2020 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)).

Methods

The AWCP, with assistance from Duke Energy, completed a full-lake survey of Lake Tillery October 6th- October 8th and October 15th. 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 87 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 206 points were sampled. Of those 206 points, Hydrilla was found at 8, or 4%, of them (Figure 1). This was a slight increase where Hydrilla was found at 3, or 2%, of the 197 points. The total estimated coverage of Hydrilla is 4 acres (Figure 2). This is roughly the same as 2019. There was a slight decrease in the area in the backwater cove area near where the Uwharrie River runs into the reservoir and a slight increase in the cove of the Swift Island boat ramp in 2020. The only other SAV found during the survey was the aquatic moss Fontinalis, *Fontinalis spp.* It was found at 1 of the 206 sample points (Figure 3). Water Willow was observed growing along much of the shoreline. The cyanobacteria Lyngbya, *Lyngbya wollei*, was also found in the reservoir. It was found at 8, or 4%, of the sample points (Figure 4). The estimated coverage of Lyngbya is 1 acre (Figure 5).

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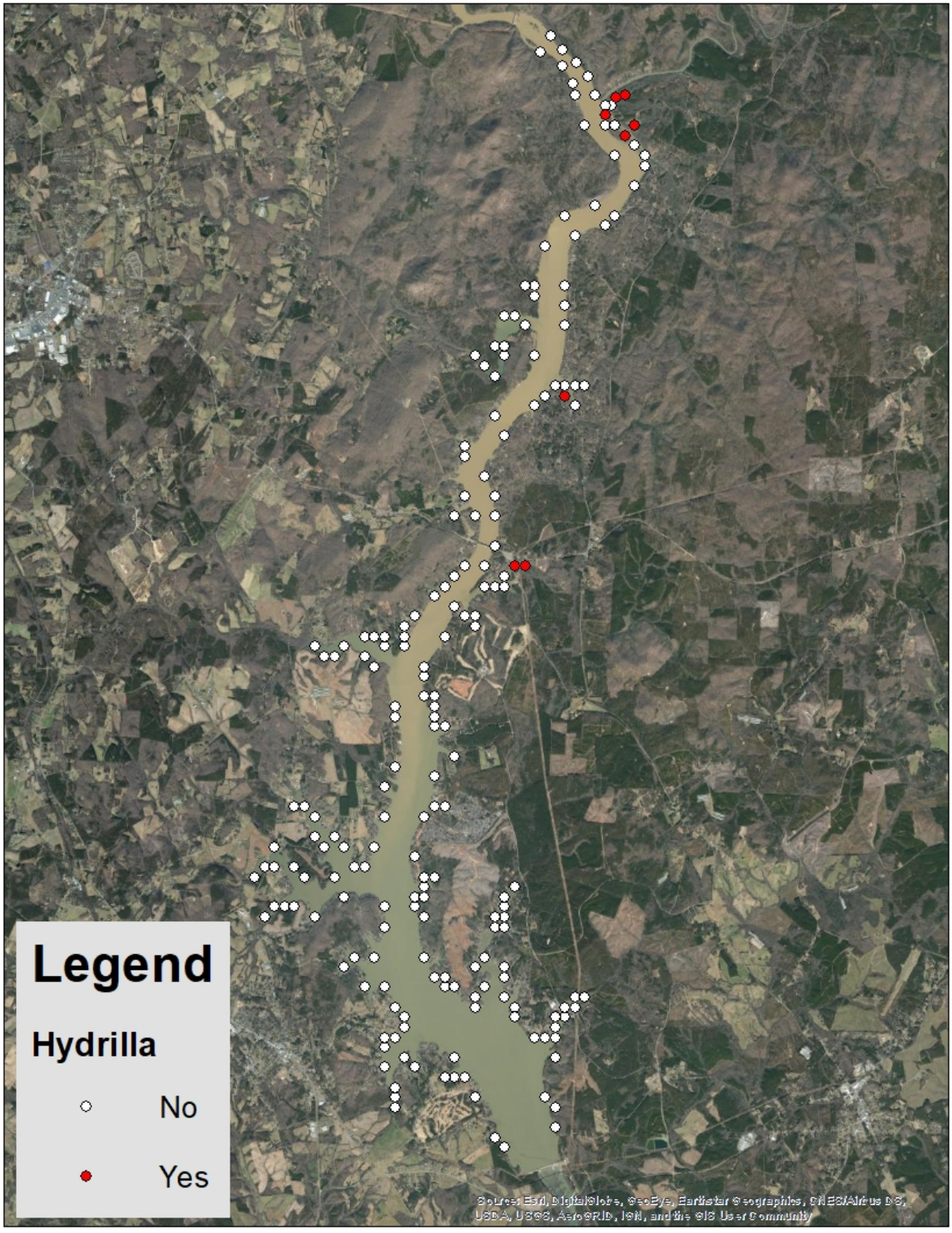

