

# 2021 DWR Submerged Aquatic Vegetation Survey Report

## Lake Santeetlah

### 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 Lake Santeetlah in 2012. Since then the Aquatic Weed Program (AWCP) and Brookfield Renewable 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 \(ncwater.org\)](https://ncwater.org/)).

### Methods

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 = <25%; 2= 25% - 50%; 3= 50% - 75%; 4= 75% - 100%). Additionally, a recording fathometer (SONAR) was used to map and record the bottom. The SONAR data was uploaded to a third-party company, Biobase, to quantify the depth and biovolume data. Approximately 61.5 miles of SONAR was logged. 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

The survey was completed on September 15 - September 17. A total of 198 points were sampled during 2021 (Figure 1). Vegetation was found at 82, or 41%, of the rake toss points (Figure 2). Hydrilla was not found during the survey. Other aquatic vegetation observed during the survey was Proliferating spikerush (*Eleocharis baldwinii*), Small waterwort (*Elatine minima*) and an aquatic moss (*Fontinalis spp.*). Proliferating spikerush was found at 64, or 32%, of the points (Figure 3). Small waterwort was found at 14, or 7%, of the points (Figure 4). The aquatic moss was found at 2, or 1%, of the points (Figure 5). Two species of macroalgae were also observed during the survey, Chara (*Chara spp.*) and Nitella (*Nitella spp.*). Chara was found at 29, or 15%, of the points (Figure 6). Nitella was found at 1, or 0.5%, of the points (Figure 7).

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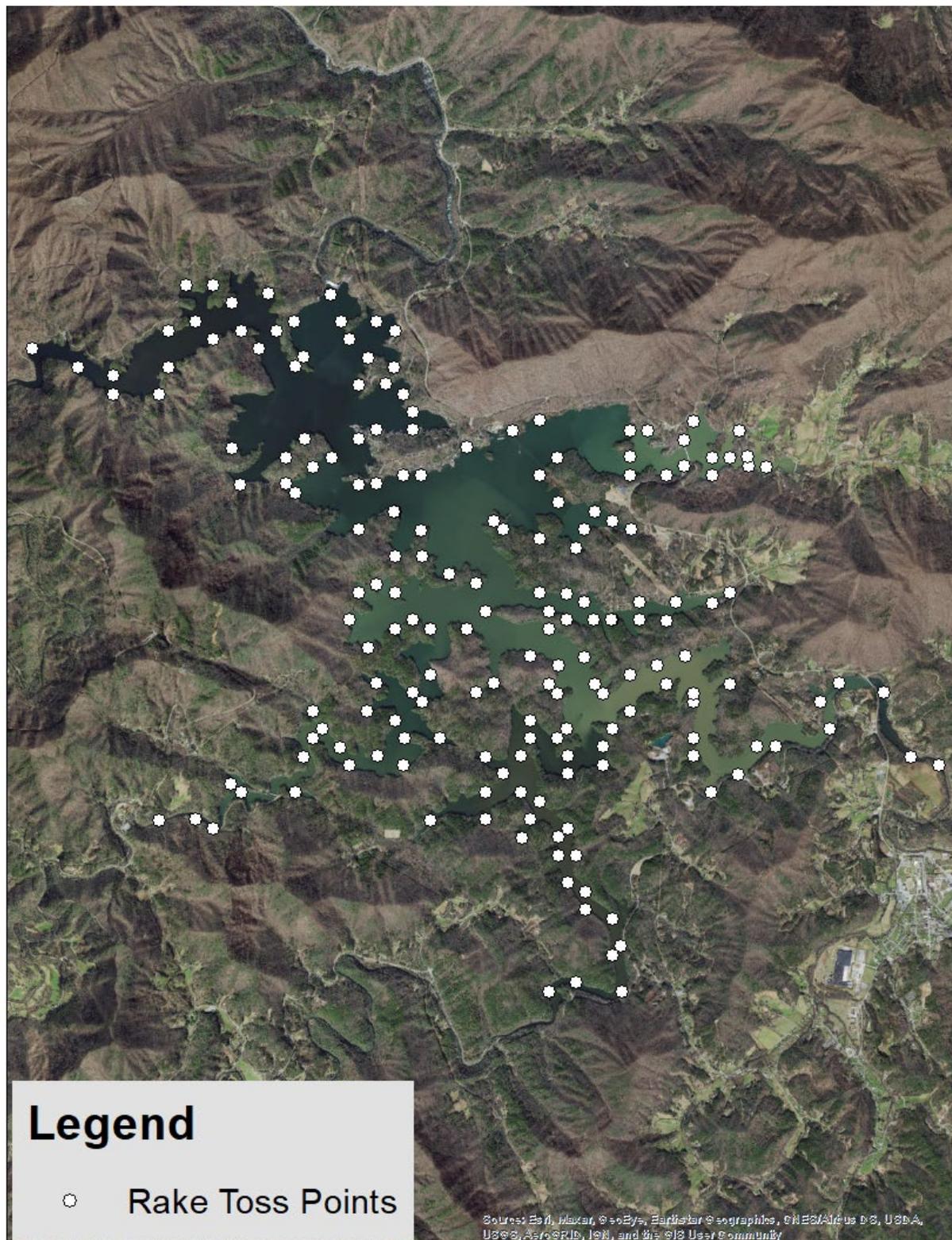


