

DWR 2020 Survey Report – Lake Orange, SCS #1, #2 and #3

Introduction

Hydrilla, (*Hydrilla verticillata*), is one of the most destructive and ecologically damaging invasive aquatic plants in the world. It can form dense monocultures that crowd out native vegetation, reduce the habitat for aquatic organisms and severely impact recreational activities. 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 Orange in 1992. A fish barrier was installed and sterile grass carp were stocked in 1994 and 1998 to manage Hydrilla within the reservoir. Hydrilla was thought to be extirpated from the site around 2005 but a resident at the upper end of the lake reported that they were actively seeing Hydrilla growing. A whole lake survey was completed in 2014 and found approximately 2.5 acres of Hydrilla within Lake Orange. See the table below which give a brief management history at each of the water bodies (Figure 1).

Methods

The AWCP completed a full-lake survey of Lake Orange on October 28th and the associated sediment control structures on October 30th. For Lake Orange and Sediment Control Structure #1 (Compton's Pond) 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 7.5 miles of SONAR was logged at Lake Orange and 2.5 miles was logged at Compton's Pond. The SONAR data was uploaded to a third-party company, Biobase, to quantify the depth and biovolume, a percentage of the water column taken up by vegetation when vegetation exists, data. All of this was then combined with the rake-toss data using GIS software to estimate coverage. For Sediment Control Structure #2 and #3 visual surveys were conducted from the shoreline with rake tosses thrown at random locations along the shoreline.

Results

Lake Orange

A total of 55 points were sampled during the 2020 survey. There was no Hydrilla found at any of the points (Figure 2). This is a decrease from the 2019 survey which found Hydrilla at 2 points, or 4%, of the 55 points sampled. There was very little other submerged vegetation found during the survey. Southern Naiad, *Najas guadalupensis*, was found at 3, or 5%, of the points sampled (Figure 3). The macroalgae Chara, *Chara spp.*, was found at 1, or 2%, of the points sampled (Figure 4).

Sediment Control Structure #1

A total of 24 points were sampled during the 2020 survey. Hydrilla was found at 9, or 38%, of the sampled points (Figure 5). This was a decrease from the 2019 survey which identified Hydrilla growing at 15, or 63%, of the sampled points. The estimated Hydrilla coverage in 2020 is 5.5 acres (Figure 6). This was a slight increase from the 2019 survey which estimated Hydrilla coverage at 4.5 acres.

Sediment Control Structures #2 and #3

There was no Hydrilla found during the visual survey from the shoreline. There was also no other SAV found.

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Water Body	Year	# of Grass Carp Stocked	Treated acres	Hydrilla coverage (acres)
Lake Orange	2014	0	0	2.5
	2015	40	0	16
	2016	200	0	30
	2017	150	7	1
	2018	0	7	0
	2019	0	0	0.5
	2020	0	0	0
SCS # 1 (Compton's Pond)	2016	0	2	5
	2017	65	2	7
	2018	70	2	7
	2019	30	0	4.5
	2020	30	1	5.5
SCS #2	2017	0	6	0
	2018	0	6	0
	2019	0	6	0
	2020	0	0	0
SCS #3	2019	0	0	8
	2020	120	0	0

Figure 1. Table summarizing management activities for Lake Orange and the sediment control structures.

