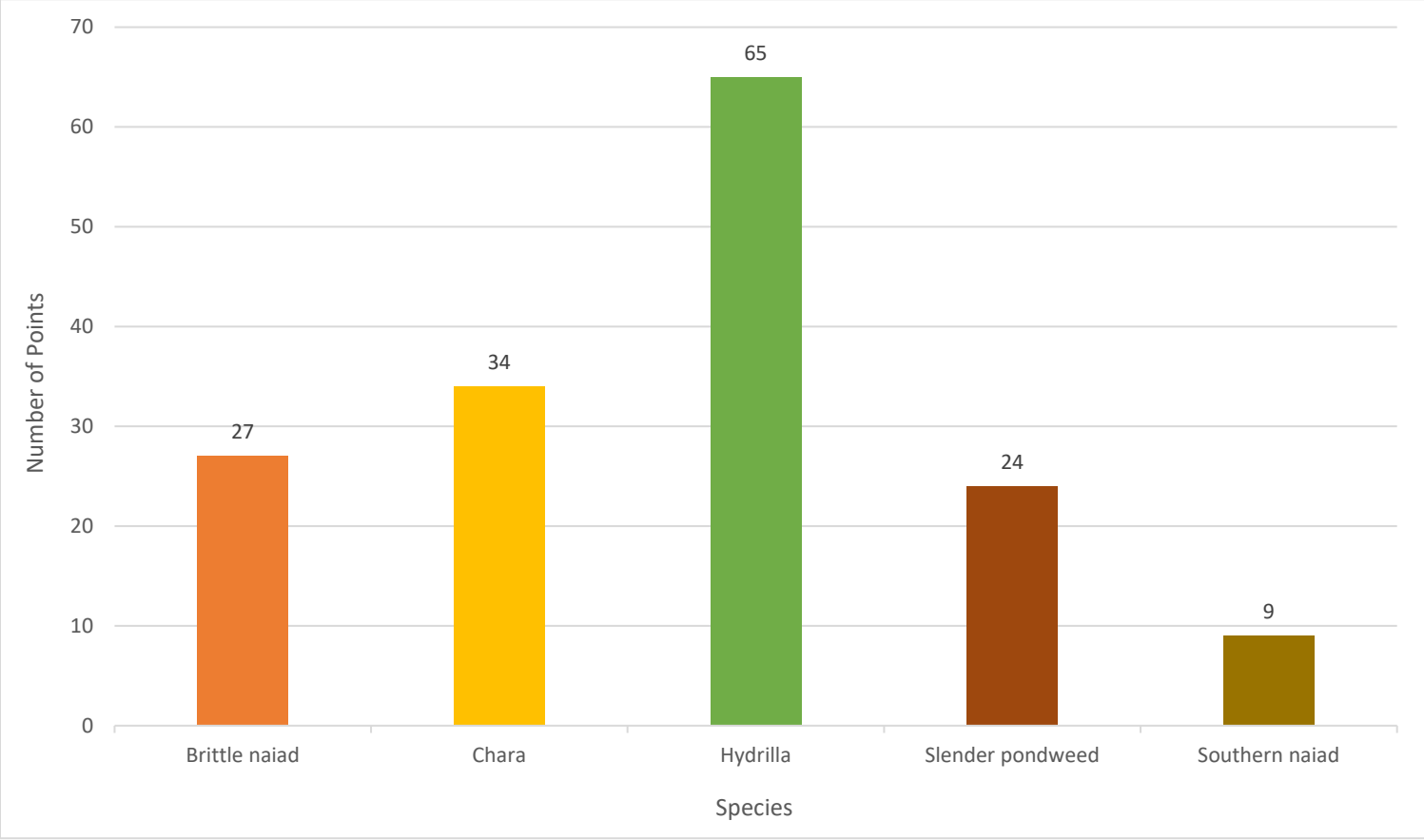

Figure 3. Relative abundance during the 2022 Cane Creek Reservoir survey.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

