2021 Lake Rim 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 found in Lake Rim in the summer 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)).

Methods

The AWCP completed a full-lake survey of Lake Rim on November 2nd. 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 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

A total of 29 points were sampled (Figure 1). SAV was found at 28, or 97%, of the rake toss points (Figure 2). Hydrilla was found at 4, or 14%, of the rake toss points (Figure 3). The estimated Hydrilla coverage in the lake is 1.2 acres (Figure 4). Other SAV found during the survey includes Sandhills Milfoil (*Myriophyllum laxum*), Bladderwort (*Utricularia spp.*) and Southern Naiad (*Najas guadalupensis*). Sandhills Milfoil was found at 26, or 90%, of the rake toss points (Figure 5). The estimated coverage of Sandhills Milfoil is 21 acres (Figure 6). Bladderwort was found at 13, or 45%, of the rake toss points (Figure 7). Southern Naiad was found at 2, or 7%, of the rake toss points (Figure 8). Other native aquatic vegetation observed during the survey were Spatterdock (*Nuphar advena*), Water Lilly (*Nymphaea odorata*) and Watershield (*Brasenia schreberi*). Water Hyacinth (*Pontederia crassipes*) and Water Lettuce (*Pistia stratiotes*), both non-native plants, were observed in the upper part of the reservoir (Figure 9). Only one plant of each species was found.

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

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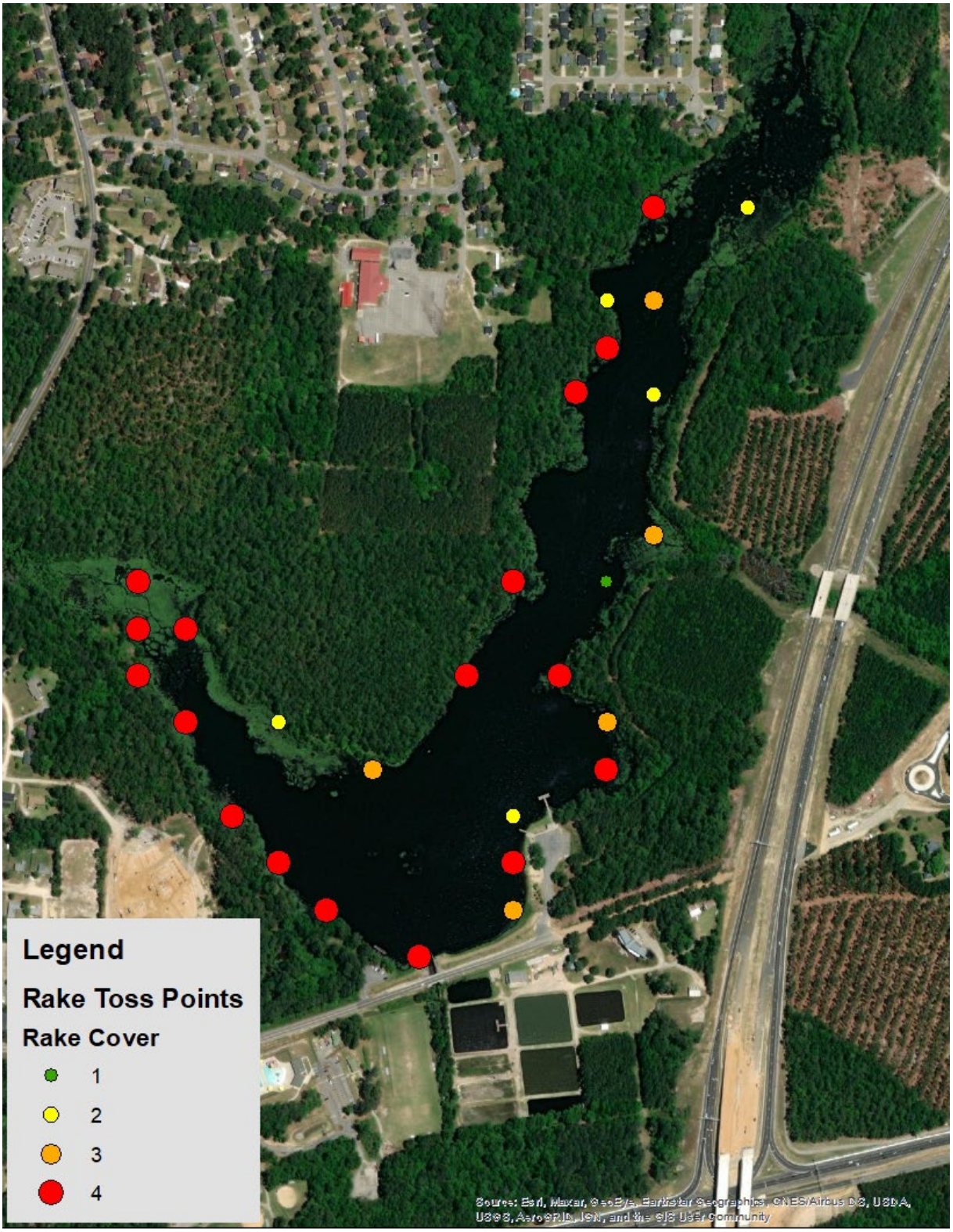