Figure 1. Map showing pre-determined rake toss points at Lake Santeetlah in 2021.

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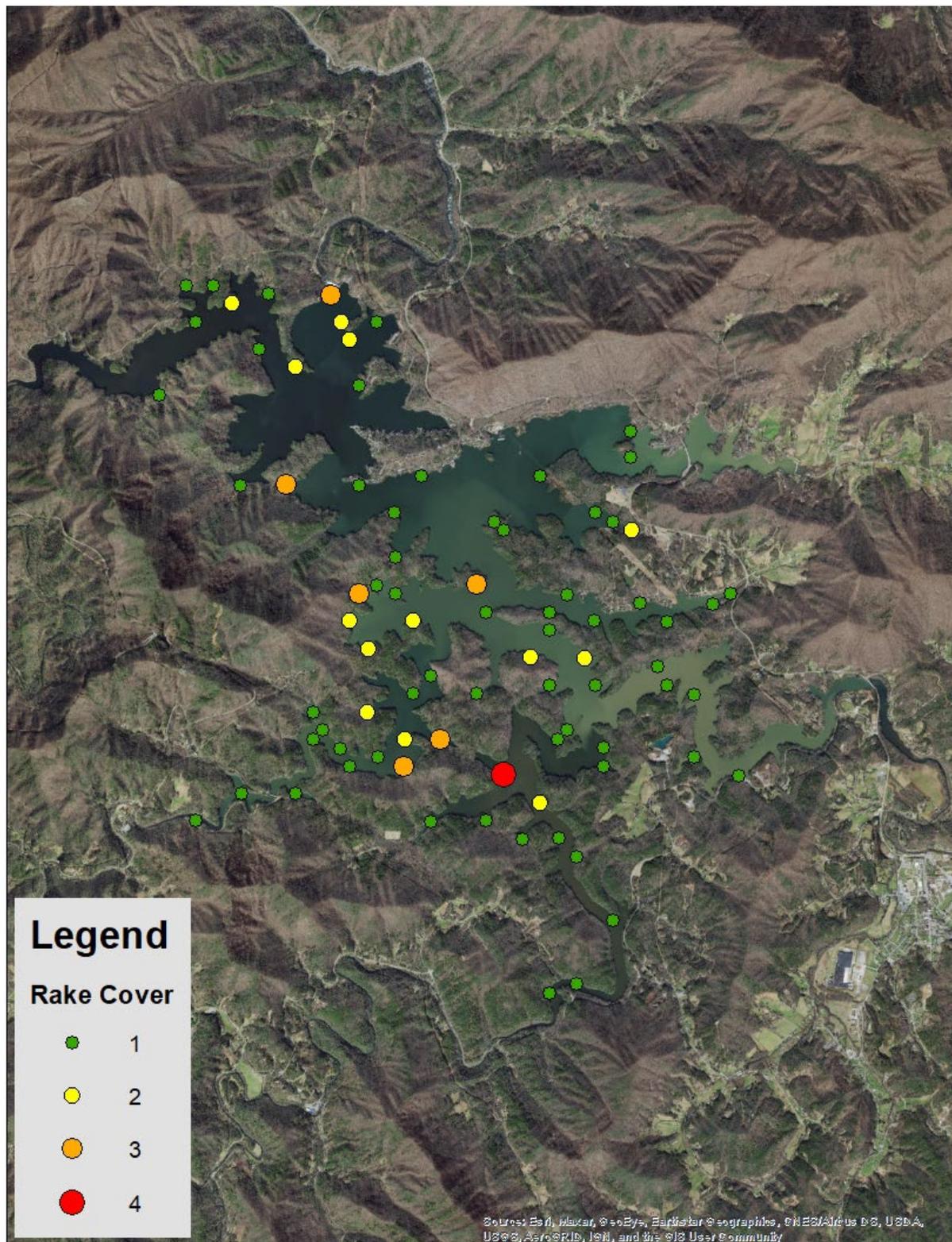