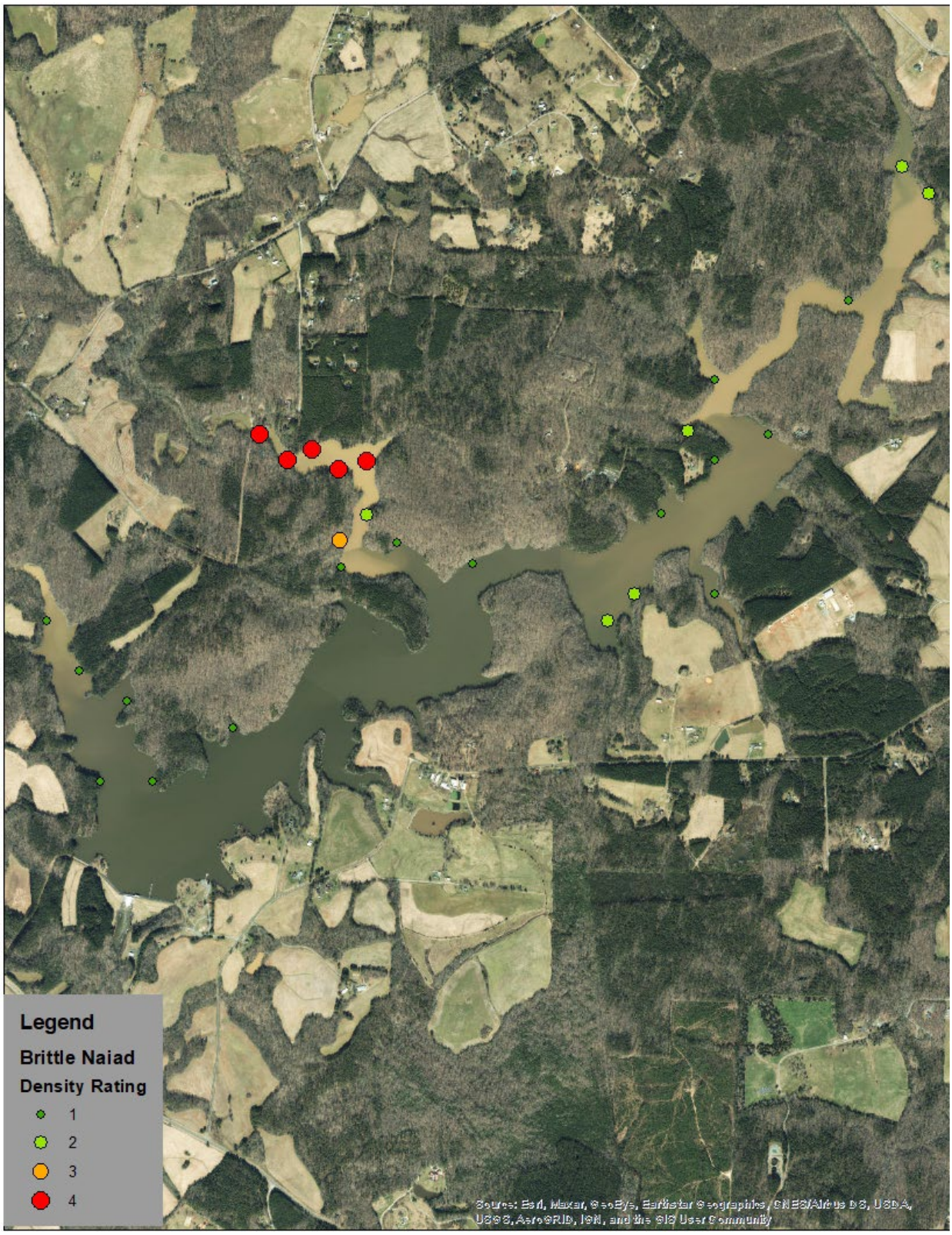

Figure 4. Map showing Brittle Naiad locations and density ratings.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

