2021 Cane Creek Reservoir 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 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. 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 = <25%; 2= 25% - 50%; 3= 50% - 75%; 4= 75% - 100%). Additionally, a recording fathometer (SONAR) was used to map and record the bottom. Roughly 26 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

A total of 94 points were sampled during the 2021 survey (Figure 1). SAV was found at 72, or 77%, of the rake toss points (Figure 2). Hydrilla (*Hydrilla verticillata*) was found at 20, or 21%, of the rake toss points (Figure 3). The estimated Hydrilla coverage is 12 acres (Figure 4). Other SAV found during the survey included Brittle Naiad (*Najas minor*), Proliferating Spikerush (*Eleocharis baldwinii*) and Southern naiad (*Najas guadalupensis*). Brittle naiad was found at 30, or 32%, of the rake toss points (Figure 5). Proliferating Spikerush was found at 45, or 48%, of the rake toss points (Figure 6). Southern naiad was found at 36, or 38%, of the rake toss points (Figure 7). The macroalgae Chara (*Chara spp.*) was found at 13, or 14%, of the rake toss points (Figure 8). Alligatorweed (*Alternanthera philoxeroides*) was also found during the survey. It was found scattered along the shoreline in multiple locations throughout the reservoir. The largest mats were observed in the Watery Fork arm.

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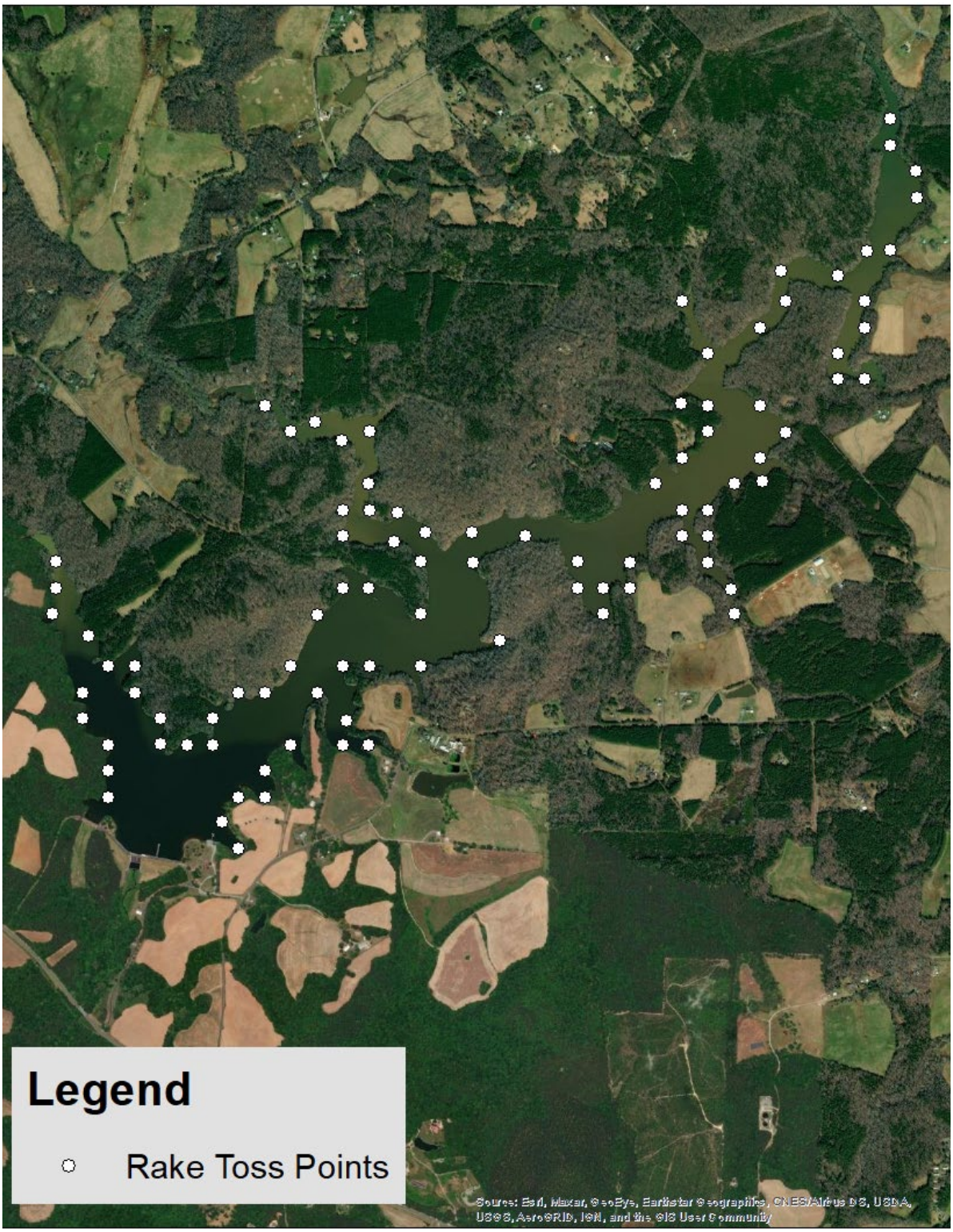