Figure 2. Map showing location and density of SAV found during the survey.

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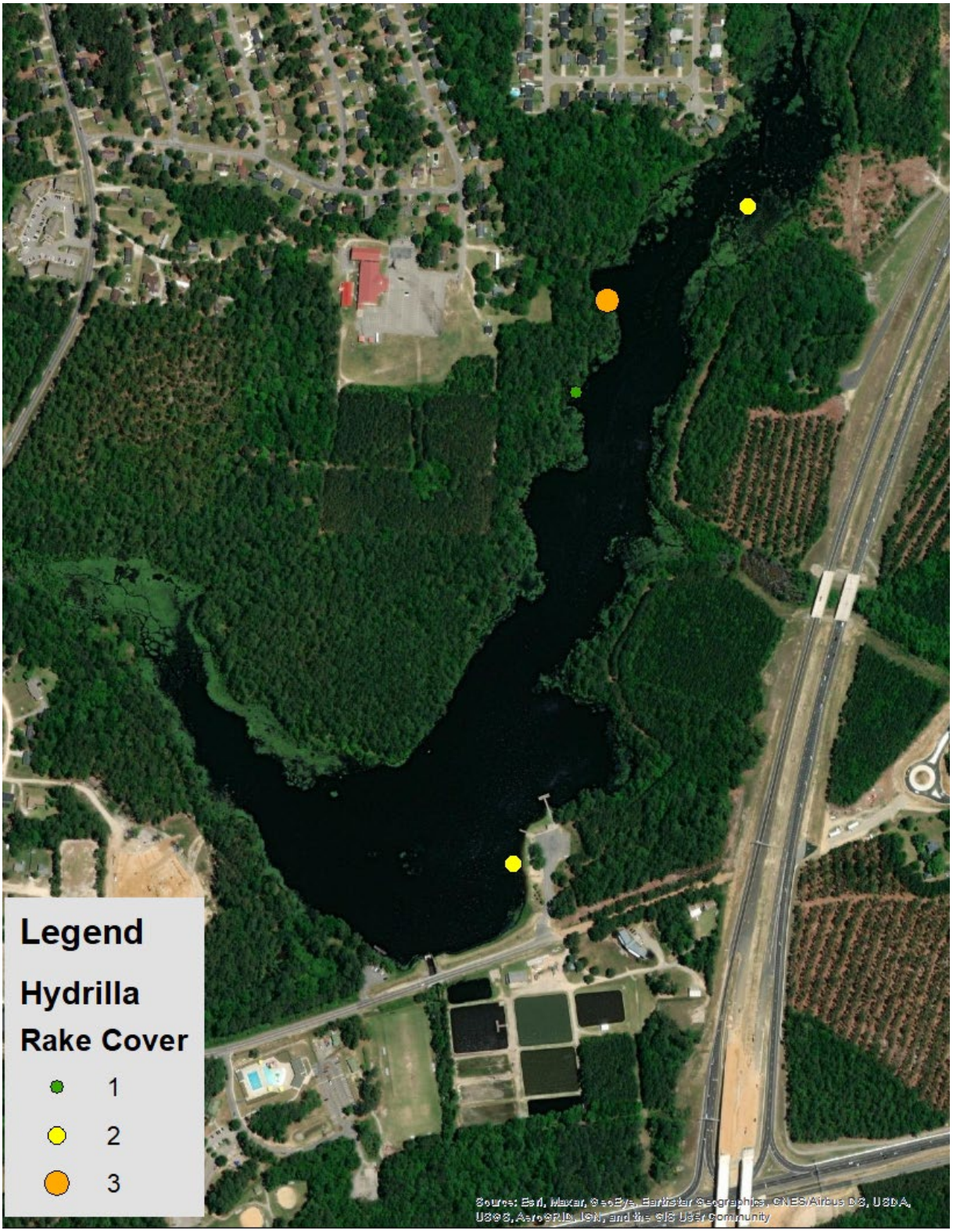