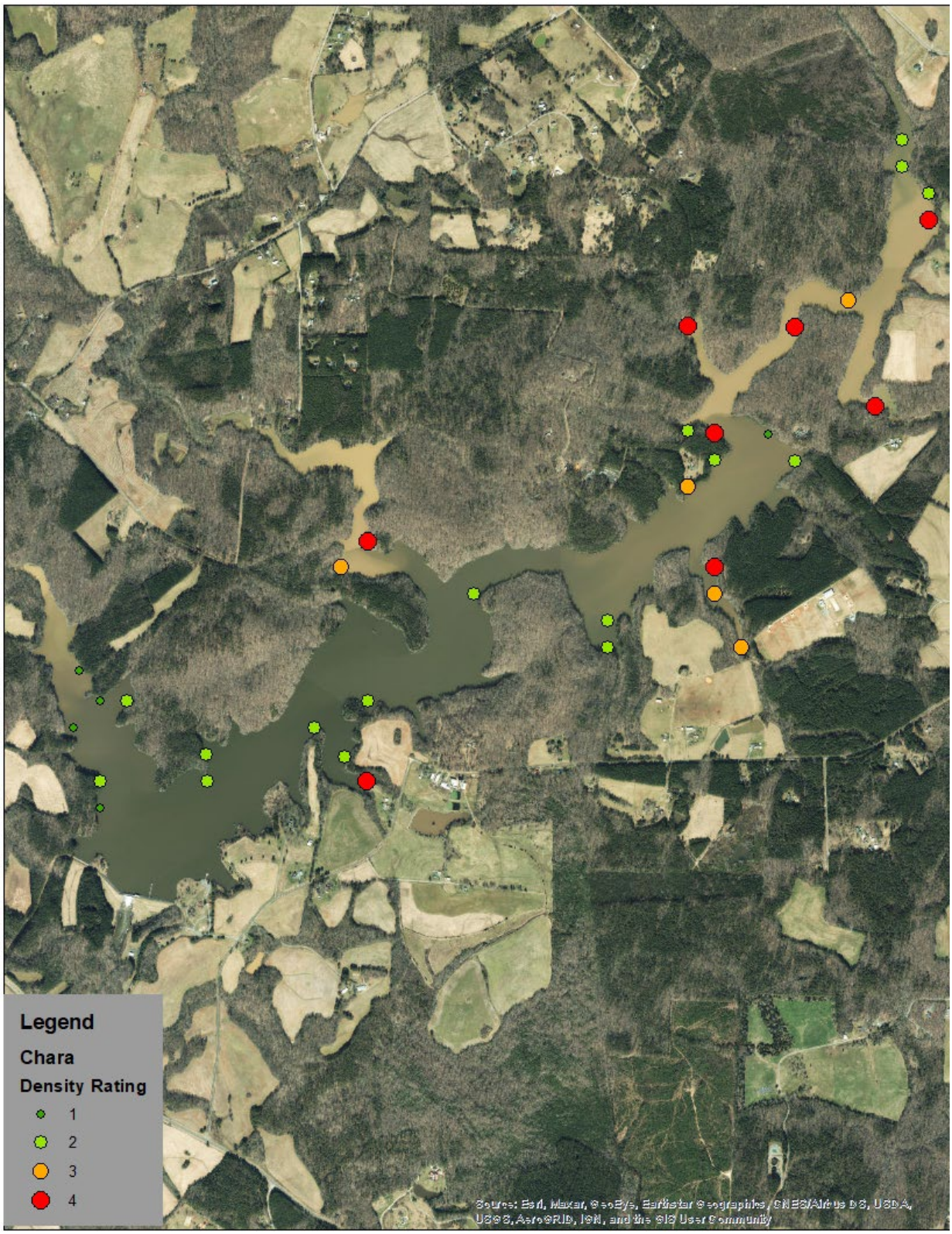

Figure 5. Map showing location of Chara and density rating.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