Figure 2. Map showing density ratings at rake toss points.

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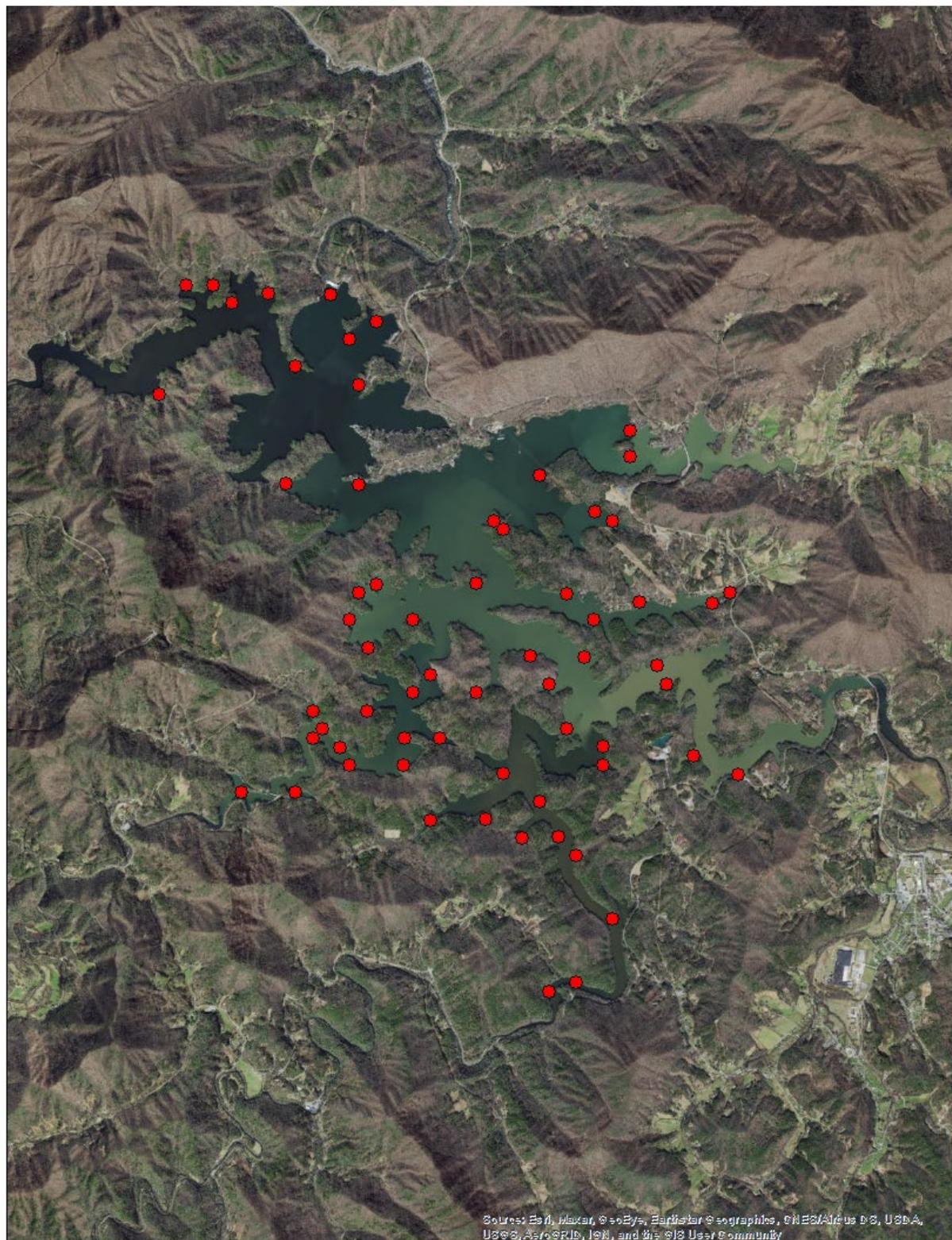


