

# 2017 Survey of Aquatic Plant Species in Mississippi Waterbodies



A report submitted to the Mississippi Aquatic Invasive Species Council

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## Executive Summary

### Conclusions

- Only four waterbodies in this survey had plant assemblages entirely composed of only native aquatic plant species.
- Of the 105 plant species observed, 15 were non-native.
- Alligatorweed (*Alternanthera philoxeroides*: 30 waterbodies) and torpedograss (*Panicum repens*: 15 waterbodies) were the most widespread non-native species in the state.
- Brittle naiad (*Najas minor*: 12 waterbodies), wild taro (*Colocasia esculenta*: 8 waterbodies), water hyacinth (*Eichornnia crassipes*: 8 waterbodies), and Cuban bulrush (*Oxycaryum cubense*: 7 waterbodies) are of concern as they have the ability to rapidly colonize any waterbody in which they are introduced.

### Recommendations

- Continue monitoring waterbodies within Mississippi for the presence of non-native aquatic plant species.
- Implement early detection, rapid response (EDRR) management options on populations of those non-native aquatic plant species known to be in Mississippi, specifically small isolated populations before they spread to other sites.
- Determine suitable goals for management of large populations of non-native aquatic plant species.
- Implement management strategies on those populations of native species that have grown to nuisance levels in Mississippi waterbodies.

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## Introduction

The state of Mississippi (MS) has significant water resources that, many times, are impaired by invasive aquatic and wetland plant species. These waterbodies can then act as source populations to introduce non-native vegetation to other waterbodies in the region. The likelihood of being a source population increases if the waterbody in question has a high frequency of boat traffic. Many times small waterbodies that have significant amounts of boat traffic are overlooked due to the size of the waterbody. Approximately 192,050 acres of MS are covered by small waterbodies (<100 acres; Willis and Neal 2012) which is greater than the five largest reservoirs (117,840 acres; Ross Barnett, Sardis, Grenada, Enid, and Arkabutla reservoirs) in the state combined (USACE 2017). The state has more small waterbodies (> 160,000) and a greater density (1 per 0.51 mi<sup>2</sup>) of small waterbodies than any other state in the MidSouth (MS, AL, AR, TN, LA, and GA) region of the United States (Willis and Neal 2012).

Many waterbodies in the state that receive the highest amount of traffic are those owned and managed by the state of MS (via the Mississippi Department of Wildlife, Fisheries, and Parks - MDWFP). Other lakes that receive a significant amount of traffic are federal lakes operated by the US Fish and Wildlife Service (USFWS), the US Forest Service (USFS), or the US Army Corps of Engineers (USACE). Aside from state and federally operated waterbodies, there are also waterbodies that are operated by private entities (e.g. Pat Harrison Waterway District) or homeowners associations within the state. Many of these waterbodies are known to have problematic vegetation while others have never been surveyed.

Two federally listed noxious weeds are found within the state: *Hydrilla verticillata* (Hydrilla or Waterthyme) and *Salvinia molesta* (giant salvinia). Additionally, there are other non-native species that are known to cause localized problems in the waterbodies they infest (i.e. *Panicum repens* – torpedo grass).

To date, no statewide survey of small and medium sized (100 – 7,500 acres) waterbodies in MS has been conducted within a single growing season. The purpose of this work was to survey small and medium sized waterbodies for the presence of invasive or problematic aquatic vegetation.

## Methodology

Water bodies were selected based on a combination of size, frequency of boat traffic, and location within the state. All waterbodies surveyed were lentic systems within the geographic boundaries of the state of Mississippi. A total of 42 waterbodies were surveyed in June-July 2017. Surveyed waterbodies were spread throughout most major geophysical regions of Mississippi. Eight surveyed waterbodies were located in northeast MS, seven in the Jackson Prairie and North Central Hills regions, five in the Delta and Loess Hills regions, and 22 in the Southern Pine Hills and Coastal Plain (Figure 1).

Most waterbodies were surveyed using a random walk (semi-quantitative) survey methodology. Survey points were taken by boat at intervals ranging from 150-500 m, depending on overall lake

shoreline length (Figure 2). In general, increased length of shoreline resulted in increased distances between sampling points. Survey points were taken in the littoral zone of each waterbody, which was determined through Secchi readings (3 times the average secchi depth). At each survey point the GPS location and water depth were recorded. Plant assemblages at each point were documented via species presence for all aquatic plants (submersed rooted, floating leaved, emergent, and free-floating submersed growth forms; Sculthorpe 1967) along with certain macrophytic algae (i.e., *Nitella* spp., *Chara* spp.). All visible plants within 3.05 m (10 ft) of any part of the boat were recorded. At each survey point, a plant rake was tossed into the water to determine the presence and identity of submersed plants. Plants that were observed but not within a sampling point were noted. Plant identification followed Godfrey and Wooten (1981) and naming is consistent with the USDA-PLANTS database (plants.usda.gov).

If *Hydrilla verticillata* (hydrilla) was found in a waterbody, additional survey efforts were initiated to document and map the extent of the infestation. Upon finding hydrilla, additional survey points were taken at 50 m (Okhissa Lake) or 250 m (Bay Springs Lake) intervals along a grid pattern until a hydrilla-free point was reached (Figure 3). Additionally, at each point where hydrilla was present, the extent of its littoral zone infestation was quantified via periodic rake throws along a line perpendicular to the shore until water depth exceeded that of the littoral zone.

Due to the wide amount of variation between lakes as well as unforeseen circumstances, some waterbodies received atypical surveys. Some waterbodies (i.e., Lake Mary, Lake Caroline) were only partially surveyed due to adverse weather conditions (Lake Mary; Figure 4) and private lake curfews (Lake Caroline). Adequacy of survey effort for differing sample sizes across waterbodies was visually assessed via species accumulation curves. Species lists for each waterbody were compiled, including total points surveyed, percent of littoral zone vegetated, points present and percent frequency per species and the native/non-native status of each species.

## **Results and Discussion**

### **Lakes with Federally listed noxious weeds**

#### **Bluff Lake (USFWS):**

Bluff Lake (33.28021N, -88.78820W) was surveyed on 13 June 2017. Littoral zone depth was measured at 7' (2.13 m), in the 30<sup>th</sup> percentile of all waterbodies surveyed (Table 1). Overall 23 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 7.1 ha of surface area and one (1) point per 337.9 m of shoreline. Out of the 23 points surveyed 22, or 95.6% were vegetated. The top three (3) most common species by presence were 1) *Nelumbo lutea* (present in 82.6% of points) 2) *Zizaniopsis miliacea* (present in 43.4% of points) and 3) *Hydrilla verticillata* (present in 30.4% of points). Non-native species (3 species) accounted for 18.8% of the 16 species observed. Of the species observed, the only federal noxious species found in Bluff Lake was *Hydrilla verticillata*. Of the 42 waterbodies surveyed, Bluff Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 21<sup>st</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 27<sup>th</sup> out of the 42 waterbodies surveyed.

### Lake Loakfoma (USFWS):

Lake Loakfoma (33.26631N, -88.78221W) was surveyed on 13 June 2017. Littoral zone depth was measured at 9' (15 m), in the 30<sup>th</sup> percentile of all waterbodies surveyed (Table 2). Overall 15 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 7.4 ha of surface area and one (1) point per 672 m of shoreline. Out of the 15 points surveyed 13, or 86.6% were vegetated. The top three (3) most common species by presence were 1) *Nelumbo lutea* (present in 80% of points) 2) *Brasenia schreberi* (present in 53.3% of points) and 3) *Ludwigia peploides* and *Nymphaea odorata* (present in 20% of points each). Non-native species (3 species) accounted for 16.7% of the 18 species observed. *Hydrilla verticillata*, a federal noxious weed, was observed in Lake Loakfoma. Of the 42 waterbodies surveyed, Lake Loakfoma was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 19<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 28<sup>th</sup> out of the 42 waterbodies surveyed.

### Okhissa Lake (USFS):

Okhissa Lake (31.42977N, -90.84557W) was surveyed on 6 July 2017. Littoral zone depth was measured at 25' 10.5" (7.87 m), in the 90<sup>th</sup> percentile of all waterbodies surveyed (Table 3). Overall 293 points were taken; with a between-point distance of 350 m. Sampling effort was one (1) point per 1.4 ha of surface area and one (1) point per 190.7 m of shoreline. Out of the 293 points surveyed 284, or 96.9% were vegetated. The top three (3) most common species by presence were 1) *Hydrilla verticillata* (present in 74.7% of points) 2) *Brasenia schreberi* (present in 18.4% of points) and 3) *Ceratophyllum demersum* (present in 5.4% of points). Non-native species (3 species) accounted for 12.5% of the 24 species observed. Of note, *Hydrilla verticillata*, a federal noxious weed, has infested this waterbody. Of the 42 waterbodies surveyed, Okhissa Lake was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 38<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage on Okhissa was the lowest in terms of evenness of all waterbodies surveyed.

### Bay Springs Reservoir (USACE):

Bay Springs Reservoir (34.54221N, -88.31353W) was surveyed on 28 July 2017. Littoral zone depth was measured at 20' 10.5" (6.13 m), in the 90<sup>th</sup> percentile of all waterbodies surveyed (Table 4). Overall 465 points were taken; with a between-point distance of 500 m. Sampling effort was one (1) point per 5.7 ha of surface area and one (1) point per 356.9 m of shoreline. Out of the 465 points surveyed 365, or 78.5% were vegetated. The top three (3) most common species by presence were 1) *Hydrilla verticillata* (present in 33.3% of points) 2) *Potamogeton nodosus* (present in 20% of points) and 3) *Nitella spp.* (present in 18.9% of points). Non-native species (2 species) accounted for 7.1% of the 28 species observed. *Hydrilla verticillata*, a federal noxious weed, was observed in Bay Springs Reservoir. Of the 42 waterbodies surveyed, Bay Springs Reservoir was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 14<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 34<sup>th</sup> out of the 42 waterbodies surveyed.

### Columbus Lake (USACE):

Columbus Lake (33.52474N, -88.47202W) was surveyed on 14 June 2017. Littoral zone depth was measured at 5' (1.52 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 5). Overall 38 points were taken; with a between-point distance of 500 m. Sampling effort was one (1) point per 37.5 ha of surface area and one (1) point per 2640 m of shoreline. Out of the 38 points surveyed 34, or 89.5% were vegetated. The top three (3) most common species by presence were 1) *Eichhornia crassipes* (present in 68.4% of points) 2) *Alternanthera philoxeroides* (present in 52.6% of points) and 3) *Lemna spp.* (present in 31.6% of points). Non-native species (7 species) accounted for 23% of the 30 species observed. *Hydrilla verticillata*, a federal noxious weed, was observed in Columbus Lake. Of the 42 waterbodies surveyed, Columbus Lake was the highest of all lakes surveyed in terms of plant diversity (Shannon-Weaver H Index). The plant assemblage was about average in terms of evenness, with an evenness ranking of 22<sup>nd</sup> out of the 42 waterbodies surveyed.