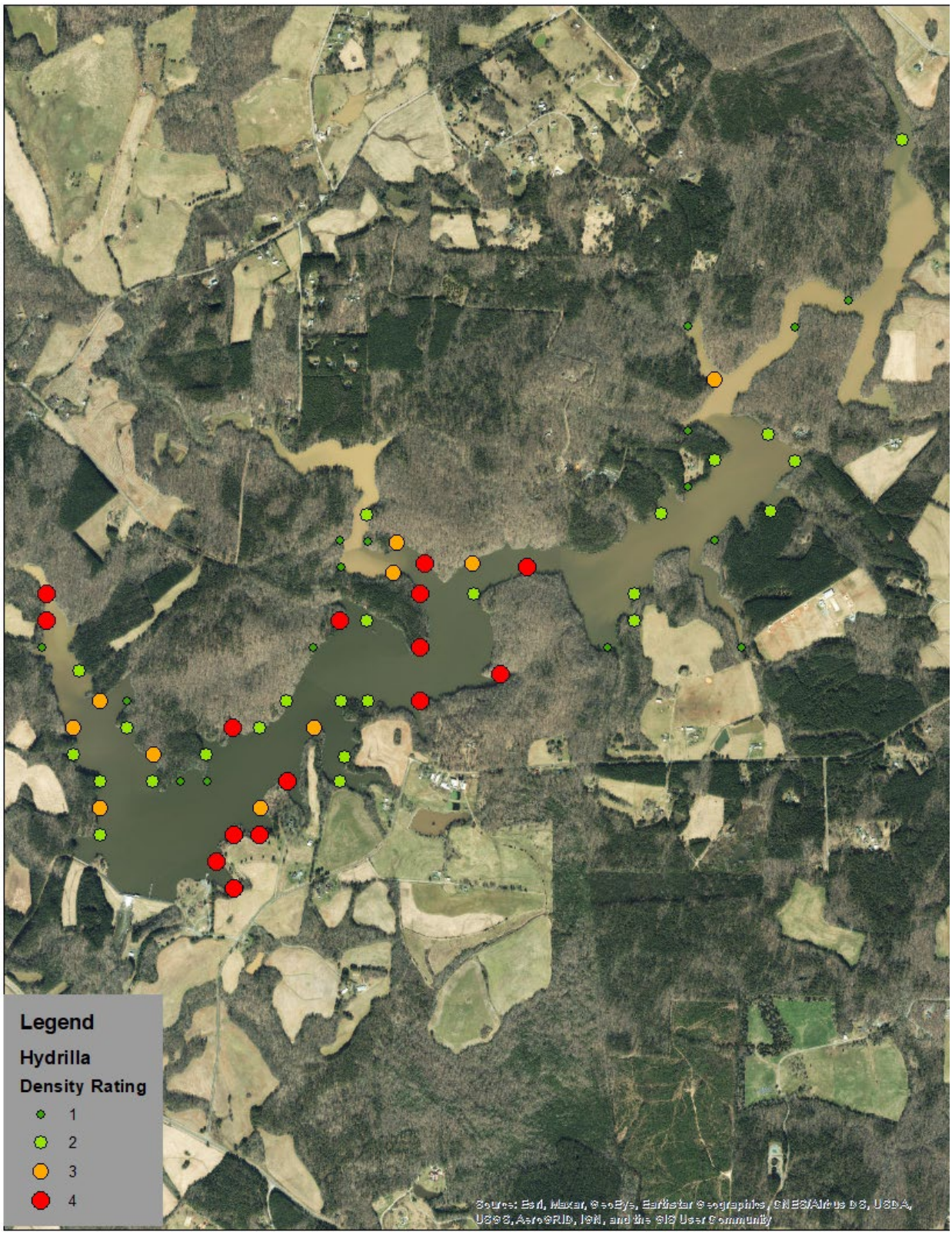

Figure 6. Map showing location of Hydrilla and density rating.