Figure 3. Map showing location of Proliferating spikerush.

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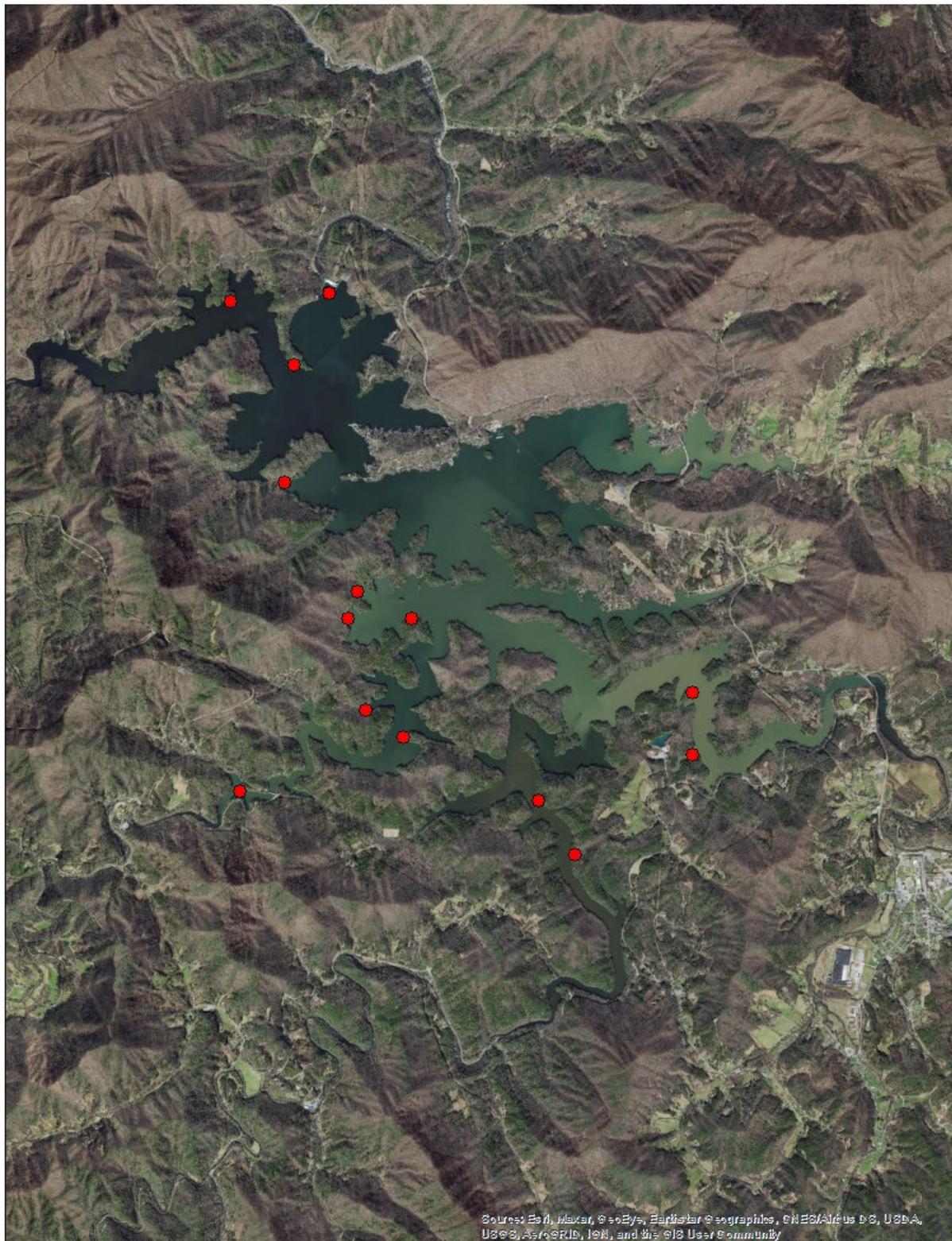


Figure 4. Map showing location of Small waterwort.

