

# 2019 Lake Tillery 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 Lake Tillery in 2006, around the Swift Island boat ramp, and herbicide applications began that year as well. Since then multiple partners including the Aquatic Weed Control Program (AWCP), the NC Wildlife Resources Commission (WRC), and Duke Energy 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 \(ncwater.org\)](https://ncwater.org)).

### Methods

The AWCP, with assistance from Duke Energy, completed a full-lake survey of Lake Tillery October 23<sup>rd</sup> - October 25<sup>th</sup> and November 5<sup>th</sup> - November 6<sup>th</sup>. Three rake tosses were conducted at pre-determined points along the shoreline to determine presence/absence of SAV as well as quantify rake coverage. Additionally, a recording fathometer (SONAR) was used to map and record the bottom. Roughly 89 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 197 points were sampled. Of those 197 points, Hydrilla was found at 3, or 2%, of them (Figure 1). The total estimated coverage of Hydrilla is 4 acres (Figure 2). The only other SAV that was found during the survey was Proliferating Spikerush, *Eleocharis baldwinii*. It was found at only 1 of the sample points (Figure 3). Other vegetation observed during the survey was Water Willow, *Justicia americana*, Alligatorweed, *Alternanthera philoxeroides*, and Cattail, *Typha spp.* The cyanobacteria *Lyngbya*, *Lyngbya wollei*, was also found during the survey. It was found at 4, or 2%, of the sample points (Figure 4). The estimated coverage of *Lyngbya* is 0.5 acres (Figure 5).