Figure 1. Map showing pre-determined rake toss points.

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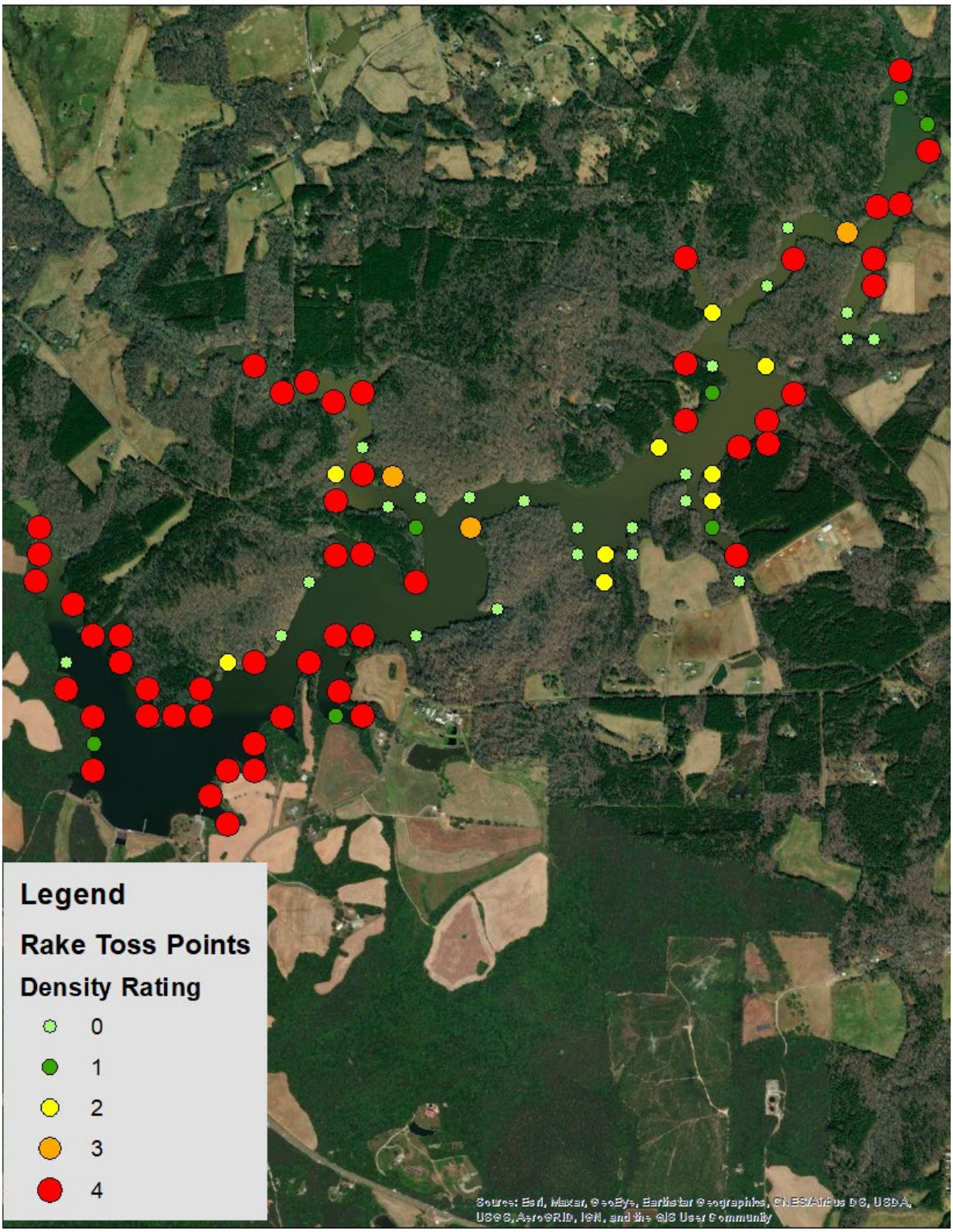