Figure 1. Map showing presence/absence of Hydrilla.

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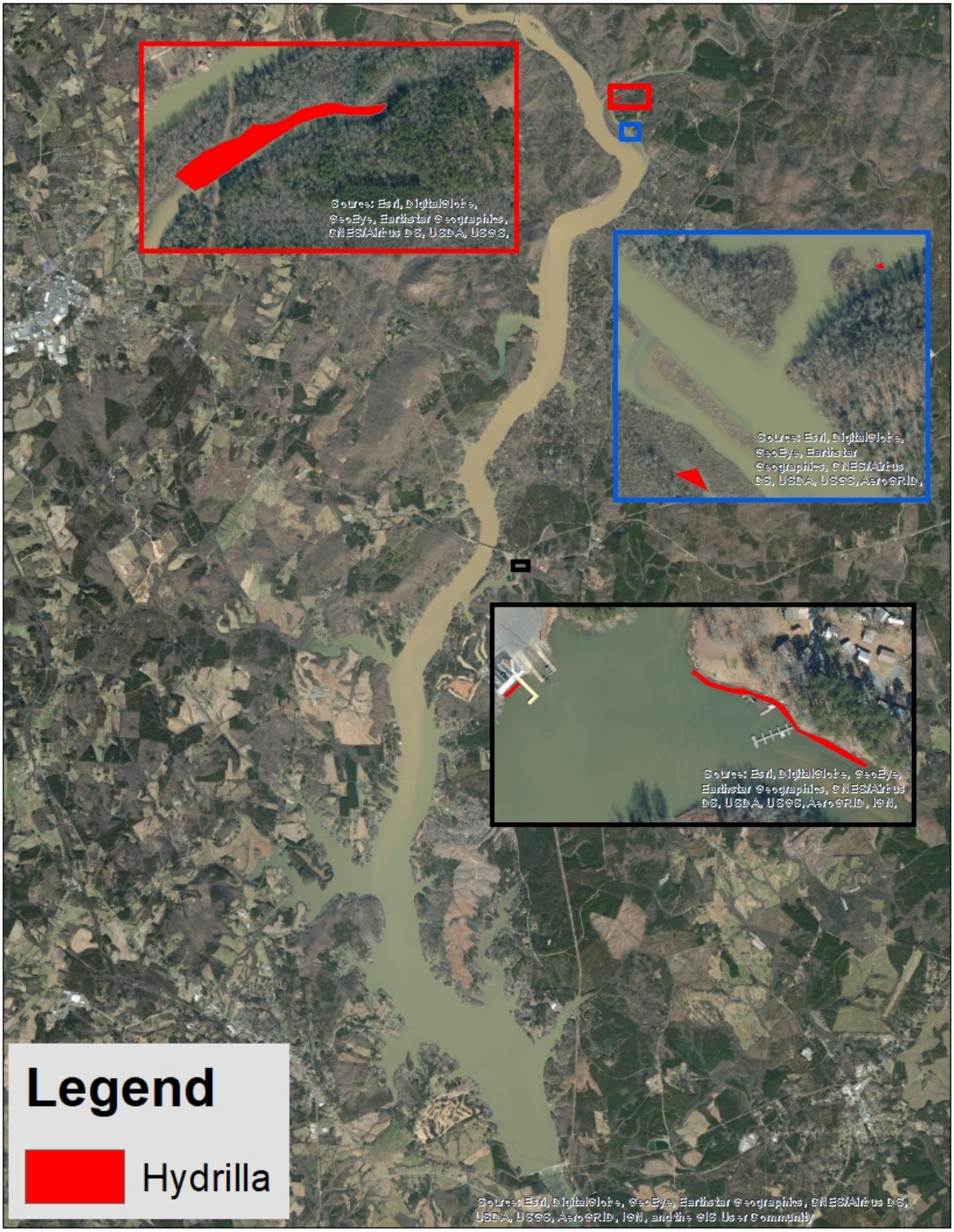

Figure 2. Map showing Hydrilla coverage (4 acres).