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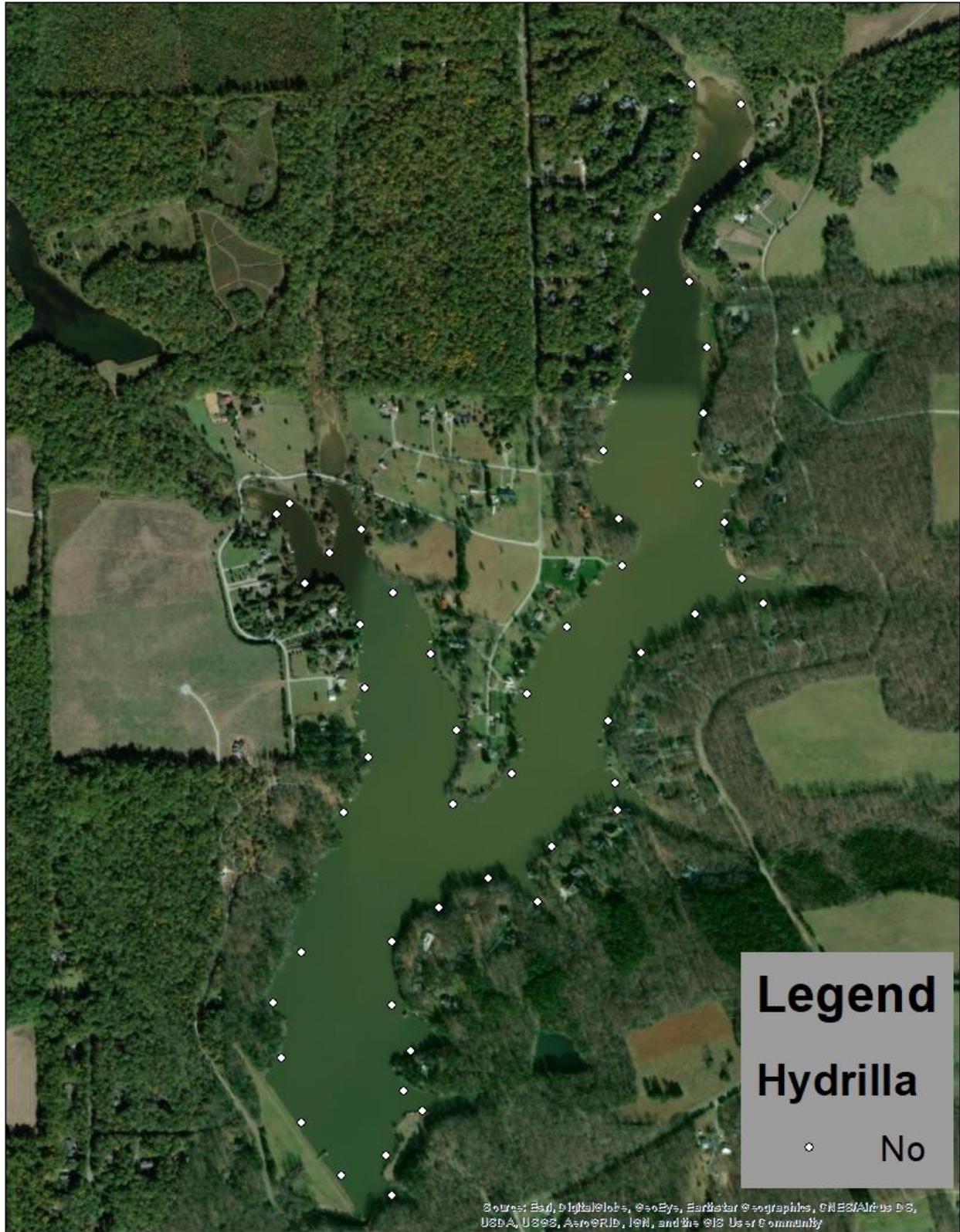


Figure 2. Map showing presence/absence of Hydrilla at Lake Orange.

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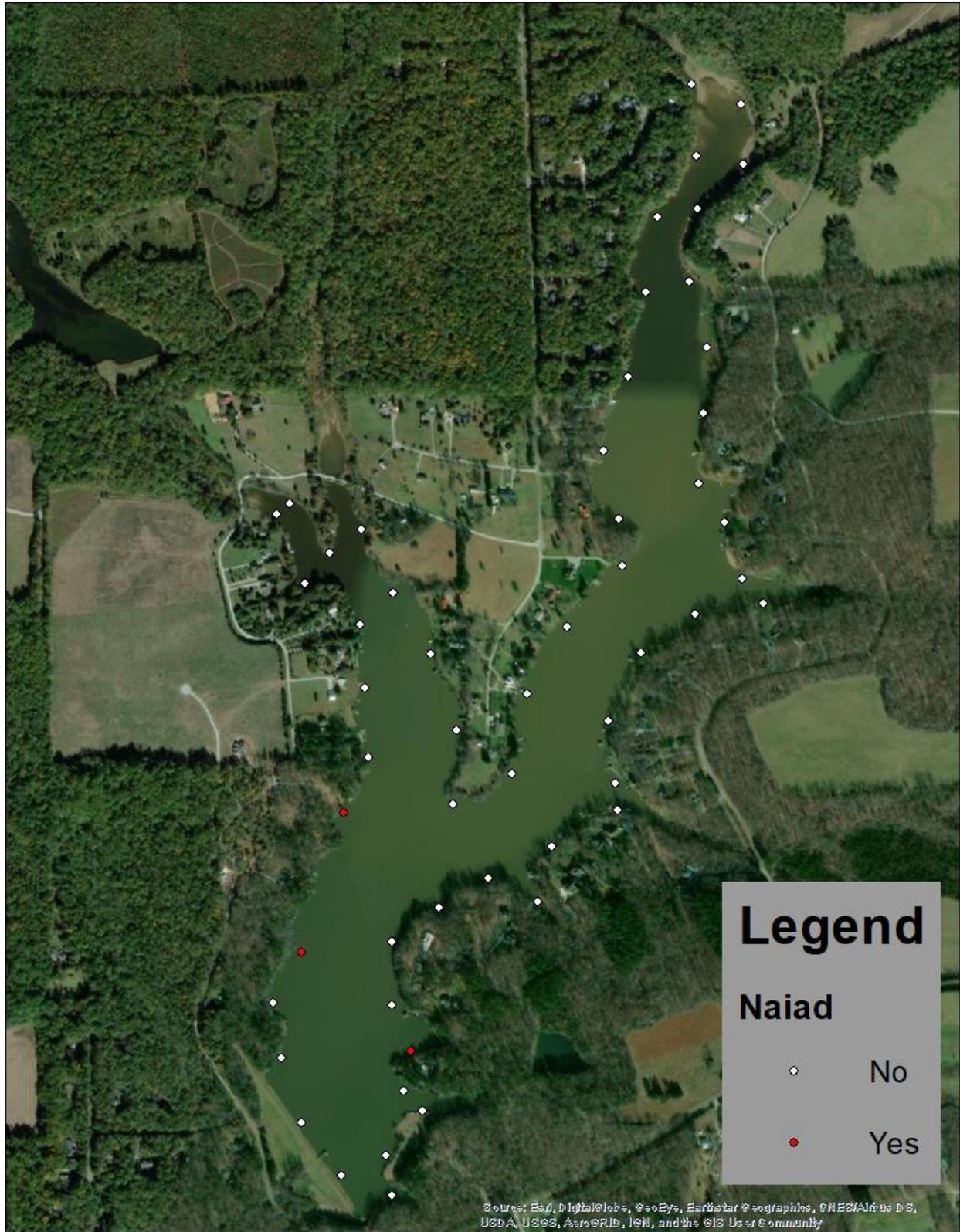