Figure 2. Map showing density ratings at each rake toss point.

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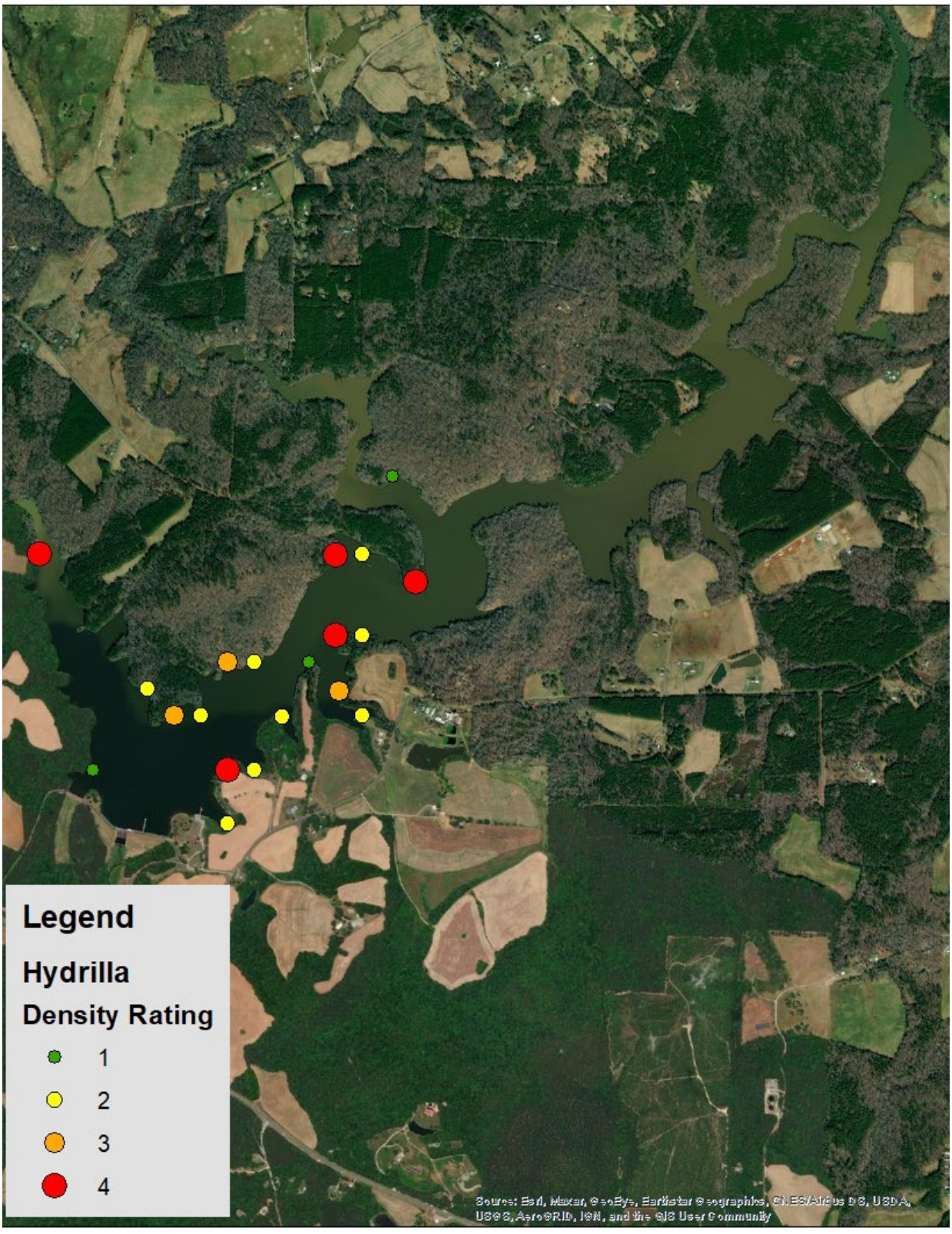