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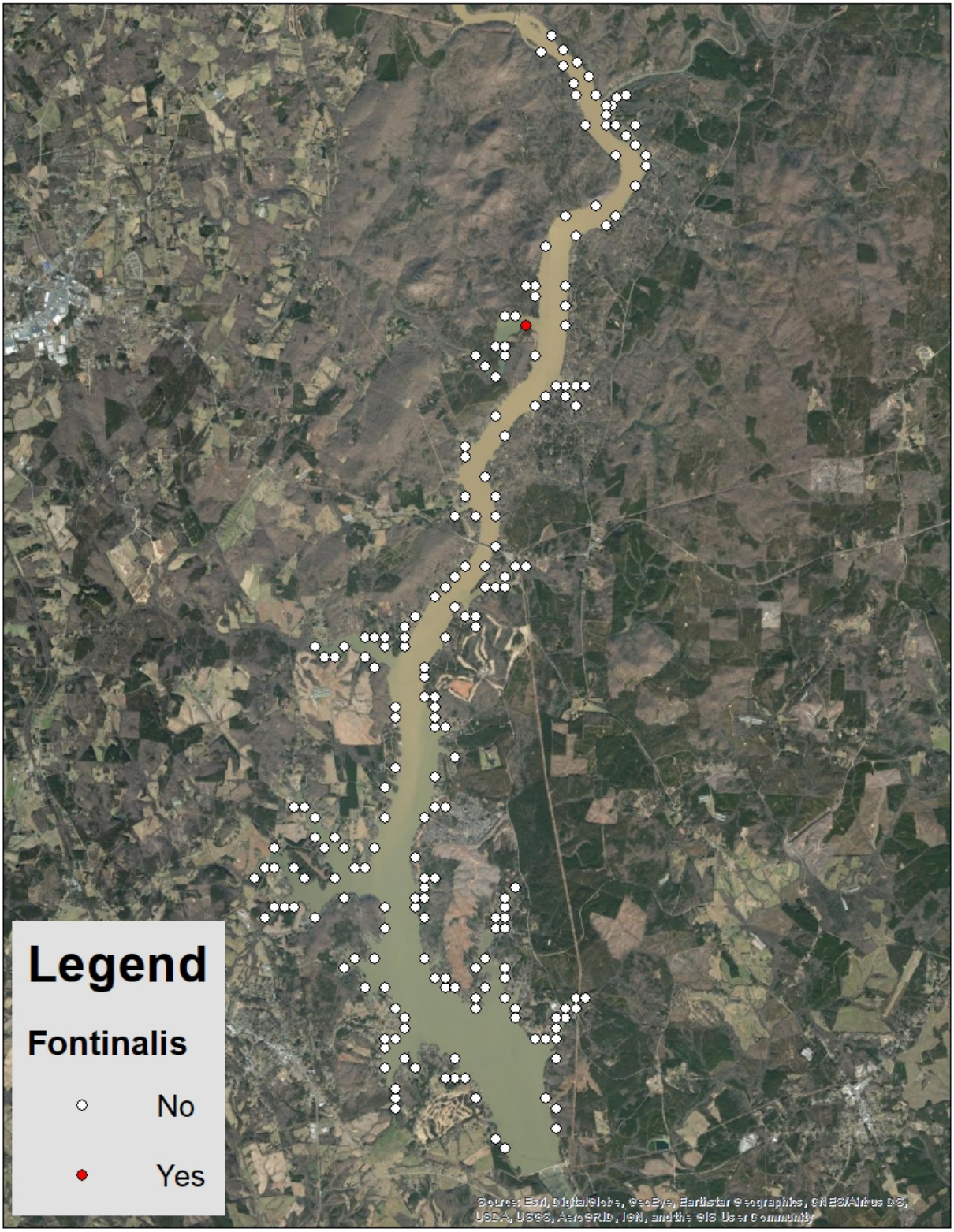

Figure 3. Map showing presence/absence of the aquatic moss, Fontinalis.