### **Lakes without Federally listed noxious weeds**

#### **Lake Lowndes (MDWFP):**

Lake Lowndes (33.42333N, -88.29988W) was surveyed on 14 June 2017. Littoral zone depth was measured at 8'6" (2.6 m), in the 40<sup>th</sup> percentile of all waterbodies surveyed (Table 6). Overall 32 points were taken with a between-point distance of 150 m. Sampling effort was one (1) point per 1.8 ha of surface area and one (1) point per 200.2 m of shoreline. Out of the 32 points surveyed 26, or 81.3%, were vegetated. The top three (3) most common species by presence were 1) *Chara spp.* (present in 68.7% of points) 2) *Ludwigia peploides* (present in 18.7% of points) and 3) *Bacopa spp.* (present in 15.6% of points). Non-native species (2 species) accounted for 7.7% of the 26 species observed. No species occurring on the federal noxious weed list were observed in Lake Lowndes. Of the 42 waterbodies surveyed, Lake Lowndes was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 10<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 32<sup>nd</sup> out of the 42 waterbodies surveyed.

#### **Lake Hideaway (Private):**

Lake Hideaway (30.56191N, -89.65180W) was surveyed on 21 June 2017. Littoral zone depth was measured at 10' (3.0 m), in the 60<sup>th</sup> percentile of all waterbodies surveyed (Table 7). Overall 35 points were taken with a between-point distance of 250 m. Sampling effort was one (1) point per 2.2 ha of surface area and one (1) point per 319.5 m of shoreline. Out of the 35 points surveyed 26, or 74.2% were vegetated. The top three (3) most common species by presence were 1) *Eleocharis vivipara* (present in 68.5% of points) 2) *Ceratophyllum demersum* (present in 14.2% of points) and 3) *Nuphar lutea* and *Utricularia spp.* (present in 5.7% of points). No non-native species were present in the five species observed. No species occurring on the federal noxious weed list were observed in Lake Hideaway. Of the 42 waterbodies surveyed, Lake Hideaway was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 42<sup>nd</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 38<sup>th</sup> out of the 42 waterbodies surveyed.

### Lake Bill Waller (MDWFP):

Lake Bill Waller (31.19973, -89.71431W) was surveyed on 19 June 2017. Littoral zone depth was measured at 9' (2.74 m), in the 50<sup>th</sup> percentile of all waterbodies surveyed (Table 8). Overall 37 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.8 ha of surface area and one (1) point per 241.7 m of shoreline. Out of the 37 points surveyed 35, or 94.5% were vegetated. The top three (3) most common species by presence were 1) *Brasenia schreberi* (present in 83.7% of points) 2) *Nymphaea odorata* (present in 54.0% of points) and 3) *Panicum repens* (present in 29.7% of points). Non-native species (3 species) accounted for 27.3% of the 11 species observed. No species occurring on the federal noxious weed list were observed in Lake Bill Waller. Of the 42 waterbodies surveyed, Lake Bill Waller was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 32<sup>nd</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 33<sup>nd</sup> out of the 42 waterbodies surveyed.

### Lake Columbia (MDWFP):

Lake Columbia (31.18202N, -89.73340 W) was surveyed on 19 June 2017. Littoral zone depth was measured at 3'7" (1.09 m), in the 70<sup>th</sup> percentile of all waterbodies surveyed (Table 9). Overall 29 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.3 ha of surface area and one (1) point per 199.0 m of shoreline. Out of the 29 points surveyed 27, or 93.1% were vegetated. The top three (3) most common species by presence were 1) *Brasenia schreberi* (present in 89.7% of points) 2) *Nymphaea odorata* (present in 58.6% of points) and 3) *Utricularia spp.* (present in 48.2% of points). Non-native species (1 species) accounted for 10% of the 10 species observed. No species occurring on the federal noxious weed list were observed in Lake Columbia. Of the 42 waterbodies surveyed, Lake Columbia was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 26<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 24<sup>th</sup> out of the 42 waterbodies surveyed.

### Geiger Lake (MDWFP):

Geiger Lake (31.13876N, -89.23845W) was surveyed on 20 June 2017. Littoral zone depth was measured at 9'3" (2.82 m), in the 60<sup>th</sup> percentile of all waterbodies surveyed (Table 10). Overall 49 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 2.2 ha of surface area and one (1) point per 210.5 m of shoreline. Out of the 49 points surveyed 39, or 79.5% were vegetated. The top three (3) most common species by presence were 1) *Stuckenia pectinata* (present in 66.6% of points) 2) *Nymphaea odorata* (present in 53.8% of points) and 3) *Utricularia spp.* (present in 28.2% of points). No non-native species were observed in the 12 total species found at Geiger Lake. No species occurring on the federal noxious weed list were observed in Geiger Lake. Of the 42 waterbodies surveyed, Geiger Lake was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 28<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 31<sup>st</sup> out of the 42 waterbodies surveyed.

#### Lake Perry (MDWFP):

Lake Perry (31.13402N, -88.89932W) was surveyed on 20 June 2017. Littoral zone depth was measured at 8' (2.43 m), in the 40<sup>th</sup> percentile of all waterbodies surveyed (Table 11). Overall 19 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.6 ha of surface area and one (1) point per 263.4 m of shoreline. Out of the 19 points surveyed 15, or 78.9% were vegetated. The top three (3) most common species by presence were 1) *Brasenia schreberi* (present in 57.8% of points) 2) *Nymphaea odorata* (present in 31.5% of points) and 3) *Polygonum spp.* and *Stuckenia pectinata* (present in 15.7 % of points). Non-native species (2 species) accounted for 22.2% of the 9 total species observed. No species occurring on the federal noxious weed list were observed in Lake Perry. Of the 42 waterbodies surveyed, Lake Perry was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 29<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 21<sup>st</sup> out of the 42 waterbodies surveyed.

#### Flint Creek Reservoir (PHW):

Flint Creek Reservoir (30.87168N, -89.12827W) was surveyed on 20 June 2017. Littoral zone depth was measured at 10' 10" (3.30 m), in the 60<sup>th</sup> percentile of all waterbodies surveyed (Table 12). Overall 129 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.7 ha of surface area and one (1) point per 184.9 m of shoreline. Out of the 129 points surveyed 116, or 89.8% were vegetated. The top three (3) most common species by presence were 1) *Utricularia spp.* (present in 42.6% of points) 2) *Bacopa caroliniana* (present in 41.8% of points) and 3) *Stuckenia pectinata* (present in 37.2% of points). Non-native species (1 species) accounted for 10% of the 10 species observed. No species occurring on the federal noxious weed list were observed in Flint Creek Reservoir. Of the 42 waterbodies surveyed, Flint Creek Reservoir was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 33<sup>rd</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 29<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Mike Connor (MDWFP):

Lake Mike Connor (31.57597N, -89.6487W) was surveyed on 22 June 2017. Littoral zone depth was measured at 15' 9" (4.8 m), in the 90<sup>th</sup> percentile of all waterbodies surveyed (Table 13). Overall 21 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.6 ha of surface area and one (1) point per 226.4 m of shoreline. Out of the 21 points surveyed 19, or 90.4% were vegetated. The top three (3) most common species by presence were 1) *Najas guadalupensis* (present in 90.4% of points) 2) *Potamogeton diversifolius* (present in 47.6% of points) and 3) *Panicum repens* (present in 19% of points). Non-native species (2 species) accounted for 18.2% of the 11 species observed. No species occurring on the federal noxious weed list were observed in Lake Mike Connor. Of the 42 waterbodies surveyed, Lake Mike Connor was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 34<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 35<sup>th</sup> out of the 42 waterbodies surveyed.

#### Dry Creek Reservoir (PHW):

Dry Creek Reservoir (31.74888N, -89.72933W) was surveyed on 22 June 2017. Littoral zone depth was measured at 10'3" (3.12 m), in the 70<sup>th</sup> percentile of all waterbodies surveyed (Table 14). Overall 15 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 0.89 ha of surface area and one (1) point per 176.7 m of shoreline. Out of the 15 points surveyed 14, or 93.3% were vegetated. The top three (3) most common species by presence were 1) *Stuckenia pectinata* (present in 80% of points) 2) *Cephalanthus occidentalis* (present in 66.7% of points) and 3) *Alternanthera philoxeroides* (present in 13.3% of points). Non-native species (1 species) accounted for 11% of the nine species observed. No species occurring on the federal noxious weed list were observed in Dry Creek. Of the 42 waterbodies surveyed, Dry Creek Reservoir was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 35<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 30<sup>th</sup> out of the 42 waterbodies surveyed.

#### Prentiss Walker Lake (MDWFP):

Prentiss Walker Lake (31.82924N, -89.59992W) was surveyed on 22 June 2017. Littoral zone depth was measured at 6'1" (1.85 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 15). Overall 25 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.3 ha of surface area and one (1) point per 205.4 m of shoreline. Out of the 25 points surveyed 16, or 64% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 36% of points) 2) *Hydrocotyle umbellata* (present in 20% of points) and 3) *Juncus repens* and *Nyssa aquatica* (present in 16% of points). Non-native species (1 species) accounted for 6.7% of the 15 species observed. No species occurring on the federal noxious weed list were observed in Prentiss Walker Lake. Of the 42 waterbodies surveyed, Prentiss Walker Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 7<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was quite evenly distributed, with an evenness ranking of 3<sup>rd</sup> out of the 42 waterbodies surveyed.

#### Turkey Fork Reservoir (PHW):

Turkey Fork Reservoir (31.33844N, -88.69743W) was surveyed on 23 June 2017. Littoral zone depth was measured at 7' (2.13 m), in the 30<sup>th</sup> percentile of all waterbodies surveyed (Table 16). Overall 41 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 2.5 ha of surface area and one (1) point per 239.9 m of shoreline. Out of the 41 points surveyed 29, or 70.7% were vegetated. The top three (3) most common species by presence were 1) *Nymphaea odorata* (present in 26.8% of points) 2) *Utricularia spp.* (present in 24.3% of points) and 3) *Panicum repens* (present in 21.9% of points). Non-native species (3 species) accounted for 18.8% of the 16 species observed. No species occurring on the federal noxious weed list were observed in Turkey Fork Reservoir. Of the 42 waterbodies surveyed, Turkey Fork Reservoir was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 15<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 15<sup>th</sup> out of the 42 waterbodies surveyed.

#### Maynor Creek Waterpark (PHW):

Maynor Creek (31.64981N, -88.71278W) was surveyed on 26 June 2017. Littoral zone depth was measured at 10'9" (3.28 m), in the 70<sup>th</sup> percentile of all waterbodies surveyed (Table 17). Overall 41 points were taken; with a between-point distance of 250 m. Sampling effort was one (1) point per 4.4 ha of surface area and one (1) point per 390.7 m of shoreline. Out of the 41 points surveyed 38, or 92.8% were vegetated. The top three (3) most common species by presence were 1) *Potamogeton foliosus* (present in 48.9% of points) 2) *Utricularia spp.* (present in 43.9% of points) and 3) *Panicum repens* (present in 41.4% of points). Non-native species (3 species) accounted for 16.7% of the 18 species observed. No species occurring on the federal noxious weed list were observed in Maynor Creek. Of the 42 waterbodies surveyed, Maynor Creek was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 4<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 5<sup>th</sup> out of the 42 waterbodies surveyed.