Figure 3. Map showing location of Hydrilla and density rating.

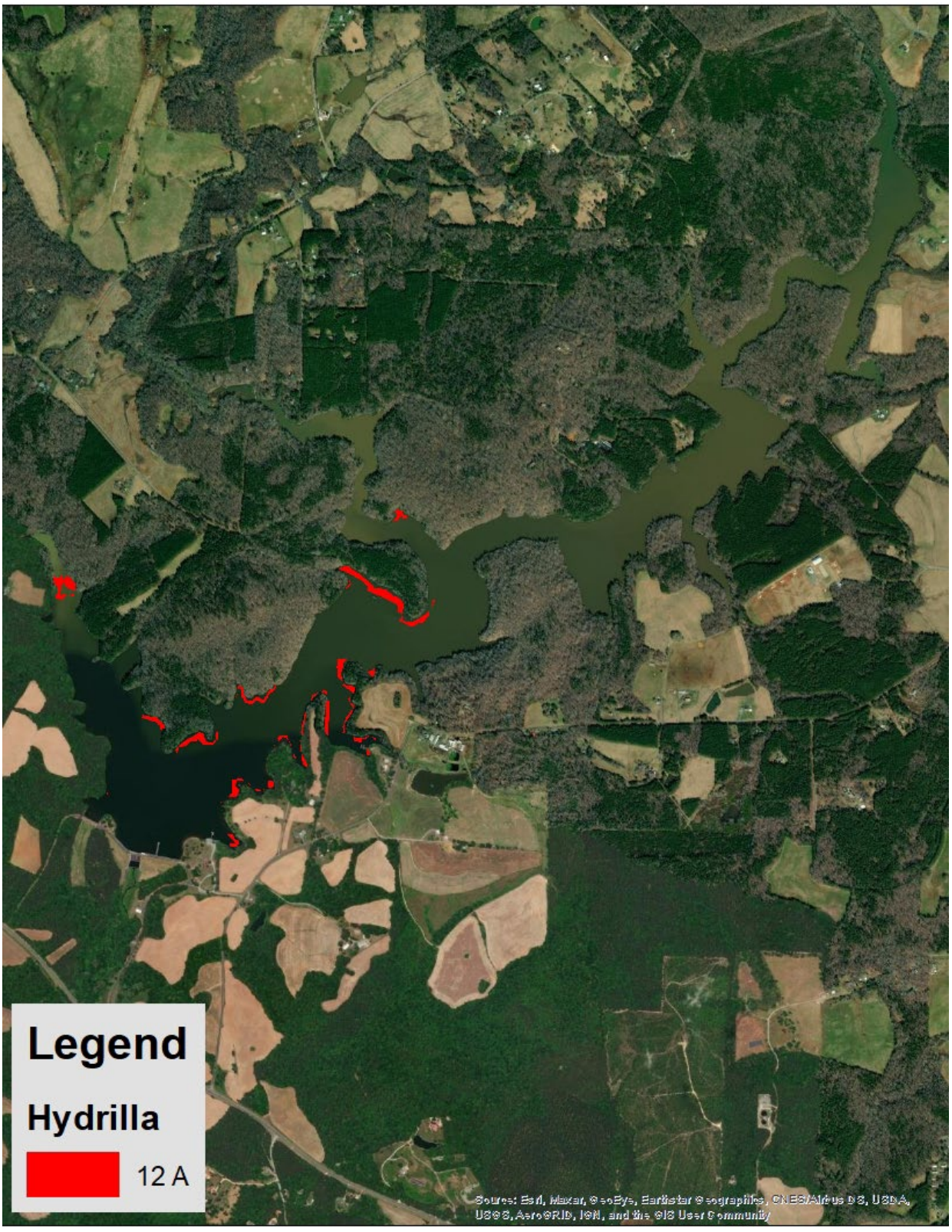

Figure 4. Map showing Hydrilla