# 2019 Lake Tillery Submerged Aquatic Vegetation Survey NC Division of Water Resources

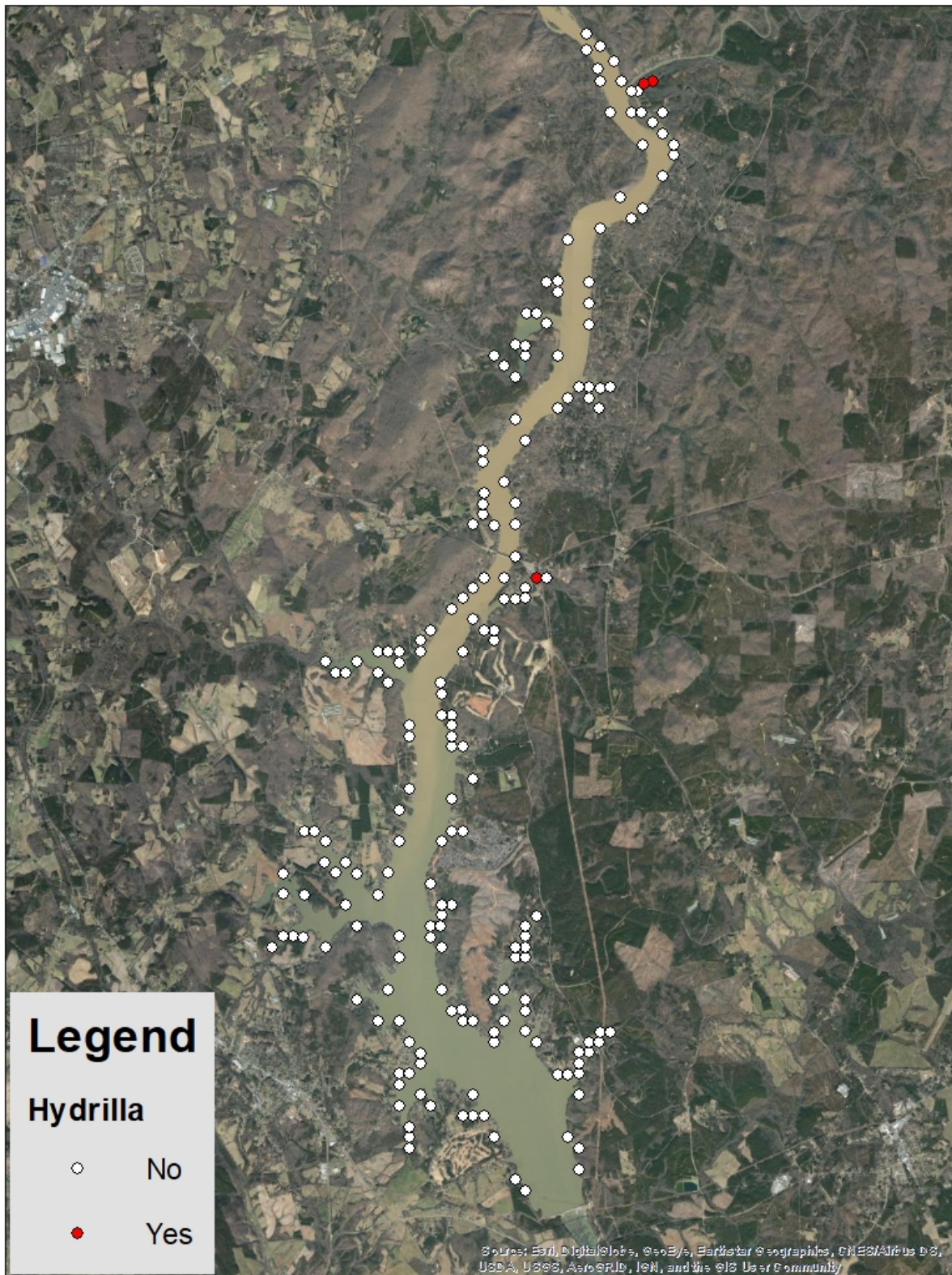


Figure 1. Map of rake toss points showing presence/absence of Hydrilla.

# 2019 Lake Tillery Submerged Aquatic Vegetation Survey NC Division of Water Resources



Figure 2. Map showing Hydrilla coverage (4 acres).