Figure 3. Map showing locations and density of Hydrilla.

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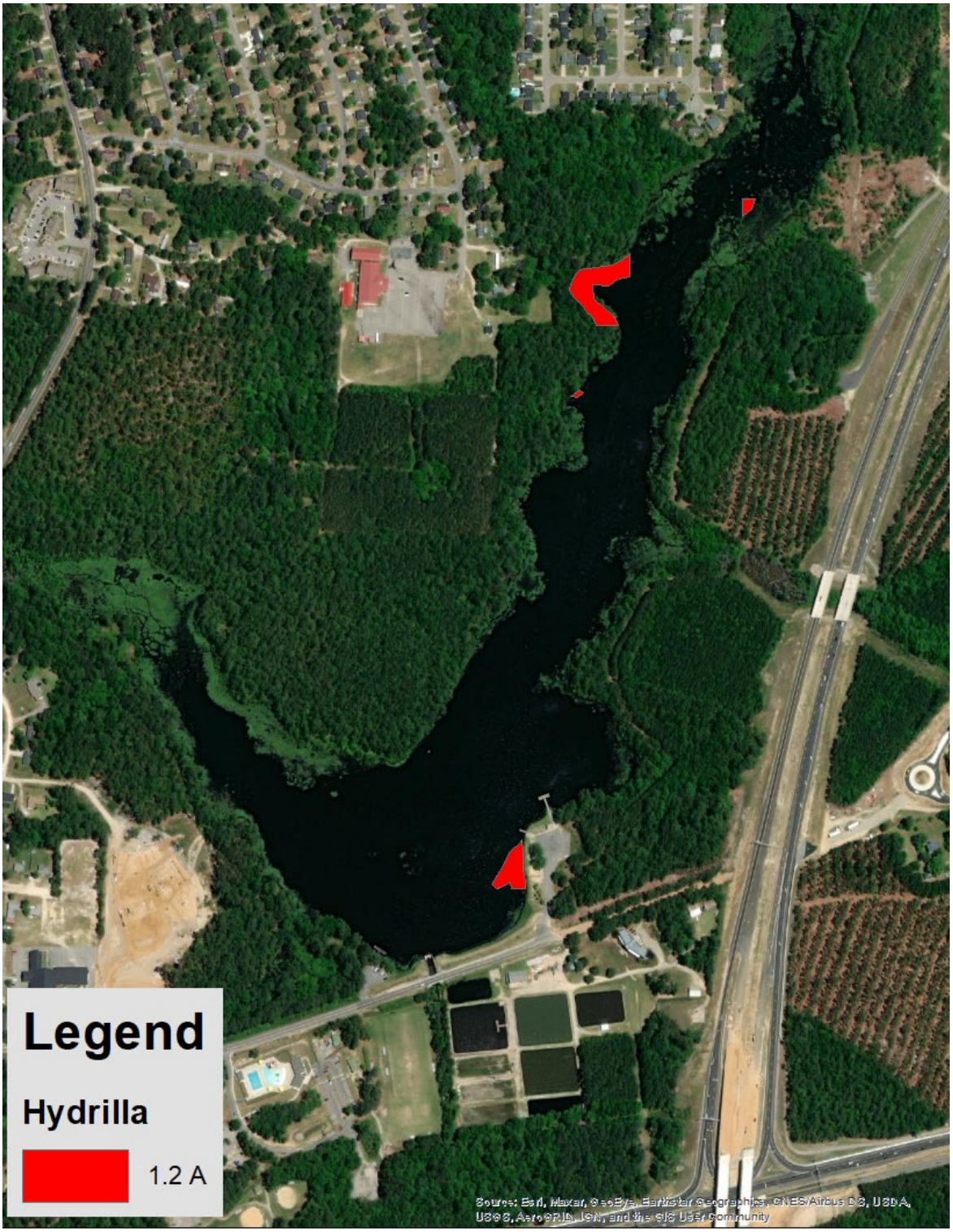

Figure 4. Map showing Hydrilla coverage (1.2 acres).