coverage (~ 12 acres).

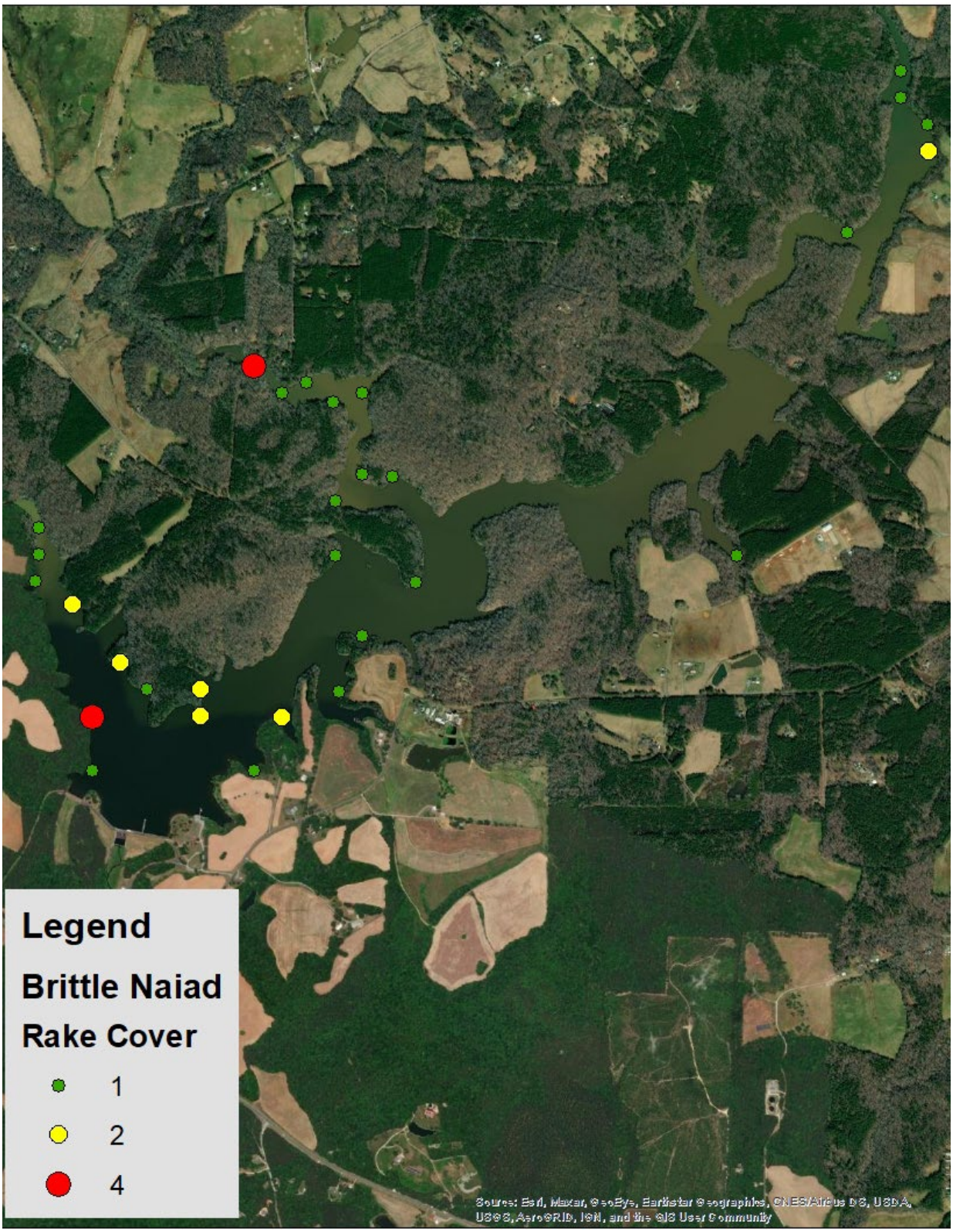

Figure 5. Map showing Brittle naiad location and density ratings.