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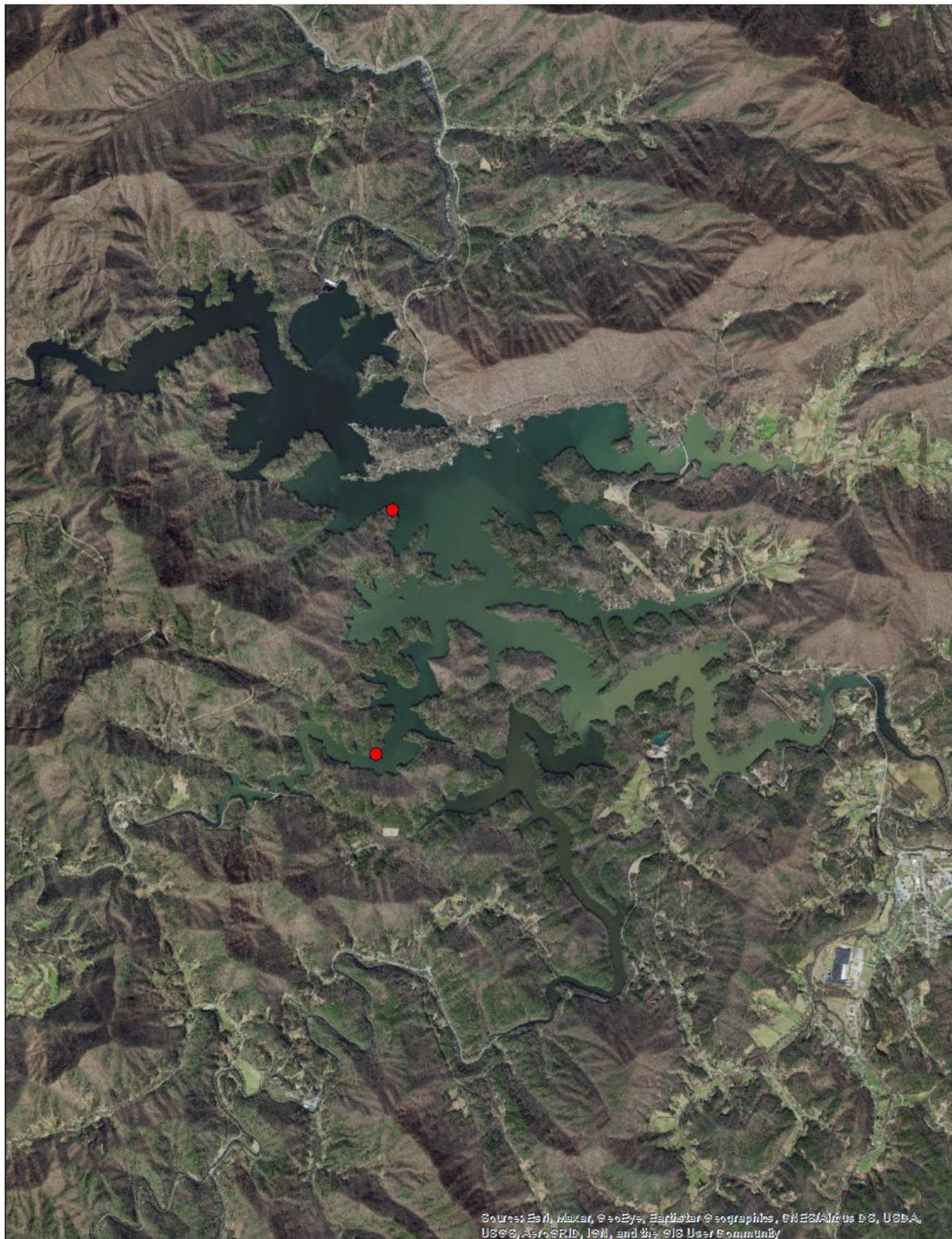


Figure 5. Map showing location of Fontinalis (aquatic moss).