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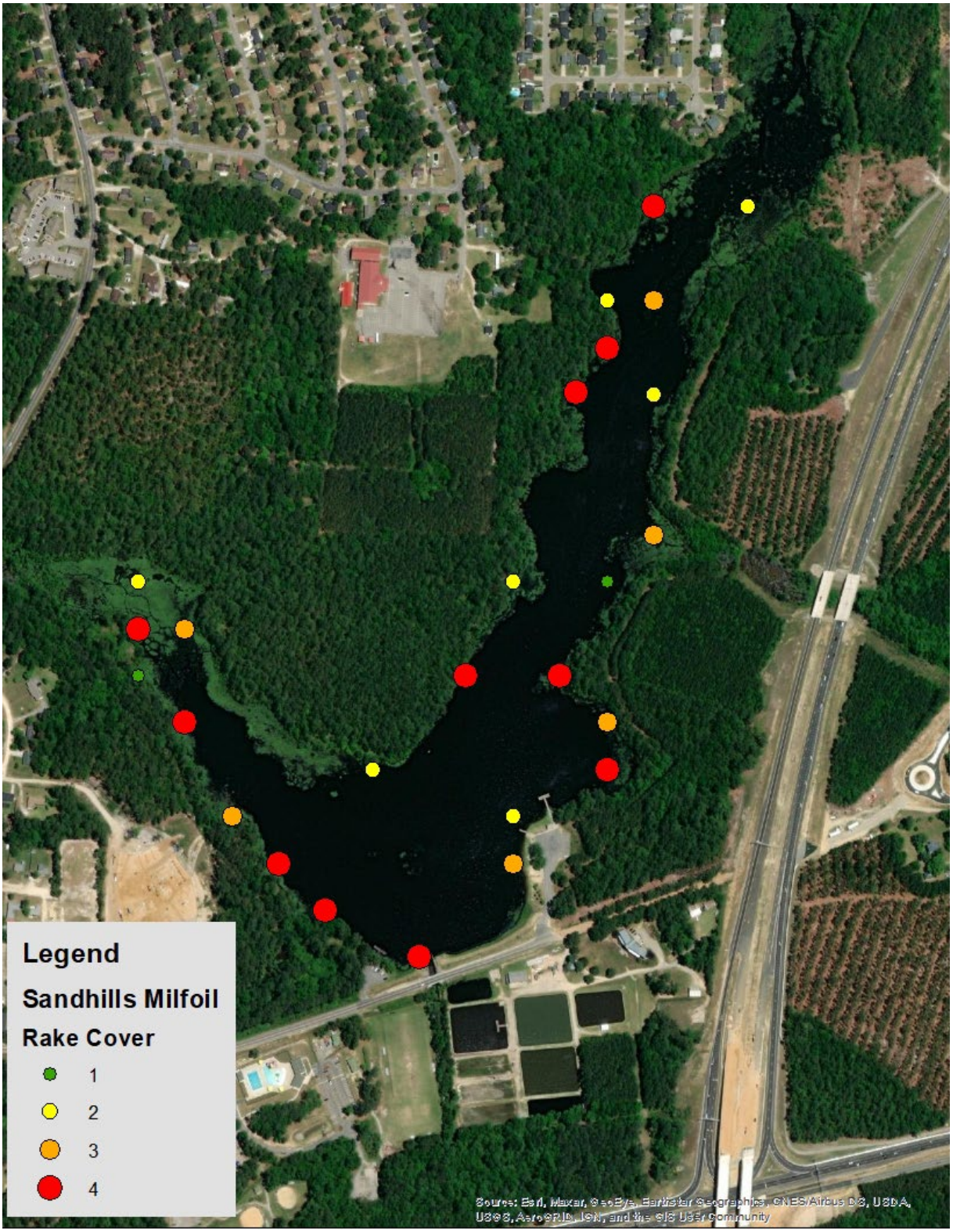

Figure 5. Map showing location and density of Sandhills Milfoil.