#### Bogue Homa Lake (MDWFP):

Bogue Homa Lake (31.70269N, -89.02202W) was surveyed on 26 June 2017. Littoral zone depth was measured at 5'6" (1.68 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 18). Overall 29 points were taken; with a between-point distance of 300 m. Sampling effort was one (1) point per 12.2 ha of surface area and one (1) point per 467.3 m of shoreline. Out of the 29 points surveyed 27, or 93.1% were vegetated. The top three (3) most common species by presence were 1) *Eichhornia crassipes* (present in 82.7% of points) 2) *Lemna minor* (present in 37.9% of points) and 3) *Oxycaryum cubense* (present in 34.4% of points). Non-native species (4 species) accounted for 21% of the 19 species observed. No species occurring on the federal noxious weed list were observed in Bogue Homa Lake. Of the 42 waterbodies surveyed, Bogue Homa Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 9<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 25<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Claude Bennett (MDWFP):

Lake Claude Bennett (32.10405N, -89.03213W) was surveyed on 27 June 2017. Littoral zone depth was measured at 8'9" (2.67 m), in the 50<sup>th</sup> percentile of all waterbodies surveyed (Table 19). Overall 20 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.5 ha of surface area and one (1) point per 203.4 m of shoreline. Out of the 20 points surveyed 14, or 70% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 60% of points) 2) *Sagittaria graminea* (present in 35% of points) and 3) *Ludwigia peploides* (present in 30% of points). Non-native species (2 species) accounted for 11.7% of the 17 species observed. No species occurring on the federal noxious weed list were observed in Lake Claude. Of the 42 waterbodies surveyed, Lake Claude Bennett was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 8<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 11<sup>th</sup> out of the 42 waterbodies surveyed.

#### Archusa Creek Reservoir (PHW):

Archusa Creek Reservoir (32.03742N, -88.70548W) was surveyed on 27 June 2017. Littoral zone depth was measured at 6'6" (1.98 m), in the 20<sup>th</sup> percentile of all waterbodies surveyed (Table 20). Overall 35 points were taken; with a between-point distance of 250 m. Sampling effort was one (1) point per 5.3 ha of surface area and one (1) point per 560.7 m of shoreline. Out of the 35 points surveyed 33, or 94.2% were vegetated. The top three (3) most common species by presence were 1) *Nitella spp.* (present in 45.7% of points) 2) *Chara spp.* (present in 42.8% of points) and 3) *Utricularia spp.* (present in 37.1% of points). Non-native species (3 species) accounted for 18.8% of the 16 species observed. No species occurring on the federal noxious weed list were observed in Archusa Creek Reservoir. Of the 42 waterbodies surveyed, Archusa Creek was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 18<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 26<sup>th</sup> out of the 42 waterbodies surveyed.

#### Clarkco Lake (MDWFP):

Clarkco Lake (32.10070N, -88.69805W) was surveyed on 27 June 2017. Littoral zone depth was measured at 9'5" (2.87 m), in the 60<sup>th</sup> percentile of all waterbodies surveyed (Table 21). Overall 17 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.2 ha of surface area and one (1) point per 205.7 m of shoreline. Out of the 17 points surveyed 10, or 58.8% were vegetated. The top three (3) most common species by presence were 1) *Eleocharis vivipara* (present in 52.9% of points) 2) *Hydrocotyle umbellata* (present in 17.6% of points) and 3) *Nyssa aquatica* (present in 17.6% of points). Non-native species (1 species) accounted for 10% of the 10 species observed. No species occurring on the federal noxious weed list were observed in Clarkco Lake. Of the 42 waterbodies surveyed, Clarkco Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 23<sup>rd</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 17<sup>th</sup> out of the 42 waterbodies surveyed.

#### Turkey Creek Reservoir (PHW):

Turkey Creek Reservoir (32.40477N, -89.15654W) was surveyed on 28 June 2017. Littoral zone depth was measured at 12'6" (3.81 m), in the 80<sup>th</sup> percentile of all waterbodies surveyed (Table 22). Overall 42 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 2.4 ha of surface area and one (1) point per 212.0 m of shoreline. Out of the 42 points surveyed 40, or 95% were vegetated. The top three (3) most common species by presence were 1) *Brasenia schreberi* (present in 61.9% of points) 2) *Nymphaea odorata* (present in 78.5% of points) and 3) *Chara spp.* (present in 9.5% of points). Non-native species (1 species) accounted for 16.7% of the six species observed. No species occurring on the federal noxious weed list were observed in Turkey Creek Reservoir. Of the 42 waterbodies surveyed, Turkey Creek Reservoir was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 40<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 40<sup>th</sup> out of the 42 waterbodies surveyed.

#### Roosevelt Lake (MDWFP):

Roosevelt Lake (32.31674N, -89.67735W) was surveyed on 28 June 2017. Littoral zone depth was measured at 13'6" (4.11 m), in the 80<sup>th</sup> percentile of all waterbodies surveyed (Table 23). Overall 28 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.6 ha of surface area and one (1) point per 190.2 m of shoreline. Out of the 28 points surveyed 15, or 53.5% were vegetated. The top three (3) most common species by presence were 1) *Najas guadalupensis* (present in 21.4% of points) 2) *Alternanthera philoxeroides* (present in 17.8% of points) and 3) *Eleocharis vivipara* (present in 14.3% of points). Non-native species (3 species) accounted for 16.7% of the 18 species observed. No species occurring on the federal noxious weed list were observed in Roosevelt Lake. Of the 42 waterbodies surveyed, Roosevelt Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 6<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 13<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Mary (Private):

Lake Mary (31.16460N, -91.54340W) was surveyed on 29 June 2017. Littoral zone depth was measured at 5'5" (1.65 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 24). Overall 14 points were taken; with a between-point distance of 400 m. Sampling effort was one (1) point per 138.7 ha of surface area and one (1) point per 2,620 m of shoreline. Out of the 14 points surveyed 6, or 42.8% were vegetated. The top three (3) most common species by presence were 1) *Taxodium distichum* (present in 21.4% of points) 2) *Platanus occidentalis* (present in 21.4% of points) and 3) *Fraxinus pennsylvanica* (present in 7.1% of points). No non-native or species on the federal noxious weed list were observed in Lake Mary. Of the 42 waterbodies surveyed, Lake Mary was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 39<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage on Lake Mary was the most even of all waterbodies surveyed.

#### Natchez Lake (Private):

Natchez Park Lake (31.5982N, -91.20883W) was surveyed on 29 June 2017. Littoral zone depth was measured at 8'5" (2.57 m), in the 40<sup>th</sup> percentile of all waterbodies surveyed (Table 25). Overall 47 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.7 ha of surface area and one (1) point per 209.6 m of shoreline. Out of the 47 points surveyed 19, or 40.4% were vegetated. The top three (3) most common species by presence were 1) *Juncus effusus* (present in 17% of points) 2) *Platanus occidentalis* (present in 10.6% of points) and 3) *Polygonum amphibium* (present in 10.6% of points). Non-native species (1 species) accounted for 7.1% of the 14 species observed. No species occurring on the federal noxious weed list were observed in Natchez Park Lake. Of the 42 waterbodies surveyed, Natchez Park Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 17<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 7<sup>th</sup> out of the 42 waterbodies surveyed.

#### Calling Panther Lake (MDWFP):

Calling Panther Lake (31.97076N, -90.47971W) was surveyed on 30 June 2017. Littoral zone depth was measured at 12' (3.66 m), in the 70<sup>th</sup> percentile of all waterbodies surveyed (Table 26). Overall 30 points were taken; with a between-point distance of 300 m. Sampling effort was one (1) point per 5.4 ha of surface area and one (1) point per 413 m of shoreline. Out of the 30 points surveyed 14, or 46.6% were vegetated. The top three (3) most common species by presence were 1) *Cephalanthus occidentalis* (present in 20% of points) 2) *Saururus cernuus* (present in 13.3% of points) and 3) *Typha spp.* (present in 6.7% of points). Non-native species (1 species) accounted for 8.3% of the 12 species observed. No species occurring on the federal noxious weed list were observed in Calling Panther Lake. Of the 42 waterbodies surveyed, Calling Panther Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 20<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 9<sup>th</sup> out of the 42 waterbodies surveyed.

#### Simpson-Legion Lake (MDWFP):

Simpson-Legion Lake (31.91208N, -89.79332W) was surveyed on 5 July 2017. Littoral zone depth was measured at 9' (2.74 m), in the 50<sup>th</sup> percentile of all waterbodies surveyed (Table 27). Overall 23 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.3 ha of surface area and one (1) point per 196.2 m of shoreline. Out of the 23 points surveyed 20, or 86.9% were vegetated. The top three (3) most common species by presence were 1) *Panicum repens* (present in 43.5% of points) 2) *Alternanthera philoxeroides* (present in 34.8% of points) and 3) *Cephalanthus occidentalis* (present in 30.4% of points). Non-native species (3 species) accounted for 16.7% of the 18 species observed. No species occurring on the federal noxious weed list were observed in Simpson-Legion Lake. Of the 42 waterbodies surveyed, Simpson-Legion Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 5<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 12<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Lincoln (MDWFP):

Lincoln Park Lake (31.68304N, -90.32467W) was surveyed on 5 July 2017. Littoral zone depth was measured at 25' 10.5" (7.89 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 28). Overall 42 points were taken; with a between-point distance of 250 m. Sampling effort was one (1) point per 4.3 ha of surface area and one (1) point per 374.1 m of shoreline. Out of the 42 points surveyed 17, or 40.4% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 21.4% of points) 2) *Bacopa caroliniana* (present in 19% of points) and 3) *Saccharum giganteum* (present in 19% of points). Non-native species (3 species) accounted for 20% of the 15 species observed. No species occurring on the federal noxious weed list were observed in Lincoln Park Lake. Of the 42 waterbodies surveyed, Lincoln Park Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 13<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 10<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Tangipahoa (MDWFP):

Lake Tangipahoa (31.18539N, -90.51764W) was surveyed on 7 July 2017. Littoral zone depth was measured at 5'9" (1.75 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 29). Overall 48 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 4.2 ha of surface area and one (1) point per 182.1 m of shoreline. Out of the 48 points surveyed 32, or 66.7% were vegetated. The top three (3) most common species by presence were 1) *Polygonum spp.* (present in 39.6% of points) 2) *Salvinia minima* (present in 31.3% of points) and 3) *Nuphar lutea* (present in 29.1% of points). Non-native species (5 species) accounted for 27.8% of the 18 species observed. No species occurring on the federal noxious weed list were observed in Lake Tangipahoa. Of the 42 waterbodies surveyed, Lake Tangipahoa was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 11<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 23<sup>rd</sup> out of the 42 waterbodies surveyed.