Figure 3. Map showing presence/absence of Southern Naiad at Lake Orange.

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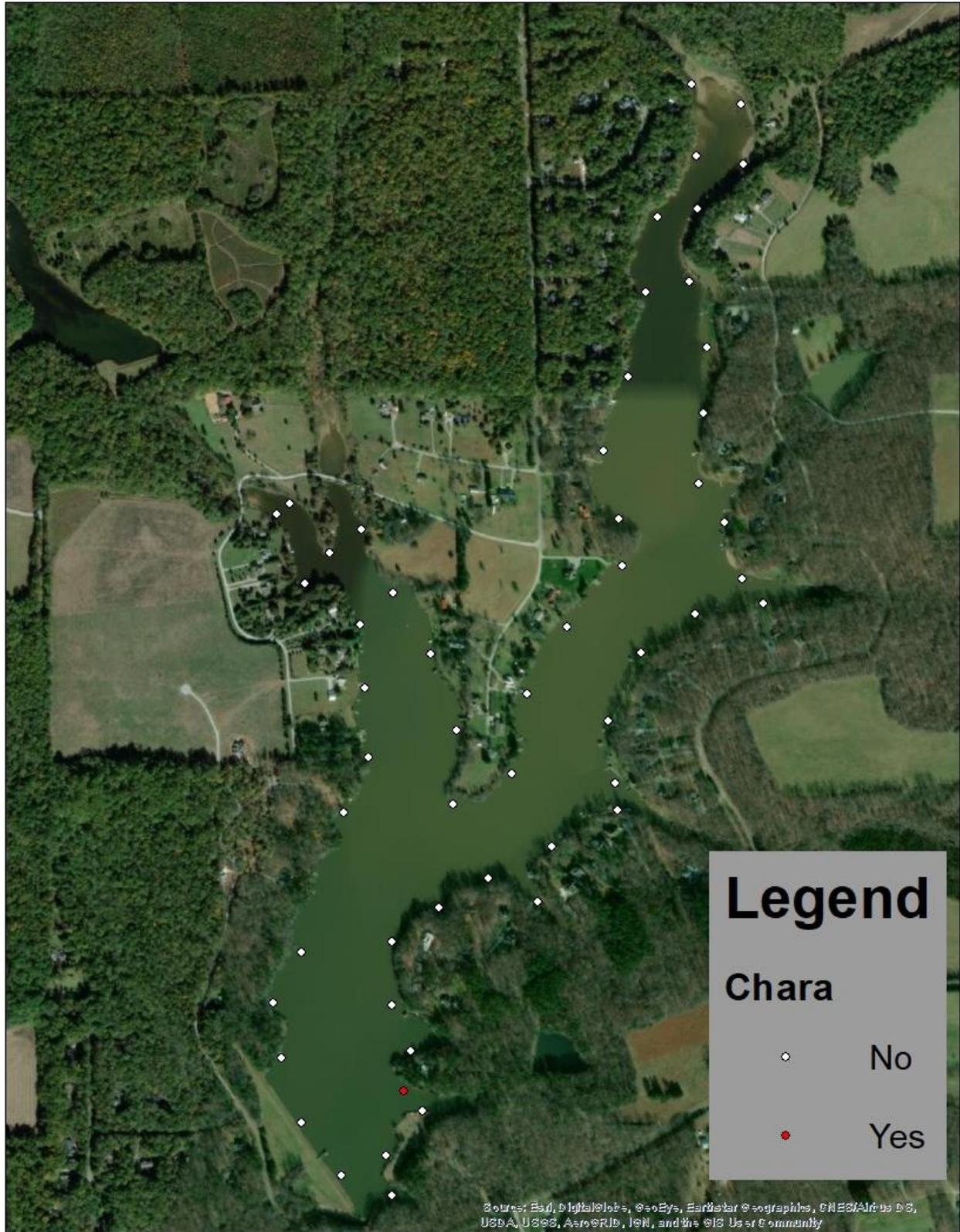