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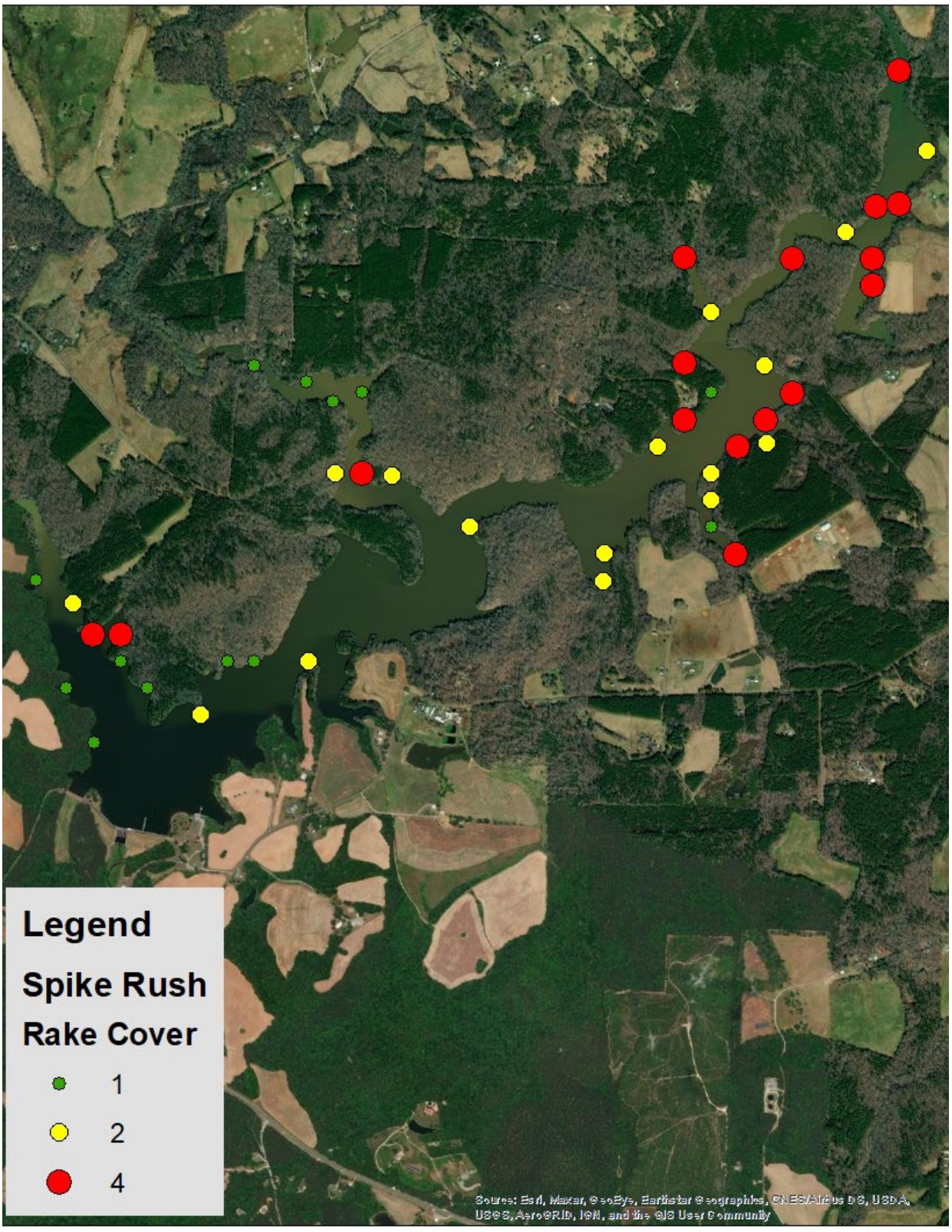

Figure 6. Map showing Proliferating Spikerush location and density ratings.