#### Walthall Lake (MDWFP):

Walthall Lake (31.06168N, -90.13332W) was surveyed on 7 July 2017. Littoral zone depth was measured at 16' (4.88 m), in the 90<sup>th</sup> percentile of all waterbodies surveyed (Table 30). Overall 20 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 0.97 ha of surface area and one (1) point per 228.6 m of shoreline. Out of the 20 points surveyed 16, or 80% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 45% of points) 2) *Eleocharis vivipara* (present in 30% of points) and 3) *Cephalanthus occidentalis* (present in 25% of points). Non-native species (2 species) accounted for 16.7% of the 12 species observed. No species occurring on the federal noxious weed list were observed in Walthall Lake. Of the 42 waterbodies surveyed, Walthall Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 16<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 2<sup>nd</sup> out of the 42 waterbodies surveyed.

#### Mary Crawford Lake (MDWFP):

Mary Crawford Lake (31.57689N, -90.15321W) was surveyed on 10 July 2017. Littoral zone depth was measured at 7'4.5" (2.25 m), in the 30<sup>th</sup> percentile of all waterbodies surveyed (Table 31). Overall 26 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 2.1 ha of surface area and one (1) point per 220.1 m of shoreline. Out of the 26 points surveyed 20, or 76.9% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 53.8% of points) 2) *Typha spp.* (present in 50% of points) and 3) *Eichhornia crassipes* (present in 46.2% of points). Non-native species (4 species) accounted for 22.2% of the 18 species observed. No species occurring on the federal noxious weed list were observed in Mary Crawford Lake. Of the 42 waterbodies surveyed, Mary Crawford Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 12<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 19<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Caroline (Private):

Lake Caroline (32.56416N, -90.13993W) was surveyed on 10 July 2017. Littoral zone depth was measured at 6'6" (1.98 m), in the 20<sup>th</sup> percentile of all waterbodies surveyed (Table 32). Overall 29 points were taken; with a between-point distance of 400 m. Sampling effort was one (1) point per 11.6 ha of surface area and one (1) point per 1058.7 m of shoreline. Out of the 29 points surveyed three, or 10.3% were vegetated. The two species encountered in sampling points were *Colocasia esculenta* (10.3%) and *Baccharis halimifolia* (3.4%). Three non-native species were observed (37.5% of the eight species observed). No species occurring on the federal noxious weed list were observed in Lake Caroline. Of the 42 waterbodies surveyed, Lake Caroline was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 30<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 8<sup>th</sup> out of the 42 waterbodies surveyed.

#### English Lake (MDWFP):

English Lake (33.02579N, -89.92669W) was surveyed on 11 July 2017. Littoral zone depth was measured at 6'3" (1.91 m), in the 20<sup>th</sup> percentile of all waterbodies surveyed (Table 33). Overall 15 points were taken; with a between-point distance of 100 m. Sampling effort was one (1) point per 0.57 ha of surface area and one (1) point per 79.3 m of shoreline. Out of the 15 points surveyed six, or 40% were vegetated. The top three (3) most common species by presence were 1) *Polygonum spp.* (present in 33.3% of points) 2) *Alternanthera philoxeroides* (present in 26.7% of points) and 3) *Digitaria spp.* and *Eleocharis obtusa* (present in 13.3% of points). Non-native species (2 species) accounted for 25% of the eight species observed. No species occurring on the federal noxious weed list were observed in English Lake. Of the 42 waterbodies surveyed, English Lake was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 27<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 4<sup>th</sup> out of the 42 waterbodies surveyed.

#### Bee Lake (Private):

Bee Lake (33.07380N, -90.3701W) was surveyed on 11 July 2017. Littoral zone depth was measured at 5'3" (1.60 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 34). Overall, 86 points were taken, with a between-point distance of 500 m. Sampling effort was one (1) point per 6.2 ha of surface area and one (1) point per 525.0 m of shoreline. Out of the 86 points surveyed 77, or 89.5% were vegetated. The top three (3) most common species by presence were 1) *Taxodium distichum* (present in 77.9% of points) 2) *Alternanthera philoxeroides* (present in 15.1% of points) and 3) *Cephalanthus occidentalis* (present in 10.5% of points). Non-native species (3 species) accounted for 13.6% of the 22 species observed. No species occurring on the federal noxious weed list were observed in Bee Lake. Of the 42 waterbodies surveyed, Bee Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 24<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 37<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lake Washington (Private):

Lake Washington (33.10055N, -91.08356W) was surveyed on 12 July 2017. Littoral zone depth was measured at 3' (0.91 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 35).

Overall 55 points were taken; with a between-point distance of 500 m. Sampling effort was one (1) point per 21.5 ha of surface area and one (1) point per 576.4 m of shoreline. Out of the 55 points surveyed 38, or 69.1% were vegetated. The top three (3) most common species by presence were 1) *Taxodium distichum* (present in 60% of points) 2) *Zizaniopsis miliacea* (present in 21.8% of points) and 3) *Colocasia esculenta* (present in 7.3% of points). Non-native species (1 species) accounted for 16.7% of the six species observed. No species occurring on the federal noxious weed list were observed in Lake Washington. Of the 42 waterbodies surveyed, Lake Washington was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 37<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 36<sup>th</sup> out of the 42 waterbodies surveyed.

#### Moon Lake (Private):

Moon Lake (34.40917N, -90.56602W) was surveyed on 12 July 2017. Littoral zone depth was measured at 7' (2.1 m), in the 30<sup>th</sup> percentile of all waterbodies surveyed (Table 36). Overall 51 points were taken; with a between-point distance of 500 m. Sampling effort was one (1) point per 23.5 ha of surface area and one (1) point per 508.4 m of shoreline. Out of the 51 points surveyed 39, or 76.4% were vegetated. The top three (3) most common species by presence were 1) *Taxodium distichum* (present in 68.2% of points) 2) *Cephalanthus occidentalis* (present in 15.7% of points) and 3) *Hibiscus laevis* and *Crataegus spp.* (present in 3.9 % of points). Non-native species (1 species) accounted for 14.3% of the seven species observed. No species occurring on the federal noxious weed list were observed in Moon Lake. Of the 42 waterbodies surveyed, Moon Lake was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 41<sup>st</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 41<sup>st</sup> out of the 42 waterbodies surveyed.

#### Tippah County Lake (MDWFP):

Tippah County Lake (34.79545N, -88.952132W) was surveyed on 13 July 2017. Littoral zone depth was measured at 9'10.5" (3.01 m), in the 50<sup>th</sup> percentile of all waterbodies surveyed (Table 37). Overall 37 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 1.6 ha of surface area and one (1) point per 188.9 m of shoreline. Out of the 37 points surveyed 26, or 70.2% were vegetated. The top three (3) most common species by presence were 1) *Eleocharis vivipara* (present in 35.1% of points) 2) *Panicum repens* (present in 35.1% of points) and 3) *Ludwigia peploides* (present in 18.9% of points). Non-native species (2 species) accounted for 20% of the 10 species observed. No species occurring on the federal noxious weed list were observed in Tippah County Lake. Of the 42 waterbodies surveyed, Tippah County Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 25<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 20<sup>th</sup> out of the 42 waterbodies surveyed.

#### Tombigbee Lake (MDWFP):

Tombigbee Lake (34.23479N, -88.62242W) was surveyed on 25 July 2017. Littoral zone depth was measured at 8'5" (2.42 m), in the 40<sup>th</sup> percentile of all waterbodies surveyed (Table 38). Overall 33 points were taken; with a between-point distance of 150 m. Sampling effort was one

(1) point per 0.65 ha of surface area and one (1) point per 199.4 m of shoreline. Out of the 33 points surveyed 29, or 87.8% were vegetated. The top three (3) most common species by presence were 1) *Justicia americana* (present in 60.6% of points) 2) *Juncus effusus* (present in 39.4% of points) and 3) *Triadenum walteri* (present in 31.4% of points). No non-native species were observed out of the 11 species observed. No species occurring on the federal noxious weed list were observed in Tombigbee Lake. Of the 42 waterbodies surveyed, Tombigbee Lake was about average in terms of plant diversity (Shannon-Weaver H Index), and ranked 22<sup>nd</sup> out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 14<sup>th</sup> out of the 42 waterbodies surveyed.

#### Elvis Presley Lake (MDWFP):

Elvis Presley Lake (34.29925, -88.65284W) was surveyed on 26 July 2017. Littoral zone depth was measured at 25'9" (7.84 m), in the 90<sup>th</sup> percentile of all waterbodies surveyed (Table 39). Overall 51 points were taken; with a between-point distance of 250 m. Sampling effort was one (1) point per 2.5 ha of surface area and one (1) point per 317.9 m of shoreline. Out of the 51 points surveyed 47, or 92.2% were vegetated. The top three (3) most common species by presence were 1) *Chara spp.* (present in 90.2% of points) 2) *Juncus effusus* (present in 19.6% of points) and 3) *Potamogeton nodosus* (present in 7.8% of points). Non-native species (1 species) accounted for 6.3% of the 16 species observed. No species occurring on the federal noxious weed list were observed in Elvis Presley Lake. Of the 42 waterbodies surveyed, Elvis Presley Lake was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 36<sup>th</sup> out of the 42 waterbodies surveyed. The plant assemblage was not evenly distributed, with an evenness ranking of 39<sup>th</sup> out of the 42 waterbodies surveyed.

#### Lamar Bruce Lake (MDWFP):

Lamar Bruce Lake (34.39615N, -88.66378W) was surveyed on 26 July 2017. Littoral zone depth was measured at 13'6" (4.11 m), in the 80<sup>th</sup> percentile of all waterbodies surveyed (Table 40). Overall 56 points were taken; with a between-point distance of 250 m. Sampling effort was one (1) point per 2.1 ha of surface area and one (1) point per 331.4 m of shoreline. Out of the 56 points surveyed 31, or 55.3% were vegetated. The top three (3) most common species by presence were 1) *Cephalanthus occidentalis* (present in 35.7% of points) 2) *Juncus effusus* (present in 12.5% of points) and 3) *Saururus cernuus* (present in 8.9% of points). Non-native species (1 species) accounted for 4.5% of the 22 species observed. No species occurring on the federal noxious weed list were observed in Lamar Bruce Lake. Of the 42 waterbodies surveyed, Lamar Bruce Lake was higher than average in terms of plant diversity (Shannon-Weaver H Index), and ranked third out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 16<sup>th</sup> out of the 42 waterbodies surveyed.