Figure 4. Map showing presence/absence of the macroalgae Chara at Lake Orange.

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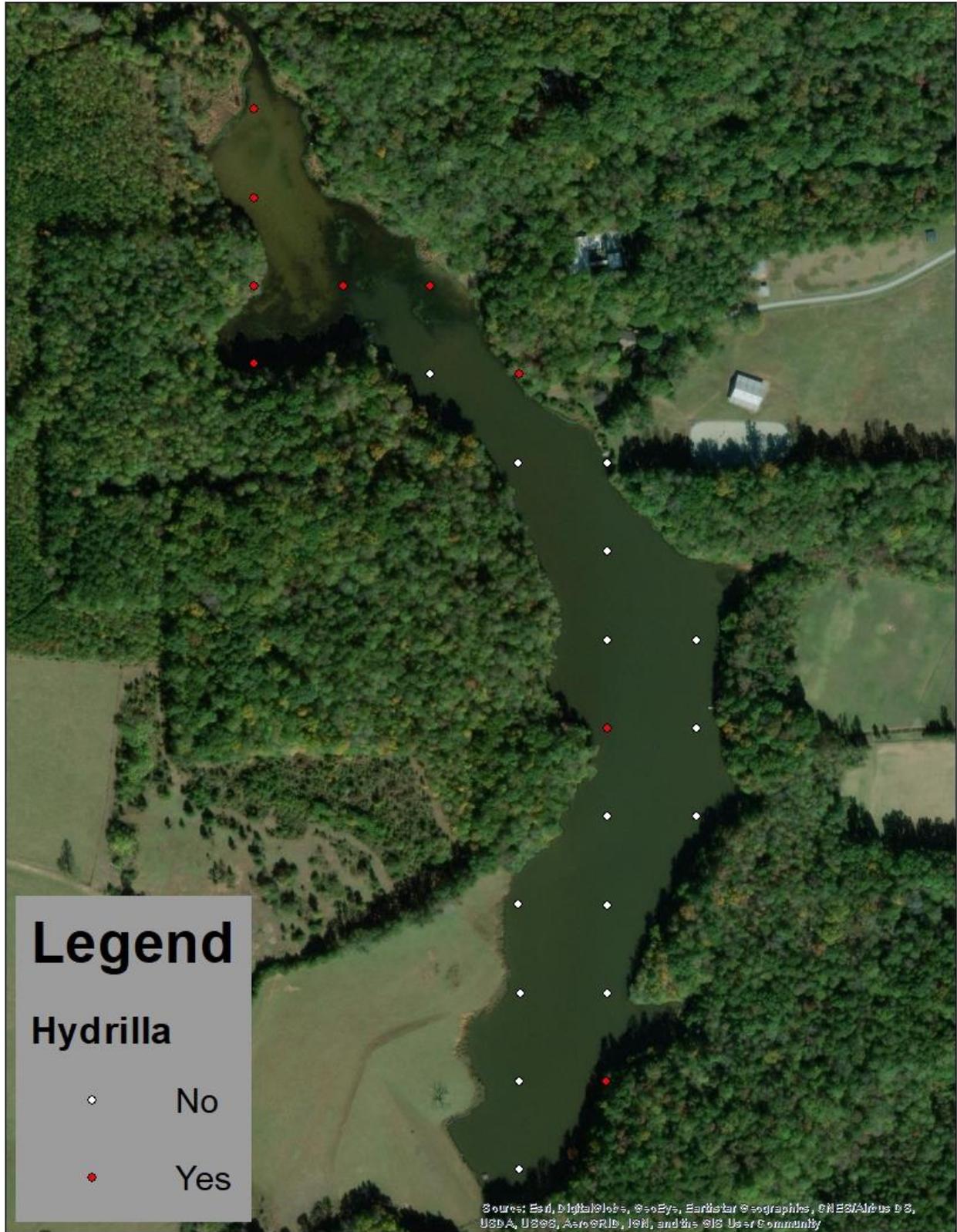


Figure 5. Map showing presence/absence of Hydrilla at Compton's Pond.