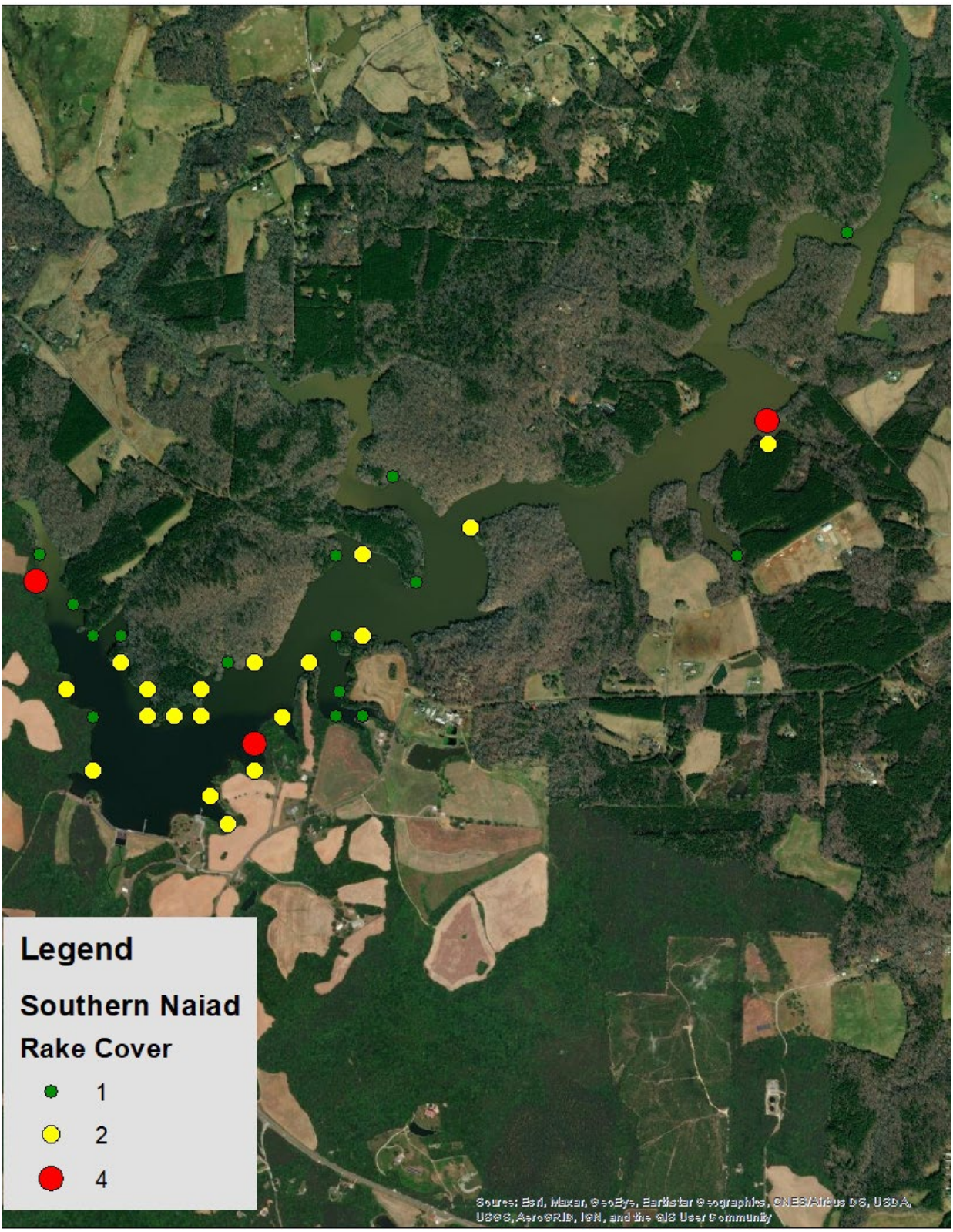

Figure 7. Map showing Southern Naiad location and density ratings.