#### Kemper County Lake (MDWFP):

Kemper County Lake (32.81326N, -88.71906W) was surveyed on 31 July 2017. Littoral zone depth was measured at 16'6" (5.03 m), in the 90<sup>th</sup> percentile of all waterbodies surveyed (Table 41). Overall 64 points were taken; with a between-point distance of 300 m. Sampling effort was

one (1) point per 3.9 ha of surface area and one (1) point per 355.2 m of shoreline. Out of the 64 points surveyed 57, or 89.1% were vegetated. The most common species by presence were 1) *Lindera benzoin* (present in 39.1% of points) 2) *Potamogeton foliosus* (present in 37.5% of points). Non-native species (2 species) accounted for 8% of the 25 species observed. No species occurring on the federal noxious weed list were observed in Kemper County Lake. Of the 42 waterbodies surveyed, Kemper one of the highest in terms of plant diversity (Shannon-Weaver H Index), and ranked second out of the 42 waterbodies surveyed. The plant assemblage was evenly distributed, with an evenness ranking of 6<sup>th</sup> out of the 42 waterbodies surveyed.

#### Anchor Lake (Private):

Anchor Lake (32.40477N, -89.15654W) was surveyed on 26 July 2017. Littoral zone depth was measured at 9'3.5" (2.83 m), in the 10<sup>th</sup> percentile of all waterbodies surveyed (Table 42). Overall 8 points were taken; with a between-point distance of 150 m. Sampling effort was one (1) point per 11.8 ha of surface area and one (1) point per 745.6 m of shoreline. Out of the 8 points surveyed 7, or 87.5% were vegetated. The top three (3) most common species by presence were 1) *Ludwigia peploides* (present in 87.5% of points) 2) *Panicum repens* (present in 75% of points) and 3) *Cyperus esculentus* (present in 25% of points). Non-native species (3 species) accounted for 37.5% of the eight species observed. No species occurring on the federal noxious weed list were observed in Anchor Lake. Of the 42 waterbodies surveyed, Anchor Lake was lower than average in terms of plant diversity (Shannon-Weaver H Index), and ranked 31<sup>st</sup> out of the 42 waterbodies surveyed. The plant assemblage was about average in terms of evenness, with an evenness ranking of 18<sup>th</sup> out of the 42 waterbodies surveyed.

#### **Statewide:**

In total 105 unique species were encountered (Table 43); however this is not a comprehensive list of plant species known to occur at aquatic locations in MS. Some species were only identified to the taxonomic level of genus. A total of 15 non-native species were observed (Table 43). Of the non-native species observed alligatorweed (*Alternanthera philoxeroides*) was the most widespread (30 waterbodies), followed by torpedograss (15 waterbodies), and brittle naiad (12 waterbodies). Water hyacinth (8 waterbodies), wild taro (8 waterbodies), and Cuban bulrush (7 waterbodies) are of concern as they have the potential to rapidly colonize any waterbody in the state. Of the 42 waterbodies surveyed, only four had plant assemblages composed of native aquatic plant species: Geiger Lake, Lake Hideaway, Lake Mary, and Tombigbee Lake. In some waterbodies, native species also caused nuisance problems (i.e. *Bacopa caroliniana* in Flint Creek Reservoir).

#### **Conclusions**

- Only four waterbodies in this survey had plant assemblages composed of only native aquatic plant species.
- There were 15 non-native species observed in this survey.

- Alligatorweed (30 waterbodies) and torpedograss (15 waterbodies) were the most widespread non-native species in the state.
- Brittle naiad (12 waterbodies), torpedograss (8 waterbodies), water hyacinth (8 waterbodies), and Cuban bulrush (7 waterbodies) are of concern as they have the ability to rapidly colonize any waterbody within MS in which they are introduced.

### **Recommendations**

- Continue monitoring waterbodies within MS for the presence of non-native aquatic plant species.
- Implement early detection, rapid response (EDRR) management options on populations of those non-native aquatic plant species known to be in MS, specifically small isolated populations before they spread to other sites.
- Determine suitable goals for management of large populations of non-native aquatic plant species.
- Implement management strategies on those populations of native species that have grown to nuisance levels in MS waterbodies.

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## Tables and Figures

Table 1. Plant species present in Bluff Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’2”	<b>Date Surveyed</b>	6/13/2017
<b>Secchi Down</b>	2’4”	<b>Total Pts. Sur</b>	23
<b>Littoral Depth</b>	7’	<b>Total Pts. Veg</b>	22
		<b>%-Littoral Veg</b>	95.6
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae spp.</i>	Filamentous Algae	1	4.3
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	2	8.6
<i>Brasenia schreberi</i>	Watershield	*	-
<i>Ceratophyllum demersum</i>	Coontail	*	-
<b><i>Hydrilla verticillata</i></b>	<b>Hydrilla</b>	7	30.4
<i>Lemna minor</i>	Common Duckweed	1	4.3
<i>Limnobiium spongia</i>	Frogsbit	1	4.3
<i>Ludwigia peploides</i>	Floating Primrose-Willow	6	26.0
<u><i>Myriophyllum aquaticum</i></u>	<u>Parrotfeather</u>	1	4.3
<i>Nelumbo lutea</i>	American Lotus	19	82.6
<i>Nymphaea odorata</i>	White Waterlily	2	8.6
<i>Polygonum spp.</i>	Smartweed	3	13
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	*	-
<i>Salix nigra</i>	Black Willow	*	-
<i>Taxodium distichum</i>	Bald Cypress	*	-
<i>Zizaniopsis miliacea</i>	Giant Cutgrass	10	43.4
	<b>Species Richness</b>	16	
	<b>Native Richness</b>	13	

Table 2. Plant species present in Lake Loakfoma. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’6”	<b>Date Surveyed</b>	6/13/2017
<b>Secchi Down</b>	3’	<b>Total Pts. Sur</b>	15
<b>Littoral Depth</b>	7’6”	<b>Total Pts. Veg</b>	13
		<b>%-Littoral Veg</b>	86.6
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	*	-
<i>Brasenia schreberi</i>	Watershield	8	53.3
<i>Cephalanthus occidentalis</i>	Buttonbush	*	-
<i>Echinodorus cordifolius</i>	Creeping Burhead	*	-
<b><i>Hydrilla verticillata</i></b>	<b>Hydrilla</b>	*	-
<i>Limnobiium spongia</i>	Frogsbit	*	-
<i>Ludwigia peploides</i>	Floating Primrose-Willow	3	20.0
<u>Myriophyllum aquaticum</u>	<u>Parrotfeather</u>	*	-
<i>Najas guadalupensis</i>	Southern Naiad	*	-
<i>Nelumbo lutea</i>	American Lotus	12	80.0
<i>Nymphaea odorata</i>	White Waterlily	3	20.0
<i>Polygonum spp.</i>	Smartweed	1	6.6
<i>Potamogeton foliosus</i>	Leafy Pondweed	*	-
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	*	-
<i>Salix nigra</i>	Black Willow	*	-
<i>Typha spp.</i>	Cattail	*	-
<i>Utricularia spp.</i>	Bladderwort	2	13.3
<i>Zizaniopsis miliacea</i>	Giant Cutgrass	1	6.6
	<b>Species Richness</b>	18	
	<b>Native Richness</b>	15	

Table 3. Plant species present in Lake Okhissa. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	8’7”	<b>Date Surveyed</b>	July 6, 2017
<b>Secchi Down</b>	8’8”	<b>Total Pts. Sur</b>	293
<b>Littoral Depth</b>	25’11”	<b>Total Pts. Veg</b>	284
		<b>%-Littoral Veg</b>	96.9
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Arundinaria gigantea</i>	Giant cane	*	-
<i>Baccharis halmifolia</i>	Baccharis	*	-
<i>Brasenia schreberi</i>	Watershield	54	18.4
<i>Ceratophyllum demersum</i>	Coontail	16	5.4
<i>Cephalanthus occidentalis</i>	Buttonbush	*	-
<i>Chara</i> spp.	Chara	4	1.3
<u><i>Colocasia esculenta</i></u>	<u>Wild taro</u>	1	0.3
<i>Eichhornia crassipes</i>	Water hyacinth	1	0.3
<i>Eleocharis obtusa</i>	Blunt spikerush	*	-
<b><i>Hydrilla verticillata</i></b>	<b>Hydrilla</b>	219	74.7
<i>Ludwigia peploides</i>	Floating primrose-willow	*	-
<i>Najas guadalupensis</i>	Southern naiad	2	0.6
<i>Nelumbo lutea</i>	American lotus	*	-
<i>Nymphaea odorata</i>	White waterlily	4	1.3
<u><i>Panicum repens</i></u>	<u>Torpedograss</u>	1	0.3
<i>Potamogeton diversifolius</i>	Waterthread pondweed	*	-
<i>Potamogeton nodosus</i>	American pondweed	*	-
<i>Sagittaria lancifolia</i>	Bulltongue arrowhead	2	0.6
<i>Sagittaria graminea</i>	Grassy arrowhead	*	-
<i>Salix nigra</i>	Black Willow	*	-
<i>Saururus cernuus</i>	Lizard tail	*	-
<i>Scirpus cyperinus</i>	Wool grass	*	-
<i>Typha</i> spp.	Cattail	*	-
<i>Utricularia</i> spp.	Bladderwort	*	-
	<b>Species Richness</b>	24	
	<b>Native Richness</b>	21	

Table 4. Plant species present in Bay Springs Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	6'5"	<b>Date Surveyed</b>	26, 27, 28, 31 July 2017
<b>Secchi Down</b>	7'	<b>Total Pts. Sur</b>	465
<b>Littoral Depth</b>	20'1.5"	<b>Total Pts. Veg</b>	365
		<b>%-Littoral Veg</b>	78.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	3	0.06
<i>Baccharis halimifolia</i>	Eastern baccharis	*	*
<i>Najas minor</i>	Brittle waternymph	1	0.02
<i>Cephalanthus occidentalis</i>	Common buttonbush	7	1.5
<i>Chara spp.</i>	Muskgrass	46	9.9
<i>Echinodorus cordifolius</i>	Creeping burhead	6	1.3
<i>Eleocharis vivipara</i>	Viviparous spikerush	11	2.4
<i>Hibiscus moscheutos</i>	Crimson-eyed rosemallow	3	0.06
<b><i>Hydrilla verticillata</i></b>	<b>Waterthyme</b>	155	33.3
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	4	0.08
<i>Juncus effusus</i>	Common rush	15	3.2
<i>Juncus spp.</i>	Rush	11	2.3
<i>Justicia americana</i>	American water-willow	13	2.8
<i>Liquidambar styraciflua</i>	Sweetgum	2	0.04
<i>Ludwigia peploides</i>	Floating primrose-willow	1	0.02
<i>Najas guadalupensis</i>	Southern waternymph	47	10.1
<i>Nitella spp.</i>	Stonewort	88	18.9
<i>Nuphar lutea</i>	Spatterdock	1	0.02
<i>Potamogeton foliosus</i>	Leafy pondweed	2	0.04
<i>Potamogeton illinoensis</i>	Illinois pondweed	24	5.2
<i>Potamogeton nodosus</i>	Longleaf pondweed	93	20
<i>Rhynchospora corniculata</i>	Shortbristle horned beaksedge	3	0.06
<i>Saccharum giganteum</i>	Sugarcane plumegrass	3	0.06
<i>Salix nigra</i>	Black willow	2	0.04
<i>Saururus cernuus</i>	Lizard's Tail	4	0.08
<i>Scirpus cyperinus</i>	Woolgrass	4	0.08
<i>Taxodium distichum</i>	Bald cypress	1	0.02
<i>Typha spp.</i>	Cattail	*	*
	<b>Species Richness</b>	28	
	<b>Native Richness</b>	26	