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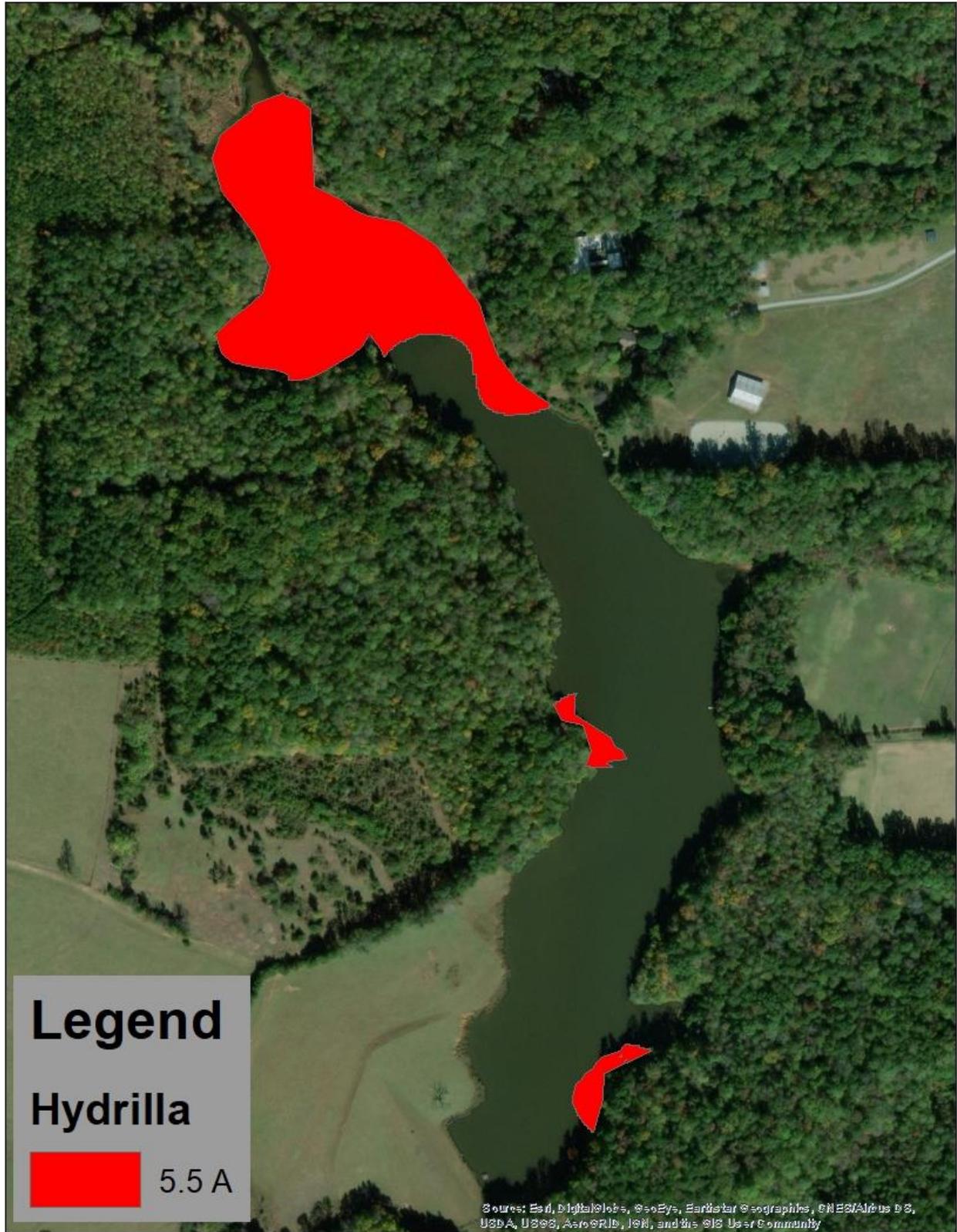


Figure 6. Map showing Hydrilla coverage at Compton's Pond.