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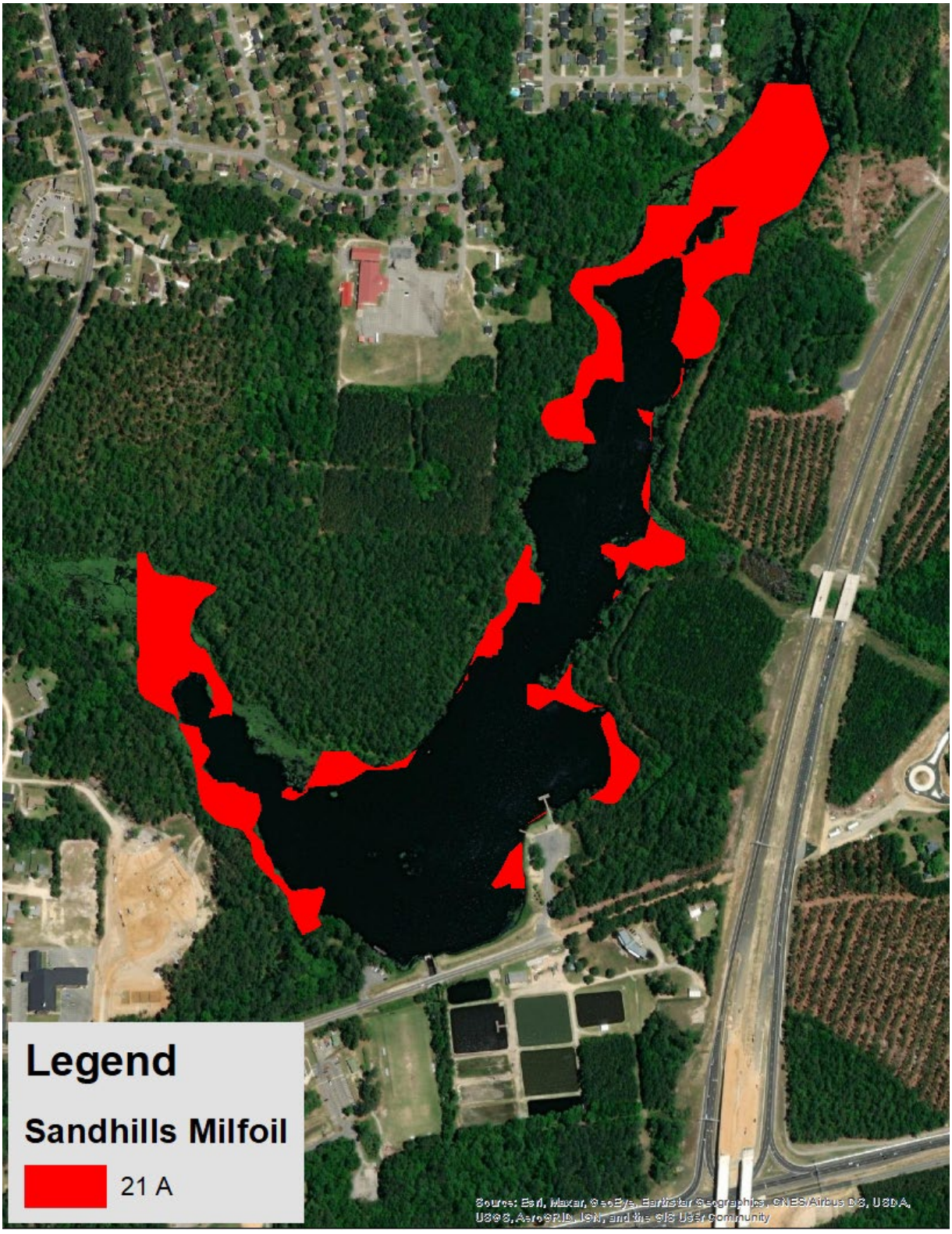

Figure 6. Map showing coverage of Sandhills Milfoil (21 acres).