Table 5. Plant species present in Lake Columbus. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1'4"	<b>Date Surveyed</b>	14 June 2017
<b>Secchi Down</b>	1'8"	<b>Total Pts. Sur</b>	39
<b>Littoral Depth</b>	5'	<b>Total Pts. Veg</b>	35
		<b>%-Littoral Veg</b>	89.7
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae</i> spp.	Filamentous algae	1	2.5
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	20	51.3
<i>Cephalanthus occidentalis</i>	Common buttonbush	1	2.5
<i>Ceratophyllum demersum</i>	Coontail	3	7.7
<i>Colocasia esculenta</i>	Wild taro	2	5.1
<i>Cyperus odoratus</i>	Fragrant Flatsedge	1	2.5
<u><i>Eichornnia crassipes</i></u>	<u>Water hyacinth</u>	26	66.6
<i>Eupatorium serotinum</i>	Late Thoroughwort	1	2.5
<b><i>Hydrilla verticillata</i></b>	<b>Waterhyme</b>	5	12.8
<i>Juncus effusus</i>	Common rush	2	7.7
<i>Justicia americana</i>	American water-willow	6	15.4
<i>Lemna minor</i>	Common duckweed	12	30.7
<i>Ludwigia peploides</i>	Floating primrose-willow	1	2.5
<i>Najas minor</i>	Brittle naiad	1	2.5
<i>Nelumbo lutea</i>	American lotus	7	17.9
<i>Nymphaea odorata</i>	White waterlily	*	*
<u><i>Oxycaryum cubense</i></u>	<u>Cuban bulrush</u>	12	30.7
<i>Polygonum hydropiperoides</i>	Swamp Smartweed	1	2.5
<u><i>Potamogeton crispus</i></u>	<u>Curlyleaf pondweed</u>	1	2.5
<i>Potamogeton nodosus</i>	Longleaf pondweed	12	30.7
<i>Rhynchospora corniculata</i>	Shortbristle horned beaksedge	1	2.5
<i>Sagittaria lancifolia</i>	Bulltongue arrowhead	1	2.5
<i>Sagittaria latifolia</i>	Broadleaf arrowhead	1	2.5
<u><i>Salvinia minima</i></u>	<u>Common salvinia</u>	4	10.3
<i>Saururus cernuus</i>	Lizard's Tail	2	7.7
<i>Taxodium distichum</i>	Bald cypress	6	15.4
<i>Typha</i> spp.	Cattail	1	2.5
<i>Utricularia</i> spp	Bladderwort	1	2.5
<i>Zizaniopsis miliacea</i>	Giant cutgrass	1	2.5
	<b>Species Richness</b>	28	
	<b>Native Richness</b>	22	

Table 6. Plant species present in Lake Lowndes. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’7”	<b>Date Surveyed</b>	6/14/2017
<b>Secchi Down</b>	3’1”	<b>Total Pts. Sur</b>	32
<b>Littoral Depth</b>	8’6”	<b>Total Pts. Veg</b>	26
		<b>%-Littoral Veg</b>	72.2
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae</i> spp.	Filamentous Algae	1	3.1
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	1	3.1
<i>Bacopa</i> spp.	Waterhyssop	5	15.6
<i>Cephalanthus occidentalis</i>	Buttonbush	4	12.5
<i>Chara</i> spp.	Chara	22	68.7
<i>Cyperus odoratus</i>	Fragrant Flatsedge	*	-
<i>Drepanocladus</i> spp.	Watermoss	*	-
<i>Eleocharis obtusa</i>	Blunt Spikerush	*	-
<i>Eleocharis</i> spp.	Spikerush	1	3.1
<i>Eupatorium serotinum</i>	Late Thoroughwort	*	-
<i>Hydrocotyle umbellata</i>	Manyflower Pennywort	1	3.1
<i>Juncus</i> spp.	Juncus	*	-
<i>Lemna minor</i>	Common Duckweed	1	3.1
<i>Liquidambar styraciflua</i>	Sweetgum	*	-
<i>Ludwigia peploides</i>	Floating Primrose-Willow	6	18.7
<u><i>Myriophyllum aquaticum</i></u>	<u>Parrotfeather</u>	1	3.1
<i>Nitella</i> spp.	Stonewort	*	-
<i>Polygonum hydropiperoides</i>	Swamp Smartweed	2	6.2
<i>Polygonum pennsylvanicum</i>	Pennsylvania Smartweed	*	-
<i>Potamogeton diversifolius</i>	Waterthread Pondweed	4	12.5
<i>Potamogeton foliosus</i>	Leafy Pondweed	*	-
<i>Salix nigra</i>	Black Willow	*	-
<i>Saururus cernuus</i>	Lizard Tail	*	-
<i>Typha</i> spp.	Cattail	*	-
<i>Utricularia</i> spp.	Bladderwort	*	-
<i>Zizaniopsis miliacea</i>	Giant Cutgrass	*	-
	<b>Species Richness</b>	26	
	<b>Native Richness</b>	24	

Table 7. Plant species present in Lake Hideaway. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’1”	<b>Date Surveyed</b>	6/21/2017
<b>Secchi Down</b>	3’7”	<b>Total Pts. Sur</b>	35
<b>Littoral Depth</b>	10’	<b>Total Pts. Veg</b>	26
		<b>%-Littoral Veg</b>	74.2
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Ceratophyllum demersum</i>	Coontail	5	14.2
<i>Eleocharis vivipara</i>	Viviparous spikerush	24	68.5
<i>Nitella</i> spp.	Stonewort	1	2.8
<i>Nuphar lutea</i>	Yellow Pondlily	2	5.7
<i>Utricularia</i> spp.	Bladderwort	2	5.7
	<b>Species Richness</b>	5	
	<b>Native Richness</b>	5	

Table 8. Plant species present in Lake Bill Waller. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’10”	<b>Date Surveyed</b>	6/19/2017
<b>Secchi Down</b>	3’1”	<b>Total Pts. Sur</b>	37
<b>Littoral Depth</b>	9’	<b>Total Pts. Veg</b>	35
		<b>%-Littoral Veg</b>	94.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	2	5.4
<i>Brasenia schreberi</i>	Watershield	31	83.7
<i>Cyperus odoratus</i>	Fragrant Flatsedge	1	2.7
<i>Hydrocotyle</i> spp.	Pennywort	3	8.1
<i>Ludwigia palustris</i>	Marsh Seedbox	1	2.7
<i>Najas guadalupensis</i>	Southern Naiad	1	2.7
<i>Nelumbo lutea</i>	American Lotus	*	-
<i>Nymphaea odorata</i>	White Waterlily	20	54.0
<u>Oxycaryum cubense</u>	<u>Cuban Bulrush</u>	3	8.1
<u>Panicum repens</u>	<u>Torpedograss</u>	11	29.7
<i>Typha</i> spp.	Cattail	3	8.1
	<b>Species Richness</b>	11	
	<b>Native Richness</b>	8	

Table 9. Plant species present in Lake Columbia. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’3”	<b>Date Surveyed</b>	6/19/2017
<b>Secchi Down</b>	4’	<b>Total Pts. Sur</b>	29
<b>Littoral Depth</b>	10’9”	<b>Total Pts. Veg</b>	27
		<b>%-Littoral Veg</b>	93.1
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	1	3.4
<i>Brasenia schreberi</i>	Watershield	29	100
<i>Ceratophyllum demersum</i>	Coontail	13	44.8
<i>Cephalanthus occidentalis</i>	Buttonbush	*	-
<i>Nymphaea odorata</i>	White Waterlily	17	58.6
<i>Polygonum</i> spp.	Smartweed	1	3.4
<i>Potamogeton foliosus</i>	Leafy Pondweed	1	3.4
<i>Typha</i> spp.	Cattail	12	41.3
<i>Utricularia</i> spp.	Bladderwort	14	48.2
<i>Zizaniopsis miliacea</i>	Giant Cutgrass	9	31.0
	<b>Species Richness</b>	10	
	<b>Native Richness</b>	9	

Table 10. Plant species present in Lake Geiger. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’10”	<b>Date Surveyed</b>	6/20/2017
<b>Secchi Down</b>	3’4”	<b>Total Pts. Sur</b>	49
<b>Littoral Depth</b>	9’3”	<b>Total Pts. Veg</b>	39
		<b>%-Littoral Veg</b>	79.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Brasenia schreberi</i>	Watershield	8	16.3
<i>Ceratophyllum demersum</i>	Coontail	3	7.6
<i>Chara</i> spp.	Chara	4	10.2
<i>Cyperus odoratus</i>	Fragrant Flatsedge	1	2.5
<i>Hydrocotyle</i> spp.	Pennywort	*	-
<i>Ludwigia</i> spp.	Primrose	2	5.1
<i>Nymphaea odorata</i>	White Waterlily	21	53.8
<i>Quercus nigra</i>	Water Oak	*	-
<i>Stuckenia pectinata</i>	Sago Pondweed	26	66.6
<i>Saururus cernuus</i>	Lizard Tail	*	-
<i>Utricularia</i> spp.	Bladderwort	11	28.2
<i>Zizaniopsis miliacea</i>	Giant Cutgrass	*	-
	<b>Species Richness</b>	12	
	<b>Native Richness</b>	12	

Table 11. Plant species present in Lake Perry. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’4”	<b>Date Surveyed</b>	6/20/2017
<b>Secchi Down</b>	3’	<b>Total Pts. Sur</b>	19
<b>Littoral Depth</b>	8’	<b>Total Pts. Veg</b>	15
		<b>%-Littoral Veg</b>	78.9
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	1	5.2
<i>Bacopa</i> spp.	Waterhyssop	1	5.2
<i>Brasenia schreberi</i>	Watershield	11	57.8
<i>Hydrolea quadrivalus</i>	Waterpod	*	-
<i>Ludwigia palustris</i>	Marsh Seedbox	2	10.5
<u>Myriophyllum spicatum</u>	<u>Eurasian Watermilfoil</u>	1	5.2
<i>Nymphaea odorata</i>	White Waterlily	6	31.5
<i>Polygonum</i> spp.	Smartweed	3	15.7
<i>Stuckenia pectinata</i>	Sago Pondweed	3	15.7
	<b>Species Richness</b>	9	
	<b>Native Richness</b>	7	