# 2019 Lake Tillery Submerged Aquatic Vegetation Survey NC Division of Water Resources

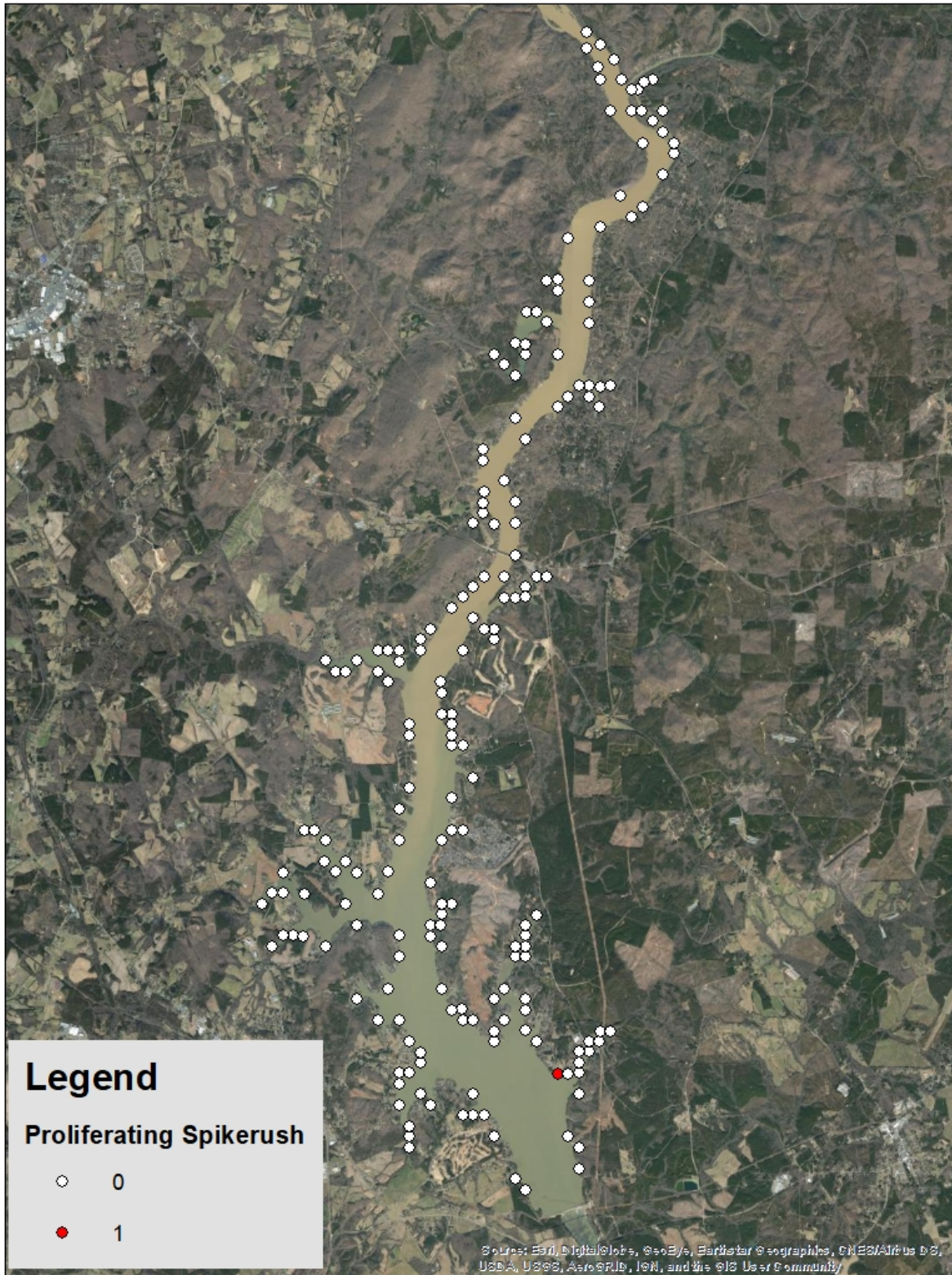


Figure 3. Map showing rake toss points presence/absence of Proliferating Spikerush.

# 2019 Lake Tillery Submerged Aquatic Vegetation Survey NC Division of Water Resources

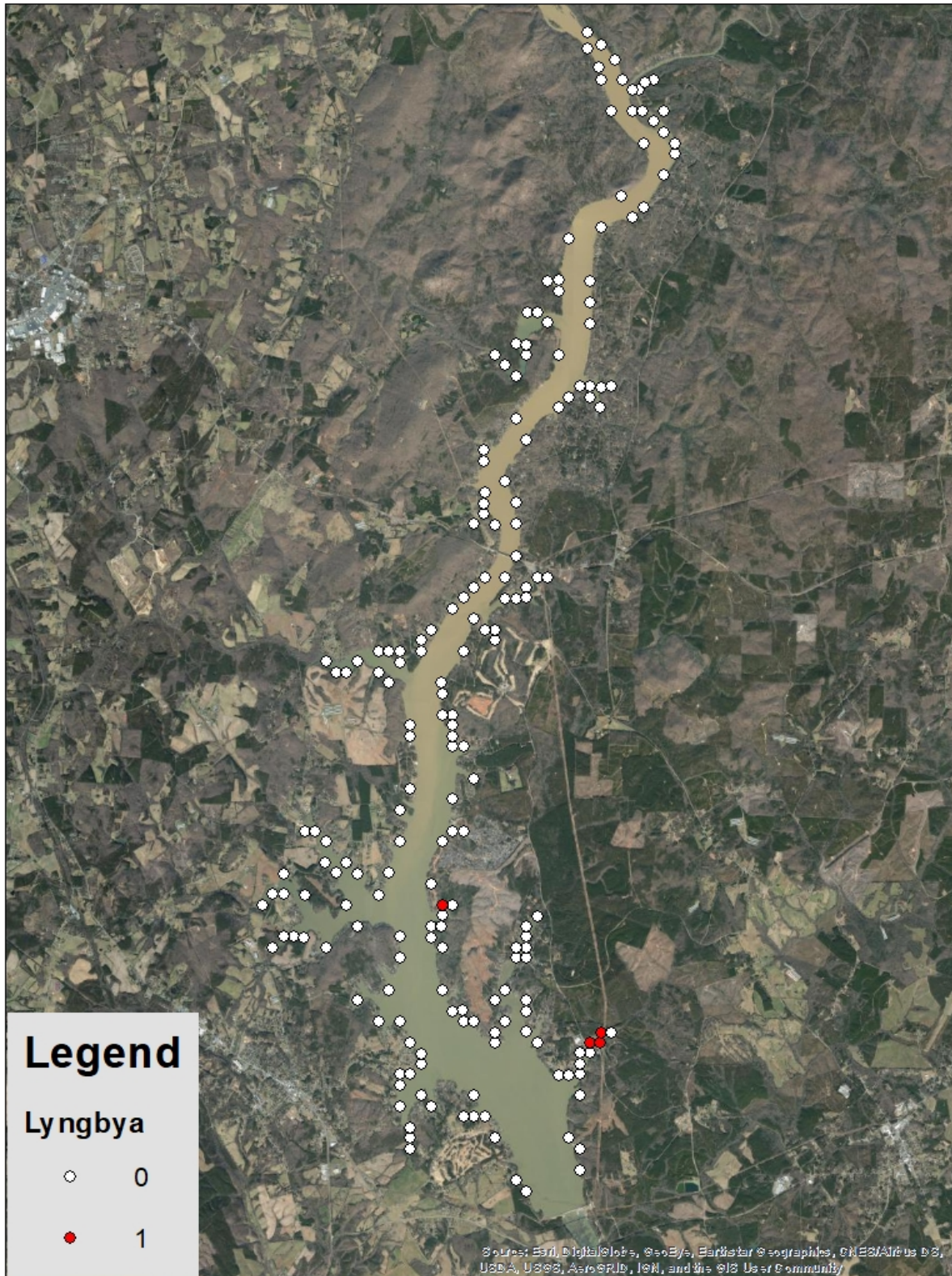


Figure 4. Map showing rake toss points presence/absence of Lyngbya.