2022 Cane Creek Reservoir Submerged Aquatic Vegetation (SAV) Survey
NC Division of Water Resources

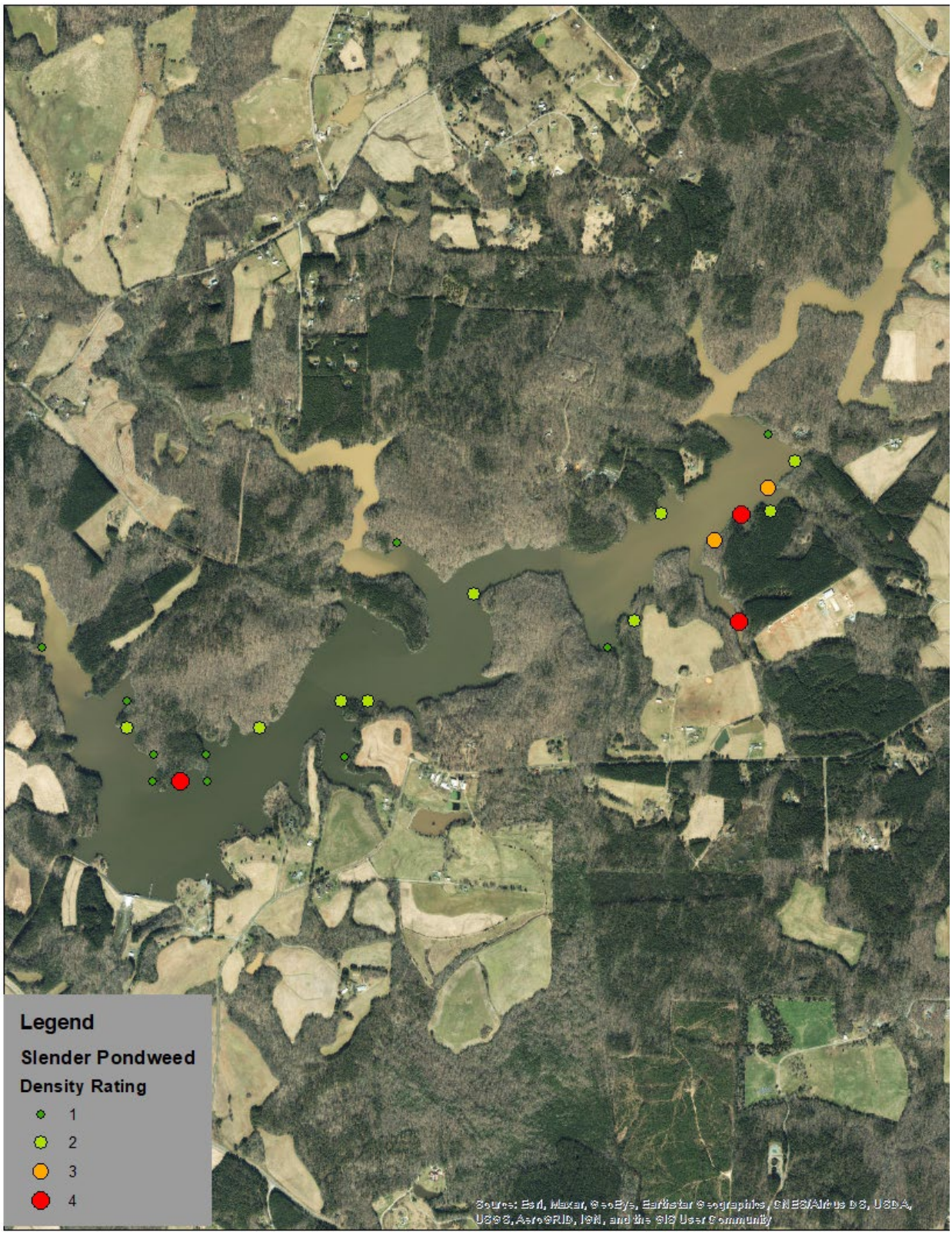

Figure 7. Map showing location of Slender Pondweed and density rating.

Figure 8. Map showing location of Southern Naiad and density rating.