Table 12. Plant species present in Flint Creek Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’3”	<b>Date Surveyed</b>	6/20-21/2017
<b>Secchi Down</b>	4’6”	<b>Total Pts. Sur</b>	129
<b>Littoral Depth</b>	10’10”	<b>Total Pts. Veg</b>	116
		<b>%-Littoral Veg</b>	89.9
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Bacopa caroliniana</i>	Blue Waterhyssop	54	41.8
<i>Chara</i> spp.	Chara	1	0.7
<i>Colocasia esculenta</i>	Wild Taro	1	0.7
<i>Hydrocotyle</i> spp.	Pennywort	4	3.1
<i>Juncus repens</i>	Lesser Creeping Rush	19	14.7
<i>Mayaca fluviatilis</i>	Stream Bogmoss	1	0.7
<u><i>Panicum repens</i></u>	<u>Torpedograss</u>	23	17.8
<i>Stuckenia pectinata</i>	Sago Pondweed	48	37.2
<i>Typha</i> spp.	Cattail	*	-
<i>Utricularia</i> spp.	Bladderwort	55	42.6
	<b>Species Richness</b>	10	
	<b>Native Richness</b>	9	

Table 13. Plant species present in Lake Mike Connor. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	5’	<b>Date Surveyed</b>	6/22/2017
<b>Secchi Down</b>	5’7”	<b>Total Pts. Sur</b>	21
<b>Littoral Depth</b>	15’9”	<b>Total Pts. Veg</b>	19
		<b>%-Littoral Veg</b>	90.4
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	1	4.7
<i>Hydrocotyle</i> spp.	Pennywort	1	4.7
<i>Juncus effusus</i>	Common Rush	*	-
<i>Ludwigia peploides</i>	Floating Primrose-Willow	2	9.5
<i>Najas guadalupensis</i>	Southern Naiad	19	90.4
<u>Panicum repens</u>	<u>Torpedograss</u>	4	19.0
<i>Polygonum</i> spp.	Smartweed	1	4.7
<i>Potamogeton diversifolius</i>	Waterthread Pondweed	10	47.6
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	1	4.7
<i>Taxodium distichum</i>	Bald Cypress	1	4.7
<i>Typha</i> spp.	Cattail	*	-
	<b>Species Richness</b>	11	
	<b>Native Richness</b>	9	

Table 14. Plant species present in Dry Creek Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’2”	<b>Date Surveyed</b>	6/22/2017
<b>Secchi Down</b>	3’9”	<b>Total Pts. Sur</b>	15
<b>Littoral Depth</b>	10’3”	<b>Total Pts. Veg</b>	14
		<b>%-Littoral Veg</b>	93.3
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	2	13.3
<i>Cephalanthus occidentalis</i>	Buttonbush	10	66.6
<i>Juncus repens</i>	Lesser Creeping Rush	1	6.6
<i>Ludwigia</i> spp.	Primrose	1	6.6
<i>Pluchea camphorata</i>	Camphor Pluchea	1	6.6
<i>Polygonum hydropiperoides</i>	Swamp Smartweed	1	6.6
<i>Salix nigra</i>	Black Willow	1	6.6
<i>Stuckenia pectinata</i>	Sago Pondweed	12	80.0
<i>Utricularia</i> spp.	Bladderwort	1	6.6
	<b>Species Richness</b>	9	
	<b>Native Richness</b>	8	

Table 15. Plant species present in Prentiss Walker Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’10”	<b>Date Surveyed</b>	6/22/2017
<b>Secchi Down</b>	2’3”	<b>Total Pts. Sur</b>	25
<b>Littoral Depth</b>	6’1”	<b>Total Pts. Veg</b>	16
		<b>%-Littoral Veg</b>	64.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	9	36.0
<i>Azolla caroliniana</i>	Carolina Mosquitofern	1	4.0
<i>Brasenia schreberi</i>	Watershield	1	4.0
<i>Carex spp.</i>	Sedge	1	4.0
<i>Cyperus spp.</i>	Flatsedge	1	4.0
<i>Hydrocotyle umbellata</i>	Manyflower Pennywort	5	20.0
<i>Juncus repens</i>	Lesser Creeping Rush	4	16.0
<i>Nitella spp.</i>	Stonewort	1	4.0
<i>Nyssa aquatica</i>	Water Tupelo	4	16.0
<i>Polygonum hydropiperoides</i>	Swamp Smartweed	3	12.0
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	1	4.0
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	1	4.0
<i>Saururus cernuus</i>	Lizard Tail	3	12.0
<i>Sparganium americanum</i>	American Bur-reed	2	8.0
<i>Typha spp.</i>	Cattail	1	4.0
	<b>Species Richness</b>	15	
	<b>Native Richness</b>	14	

Table 16. Plant species present in Turkey Fork Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’11”	<b>Date Surveyed</b>	6/23/2017
<b>Secchi Down</b>	2’8”	<b>Total Pts. Sur</b>	41
<b>Littoral Depth</b>	7’	<b>Total Pts. Veg</b>	29
		<b>%-Littoral Veg</b>	70.7
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	5	12.1
<i>Baccharis halmifolia</i>	Baccharis	1	2.4
<i>Brasenia schreberi</i>	Watershield	*	-
<i>Eleocharis vivipara</i>	Viviparous Spikerush	6	14.6
<u>Eichhornia crassipes</u>	<u>Water Hyacinth</u>	*	-
<i>Equisetum</i> spp.	Horsetail	1	2.4
<i>Eupatorium serotinum</i>	Late Thoroughwort	1	2.4
<i>Hydrocotyle umbellata</i>	Manyflower Pennywort	3	7.3
<i>Nymphaea odorata</i>	White Waterlily	11	26.8
<u>Panicum repens</u>	<u>Torpedograss</u>	9	21.9
<i>Platanus occidentalis</i>	American Sycamore	1	2.4
<i>Potamogeton foliosus</i>	Leafy Pondweed	1	2.4
<i>Scirpus cyperinus</i>	Wool grass	3	7.3
<i>Sparganium americanum</i>	American Bur-reed	1	2.4
<i>Taxodium distichum</i>	Bald Cypress	2	4.8
<i>Utricularia</i> spp.	Bladderwort	10	24.3
	<b>Species Richness</b>	16	
	<b>Native Richness</b>	13	

Table 17. Plant species present in Maynor Creek Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’4”	<b>Date Surveyed</b>	6/26/2017
<b>Secchi Down</b>	3’9”	<b>Total Pts. Sur</b>	41
<b>Littoral Depth</b>	10’9”	<b>Total Pts. Veg</b>	38
		<b>%-Littoral Veg</b>	92.8
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	*	-
<i>Bacopa caroliniana</i>	Blue Waterhyssop	3	7.3
<i>Brasenia schreberi</i>	Watershield	7	17.0
<i>Cephalanthus occidentalis</i>	Buttonbush	2	4.8
<i>Cerotophyllum demersum</i>	Coontail	2	4.8
<i>Eleocharis vivipara</i>	Viviparous Spikerush	2	4.8
<i>Hydrocotyle umbellata</i>	Manyflower Pennywort	*	-
<i>Ludwigia peploides</i>	Floating Primrose-Willow	7	17.0
<i>Myriophyllum heterophyllum</i>	Variableleaf Watermilfoil	4	9.7
<u>Myriophyllum spicatum</u>	<u>Eurasian Watermilfoil</u>	15	36.5
<i>Najas minor</i>	Brittle naiad	3	7.3
<i>Nelumbo lutea</i>	American lotus	7	17.0
<i>Nymphaea odorata</i>	White Waterlily	15	36.5
<u>Panicum repens</u>	<u>Torpedograss</u>	17	41.4
<i>Potamogeton foliosus</i>	Leafy Pondweed	20	48.7
<i>Potamogeton diversifolius</i>	Waterthread Pondweed	4	9.7
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	1	2.4
<i>Utricularia</i> spp.	Bladderwort	18	43.9
	<b>Species Richness</b>	18	
	<b>Native Richness</b>	15	

Table 18. Plant species present in Lake Bogue Homa. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’7”	<b>Date Surveyed</b>	6/26/2017
<b>Secchi Down</b>	2’	<b>Total Pts. Sur</b>	29
<b>Littoral Depth</b>	5’6”	<b>Total Pts. Veg</b>	27
		<b>%-Littoral Veg</b>	93.1
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	8	27.5
<i>Ceratophyllum demersum</i>	Coontail	6	20.6
<i>Chara</i> spp.	Chara	1	3.4
<u>Eichhornia crassipes</u>	<u>Water Hyacinth</u>	24	82.7
<i>Lemna minor</i>	Common Duckweed	11	37.9
<i>Ludwigia peploides</i>	Floating Primrose-Willow	1	3.4
<u>Myriophyllum spicatum</u>	<u>Eurasian watermilfoil</u>	2	6.8
<i>Najas minor</i>	Brittle naiad	1	3.4
<i>Nelumbo lutea</i>	American lotus	2	6.8
<i>Nitella</i> spp.	Stonewort	1	3.4
<i>Nymphaea odorata</i>	White Waterlily	9	31.0
<i>Nyssa aquatica</i>	Water Tupelo	2	6.8
<u>Oxycaryum cubense</u>	<u>Cuban bulrush</u>	10	34.4
<i>Polygonum</i> spp.	Smartweed	1	3.4
<i>Potamogeton nodosus</i>	American Pondweed	1	3.4
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	1	3.4
<i>Taxodium distichum</i>	Bald Cypress	9	31.0
<i>Typha</i> spp.	Cattail	*	-
<i>Utricularia</i> spp.	Bladderwort	1	3.4
	<b>Species Richness</b>	19	
	<b>Native Richness</b>	15	

Table 19. Plant species present in Lake Claude Bennett. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’7”	<b>Date Surveyed</b>	6/27/2017
<b>Secchi Down</b>	3’3”	<b>Total Pts. Sur</b>	20
<b>Littoral Depth</b>	8’9”	<b>Total Pts. Veg</b>	14
		<b>%-Littoral Veg</b>	70.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligatorweed</u>	12	60.0
<i>Cephalanthus occidentalis</i>	Buttonbush	4	20.0
<u>Colocasia esculenta</u>	<u>Wild Taro</u>	1	5.0
<i>Echinodorus cordifolius</i>	Creeping Burhead	1	5.0
<i>Eleocharis quadrangulata</i>	Squarestem Spikerush	1	5.0
<i>Eleocharis vivipara</i>	Viviparous Spikerush	2	10.0
<i>Ludwigia arcuata</i>	Piedmont Primrose-Willow	2	10.0
<i>Ludwigia peploides</i>	Floating Primrose-Willow	6	30.0
<i>Nymphaea odorata</i>	White Waterlily	*	-
<i>Platanus occidentalis</i>	American Sycamore	1	5.0
<i>Polygonum amphibium</i>	Water Knotweed	2	10.0
<i>Polygonum hydropiperoides</i>	Swamp Smartweed	2	10.0
<i>Potamogeton foliosus</i>	Leafy Pondweed	1	5.0
<i>Sagittaria graminea</i>	Grassy Arrowhead	7	35.0
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	1	5.0
<i>Taxodium distichum</i>	Bald Cypress	*	-
<i>Typha spp.</i>	Cattail	2	10.0
	<b>Species Richness</b>	17	
	<b>Native Richness</b>	15	