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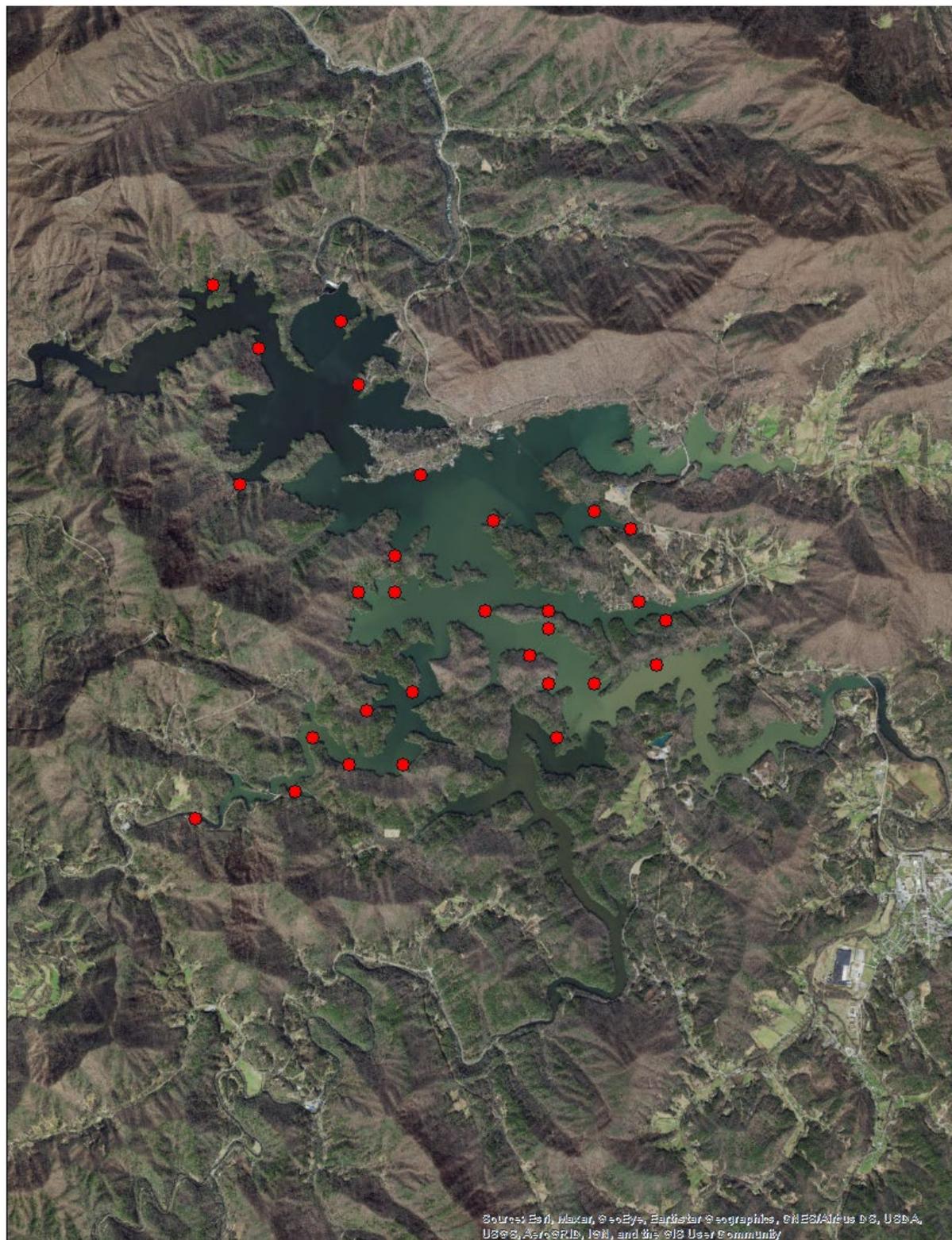


Figure 6. Map showing location of the macroalgae Chara.

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Figure 7. Map showing the location of the macroalgae Nitella.