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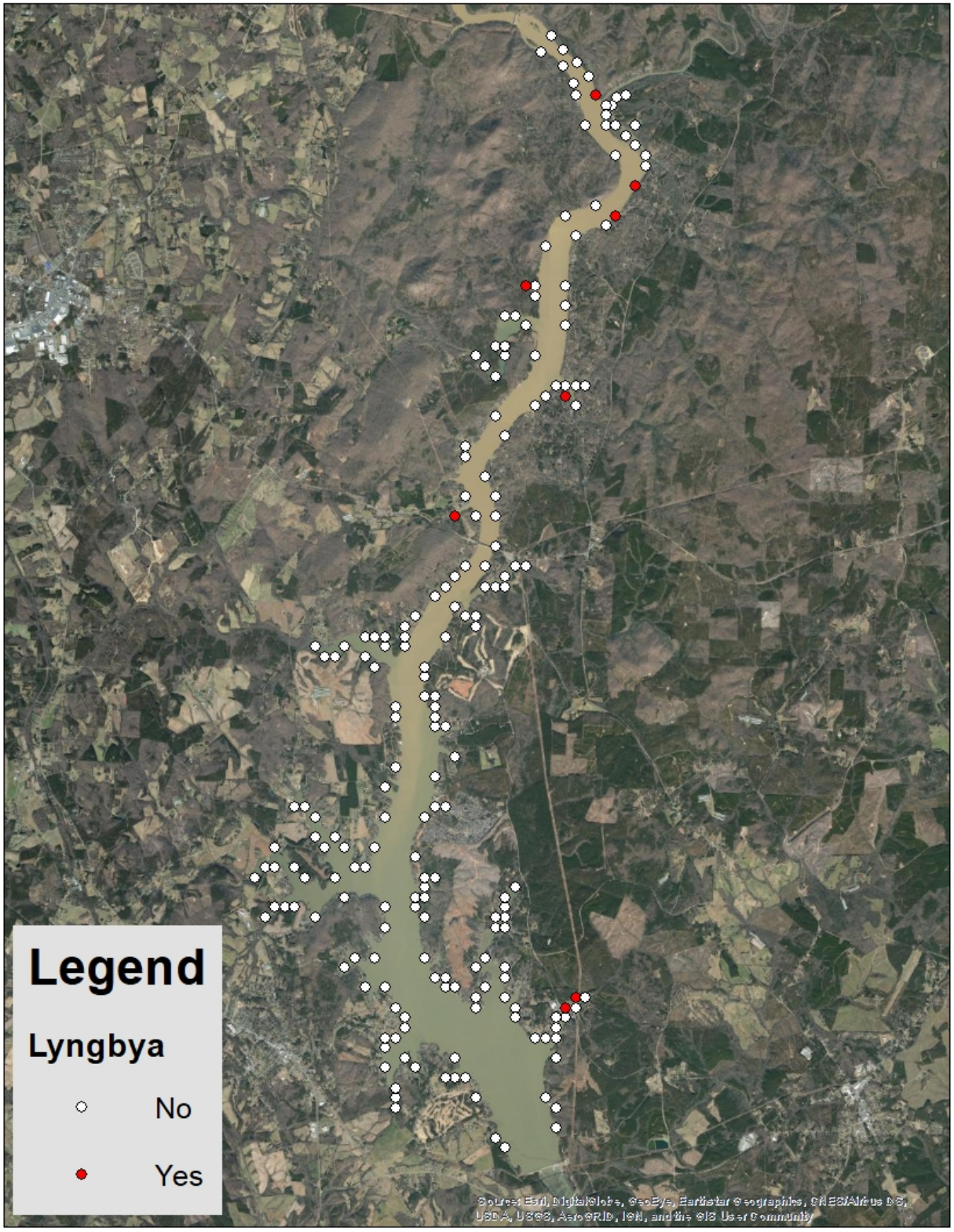

Figure 4. Map showing presence/absence of Lyngbya.