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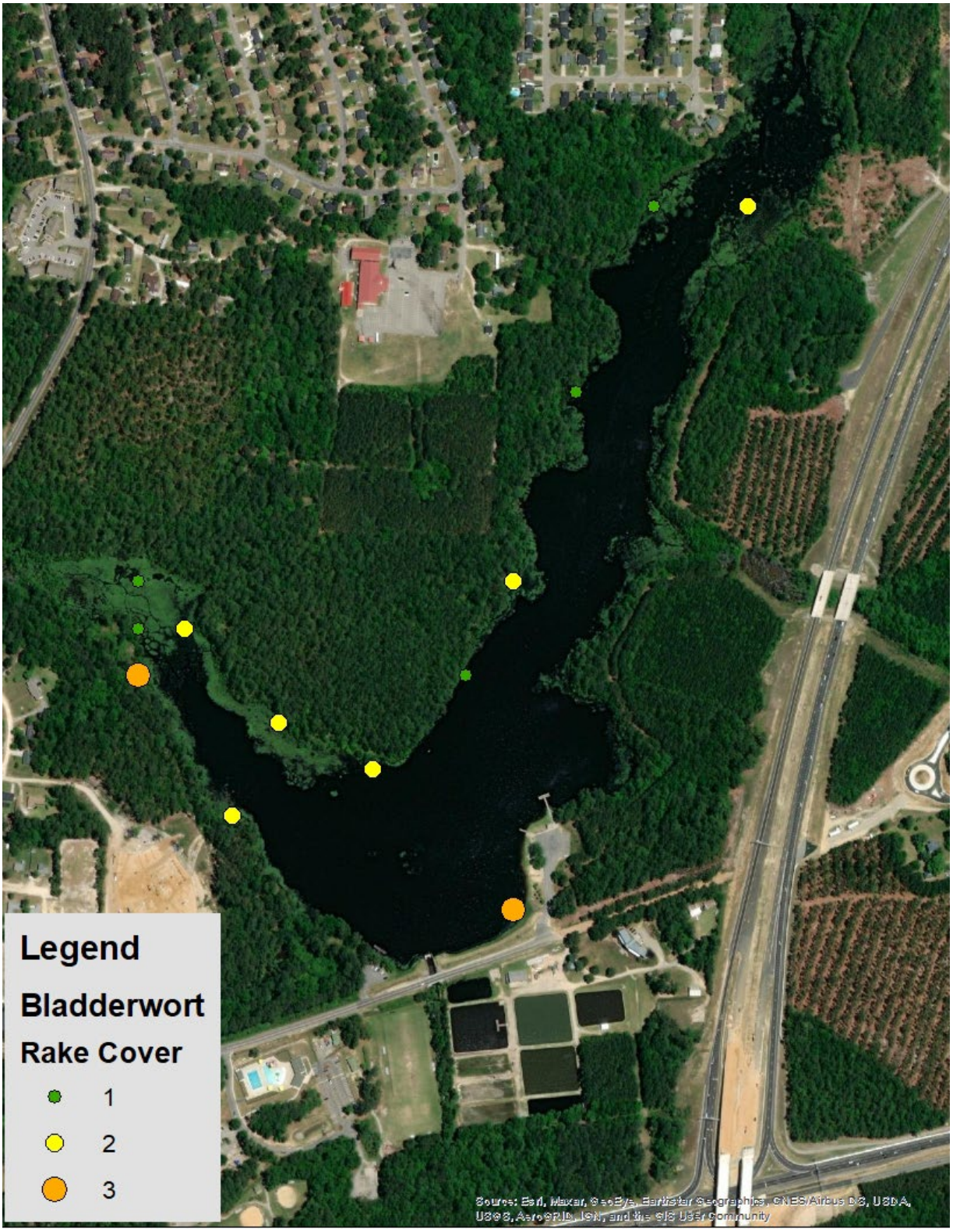

Figure 7. Map showing Bladderwort location and density.

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Figure 8. Map showing Southern Naiad location and density.

Figure 9. Picture showing Water Hyacinth and Water Lettuce found during survey.