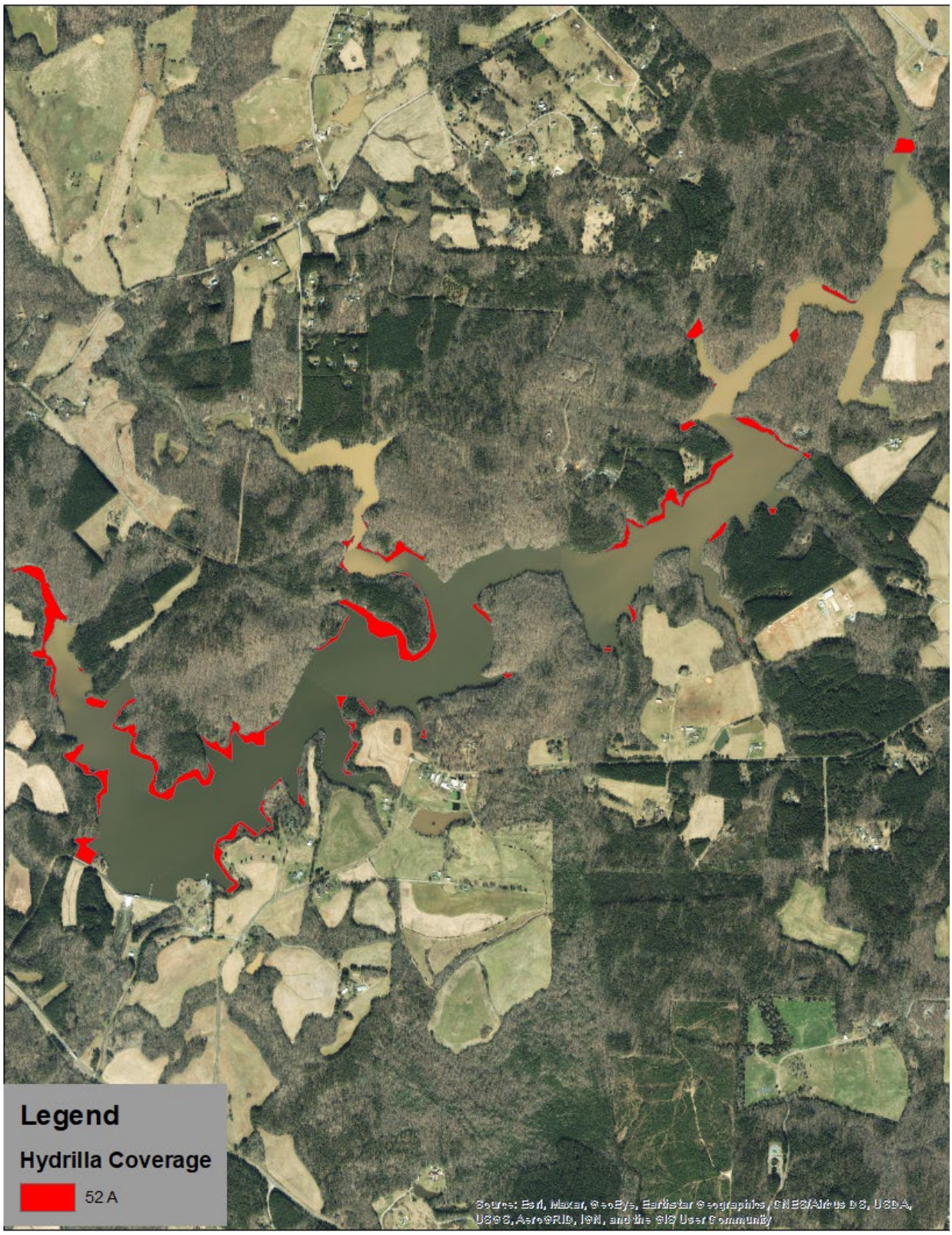

Figure 9. Map showing coverage of Hydrilla (52 acres).

Figure 10. Map showing coverage of Brittle Naiad (29 acres).