# 2019 Lake Tillery Submerged Aquatic Vegetation Survey NC Division of Water Resources

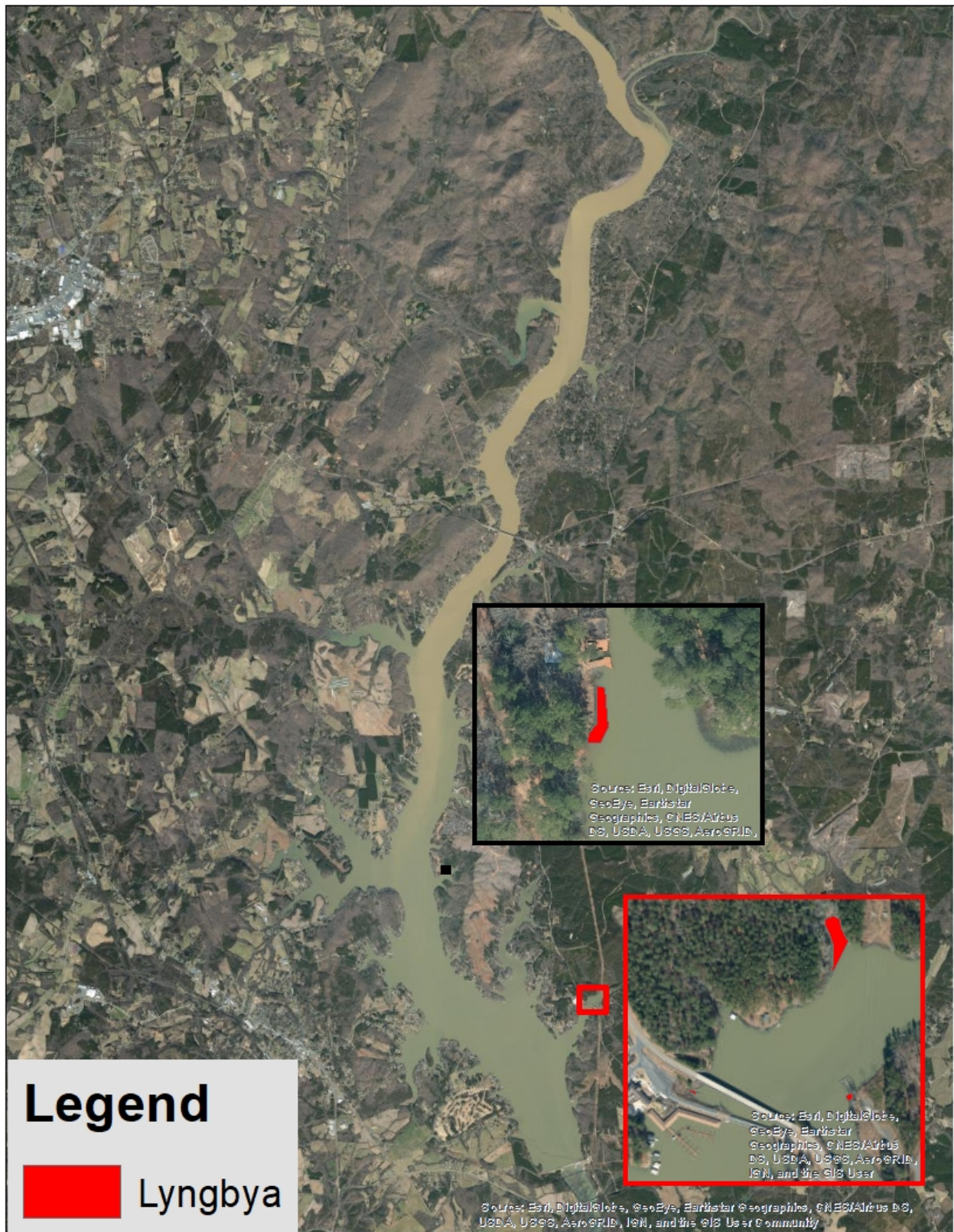


Figure 5. Map showing estimated coverage of Lyngbya (0.5 acres).