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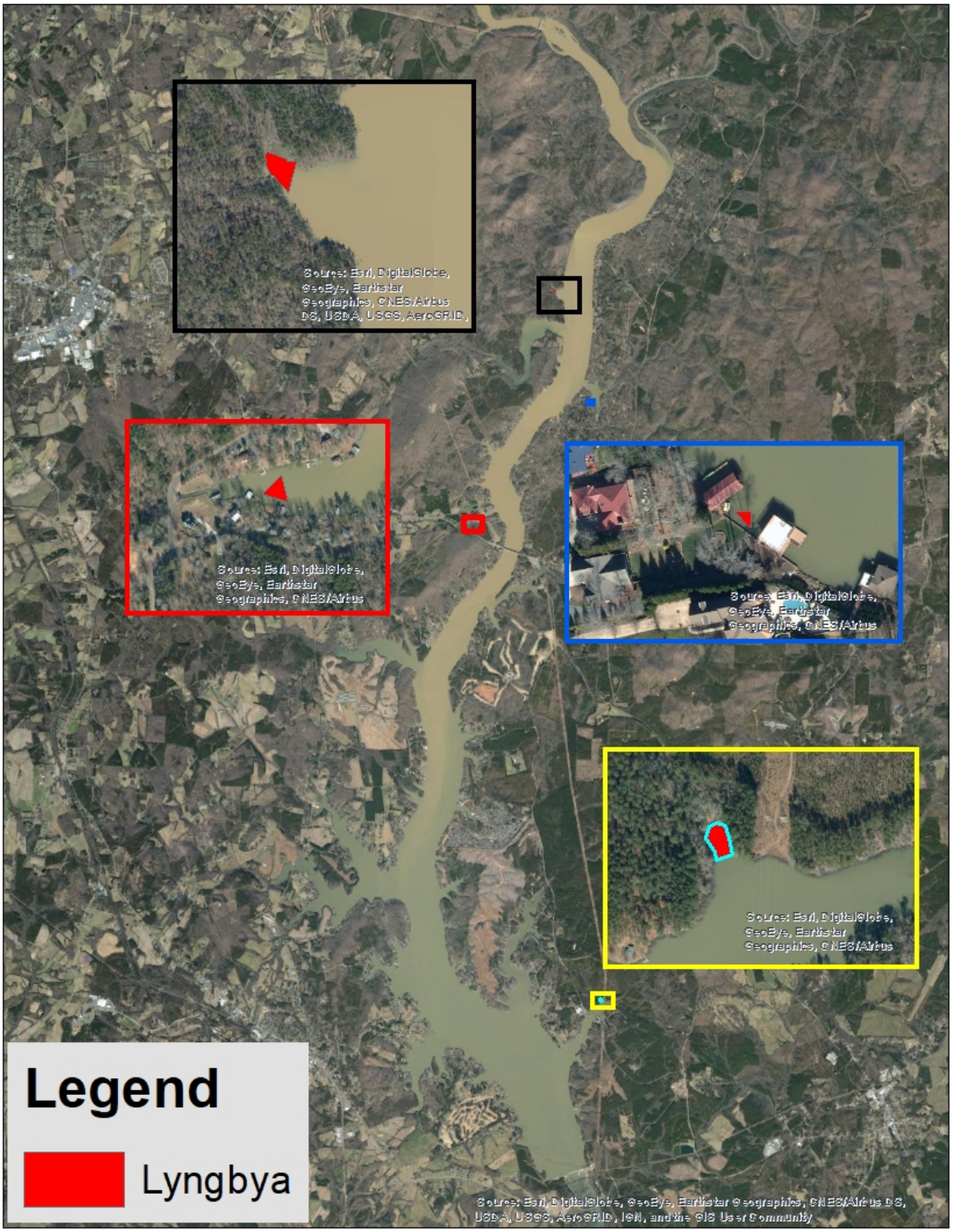

Figure 5. Map showing Lyngbya coverage (1 acre).