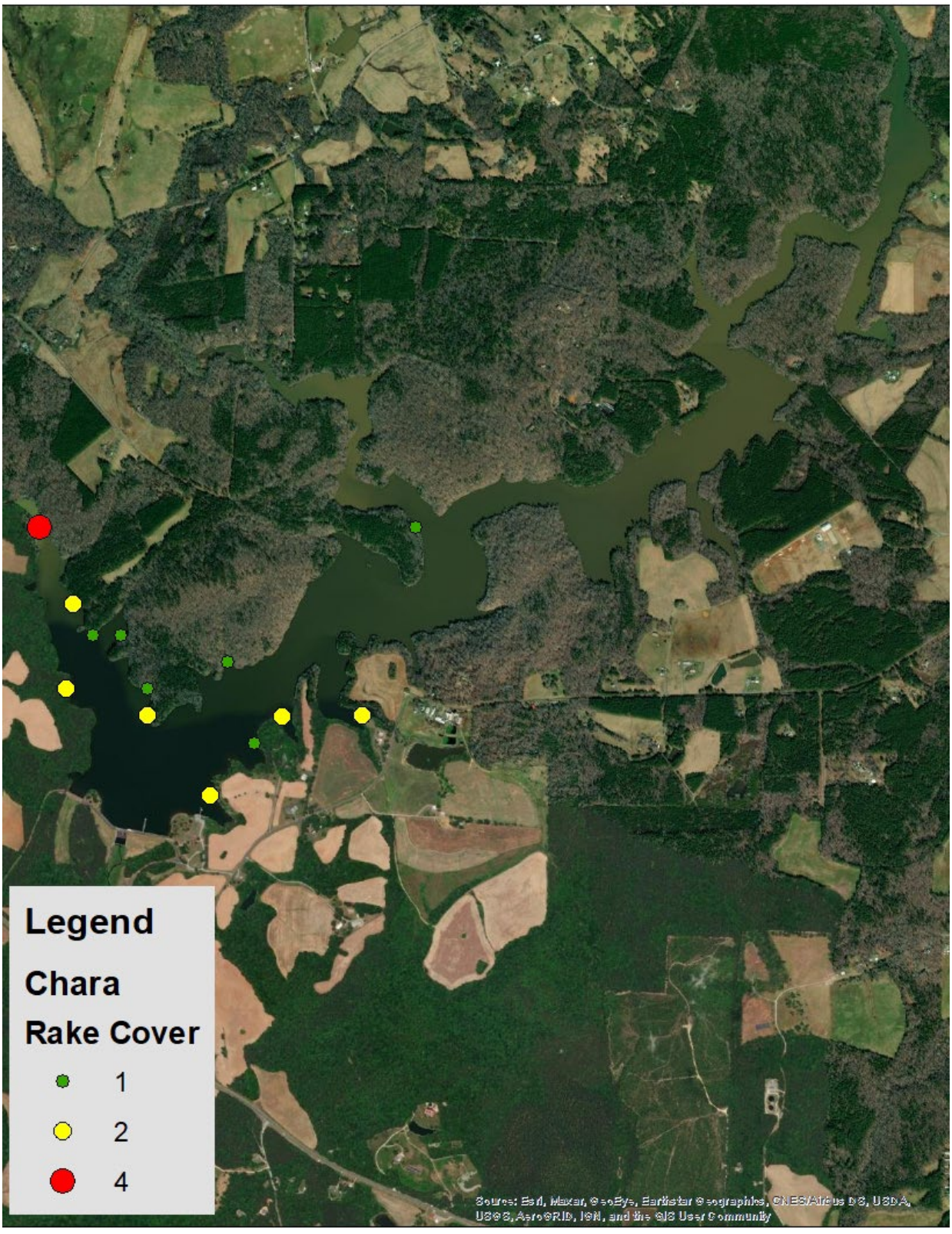

Figure 8. Map showing Chara location and density ratings.