Table 20. Plant species present in Archusa Creek Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’11”	<b>Date Surveyed</b>	6/27/2017
<b>Secchi Down</b>	2’4”	<b>Total Pts. Sur</b>	35
<b>Littoral Depth</b>	6’6”	<b>Total Pts. Veg</b>	33
		<b>%-Littoral Veg</b>	94.2
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Brasenia schreberi</i>	Watershield	5	14.2
<i>Ceratophyllum demersum</i>	Coontail	3	8.5
<i>Chara</i> spp.	Chara	15	42.8
<u><i>Colocasia esculenta</i></u>	<u>Wild Taro</u>	*	-
<i>Eleocharis vivipara</i>	Viviparous Spikerush	2	5.7
<i>Hydrocotyle umbellata</i>	Manyflower Pennywort	1	2.8
<u><i>Myriophyllum aquaticum</i></u>	<u>Parrotfeather</u>	*	-
<i>Najas guadalupensis</i>	Southern Naiad	5	14.2
<i>Nitella</i> spp.	Stonewort	16	45.7
<i>Nymphaea odorata</i>	White Waterlily	3	8.5
<u><i>Panicum repens</i></u>	<u>Torpedograss</u>	9	25.7
<i>Potamogeton nodosus</i>	American Pondweed	*	-
<i>Saururus cernuus</i>	Lizard Tail	1	2.8
<i>Taxodium distichum</i>	Bald Cypress	1	2.8
<i>Typha</i> spp.	Cattail	*	-
<i>Utricularia</i> spp.	Bladderwort	13	37.1
	<b>Species Richness</b>	16	
	<b>Native Richness</b>	13	

Table 21. Plant species present in Clarkco Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’3”	<b>Date Surveyed</b>	6/27/2017
<b>Secchi Down</b>	3’8”	<b>Total Pts. Sur</b>	17
<b>Littoral Depth</b>	9’5”	<b>Total Pts. Veg</b>	10
		<b>%-Littoral Veg</b>	58.8
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	2	11.7
<i>Eleocharis vivipara</i>	Viviparous Spikerush	9	52.9
<i>Hydrocotyle umbellata</i>	Manyflower Pennywort	3	17.6
<i>Najas guadalupensis</i>	Southern naiad	1	5.8
<i>Nyssa aquatica</i>	Water Tupelo	3	17.6
<i>Rhynchospora corniculata</i>	Shortbristle Horned Beaksedge	*	-
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	2	11.7
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	*	-
<i>Sparganium americanum</i>	American Bur-reed	1	5.8
<i>Utricularia</i> spp.	Bladderwort	1	5.8
	<b>Species Richness</b>	10	
	<b>Native Richness</b>	9	

Table 22. Plant species present in Turkey Creek Reservoir. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’11”	<b>Date Surveyed</b>	6/28/2017
<b>Secchi Down</b>	4’4”	<b>Total Pts. Sur</b>	42
<b>Littoral Depth</b>	12’6”	<b>Total Pts. Veg</b>	40
		<b>%-Littoral Veg</b>	95
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	*	-
<i>Brasenia schreberi</i>	Watershield	26	61.9
<i>Chara spp.</i>	Chara	4	9.5
<i>Juncus effusus</i>	Common rush	*	-
<i>Nymphaea odorata</i>	White Waterlily	33	78.5
<i>Saururus cernuus</i>	Lizard's Tail	*	-
	<b>Species Richness</b>	6	
	<b>Native Richness</b>	5	

Table 23. Plant species present in Roosevelt Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	4'2"	<b>Date Surveyed</b>	6/28/2017
<b>Secchi Down</b>	4'11"	<b>Total Pts. Sur</b>	28
<b>Littoral Depth</b>	13'6"	<b>Total Pts. Veg</b>	15
		<b>%-Littoral Veg</b>	53.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	5	17.8
<i>Cephalanthus occidentalis</i>	Buttonbush	2	7.1
<u><i>Eichhornia crassipes</i></u>	<u>Water hyacinth</u>	2	7.1
<i>Eleocharis vivipara</i>	Viviparous Spikerush	4	14.3
<i>Fraxinus pennsylvanica</i>	Green ash	1	3.6
<i>Hydrolea quadrivalvis</i>	Waterpod	*	-
<i>Juncus effusus</i>	Common rush	1	3.6
<u><i>Myriophyllum aquaticum</i></u>	<u>Parrot feather</u>	*	-
<i>Najas guadalupensis</i>	Southern naiad	6	21.4
<i>Nyssa aquatica</i>	Water tupelo	*	-
<i>Peltandra virginica</i>	Green arrow arum	*	-
<i>Polygonum amphibium</i>	Water knotweed	*	-
<i>Polygonum hydropiperoides</i>	Swamp smartweed	*	-
<i>Sacciolepis striata</i>	American cupscale grass	*	-
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	*	-
<i>Saururus cernuus</i>	Lizard's Tail	1	3.6
<i>Taxodium distichum</i>	Bald cypress	*	-
<i>Typha spp.</i>	Cattail	*	-
	<b>Species Richness</b>	18	
	<b>Native Richness</b>	15	

Table 24. Plant species present in Lake Mary. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’6”	<b>Date Surveyed</b>	6/29/2017
<b>Secchi Down</b>	2’	<b>Total Pts. Sur</b>	14
<b>Littoral Depth</b>	5’5”	<b>Total Pts. Veg</b>	6
		<b>%-Littoral Veg</b>	42.8
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Fraxinus pennsylvanica</i>	Green ash	1	7.1
<i>Platanus occidentalis</i>	American sycamore	3	21.4
<i>Taxodium distichum</i>	Bald cypress	3	21.4
	<b>Species Richness</b>	3	
	<b>Native Richness</b>	3	

Table 25. Plant species present in Natchez Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’7”	<b>Date Surveyed</b>	6/29/2017
<b>Secchi Down</b>	3’	<b>Total Pts. Sur</b>	47
<b>Littoral Depth</b>	8’5”	<b>Total Pts. Veg</b>	19
		<b>%-Littoral Veg</b>	40.4
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligatorweed</u>	1	2.1
<i>Arundinaria gigantea</i>	Giant cane	1	2.1
<i>Cephalanthus occidentalis</i>	Buttonbush	1	2.1
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	*	-
<i>Juncus effusus</i>	Common rush	8	17
<i>Lindera benzoin</i>	Northern spicebush	*	-
<i>Liquidambar styraciflua</i>	Sweetgum	4	8.5
<i>Platanus occidentalis</i>	American sycamore	5	10.6
<i>Pluchea camphorata</i>	camphorweed	2	4.3
<i>Polygonum amphibium</i>	Water knotweed	5	10.6
<i>Polygonum hydropiperoides</i>	Swamp smartweed	1	2.1
<i>Saccharum giganteum</i>	Sugarcane plumegrass	2	4.3
<i>Saururus cernuus</i>	Lizard's Tail	1	2.1
<i>Typha spp.</i>	Cattail	*	-
	<b>Species Richness</b>	14	
	<b>Native Richness</b>	13	

Table 26. Plant species present in Calling Panther Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3’8”	<b>Date Surveyed</b>	6/30/2017
<b>Secchi Down</b>	4’4”	<b>Total Pts. Sur</b>	30
<b>Littoral Depth</b>	12’	<b>Total Pts. Veg</b>	14
		<b>%-Littoral Veg</b>	46.6
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	*	-
<i>Cephalanthus occidentalis</i>	Common buttonbush	6	20
<i>Eleocharis vivipara</i>	Viviparous spikerush	1	3.3
<i>Fraxinus pennsylvanica</i>	Greenash	1	3.3
<i>Juncus effusus</i>	Common rush	*	-
<i>Nelumbo lutea</i>	American lotus	*	-
<i>Nymphaea odorata</i>	American white waterlily	1	3.3
<i>Polygonum spp.</i>	Knotgrass	*	-
<i>Salix nigra</i>	Black willow	1	3.3
<i>Saururus cernuus</i>	Lizard's tail	4	13.3
<i>Scirpus cyperinus</i>	Woolgrass	1	3.3
<i>Typha spp.</i>	Cattail	2	6.7
	<b>Species Richness</b>	12	
	<b>Native Richness</b>	11	

Table 27. Plant species present in Simpson-Legion Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’8”	<b>Date Surveyed</b>	7/5/2017
<b>Secchi Down</b>	3’3”	<b>Total Pts. Sur</b>	23
<b>Littoral Depth</b>	9’	<b>Total Pts. Veg</b>	20
		<b>%-Littoral Veg</b>	86.9
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae</i> spp.	Filamentous algae	5	21.7
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	8	34.8
<i>Cephalanthus occidentalis</i>	Common buttonbush	7	30.4
<u><i>Cyperus esculentus</i></u>	<u>Yellow nutsedge</u>	1	4.3
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	6	26
<i>Juncus effusus</i>	Common rush	*	-
<i>Lindera benzoin</i>	Northern spicebush	4	17.4
<i>Ludwigia peploides</i>	Floating primrose-willow	1	4.3
<i>Nymphaea odorata</i>	American white waterlily	*	-
<u><i>Panicum repens</i></u>	<u>Torpedo grass</u>	10	4.3
<i>Peltandra virginica</i>	Green arrow arum	2	8.7
<i>Potamogeton diversifolius</i>	Waterthread pondweed	6	26
<i>Saccharum giganteum</i>	Sugarcane plumegrass	*	-
<i>Sagittaria latifolia</i>	broadleaf arrowhead	1	4.3
<i>Saururus cernuus</i>	Lizard's tail	1	4.3
<i>Sparganium americanum</i>	American bur-reed	*	-
<i>Taxodium distichum</i>	Bald cypress	1	4.3
<i>Typha</i> spp.	Cattail	*	-
	<b>Species Richness</b>	18	
	<b>Native Richness</b>	15	

Table 28. Plant species present in Lake Lincoln. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’8”	<b>Date Surveyed</b>	7/5/2017
<b>Secchi Down</b>	2’	<b>Total Pts. Sur</b>	42
<b>Littoral Depth</b>	5’6”	<b>Total Pts. Veg</b>	17
		<b>%-Littoral Veg</b>	40.4
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	9	21.4
<i>Baccharis halimifolia</i>	Eastern baccharis	1	2.3
<i>Bacopa caroliniana</i>	Blue waterhyssop	8	19
<i>Cephalanthus occidentalis</i>	Common buttonbush	3	7.1
<u><i>Colocasia esculenta</i></u>	<u>Wild taro</u>	5	11.9
<u><i>Eichhornia crassipes</i></u>	<u>Water hyacinth</u>	2	4.8
<i>Lindera benzoin</i>	Northern spicebush	1	2.3
<i>Nymphaea odorata</i>	American white waterlily	*	-
<i>Phragmites australis</i>	Common reed	3	7.1
<i>Rhynchospora corniculata</i>	Shortbristle horned beaksedge	1	2.3
<i>Saccharum giganteum</i>	Sugarcane plumegrass	8	19
<i>Sagittaria lancifolia</i>	Bulltongue arrowhead	2	4.8
<i>Saururus cernuus</i>	Lizard's tail	*	-
<i>Taxodium distichum</i>	Bald cypress	*	-
<i>Typha spp.</i>	Cattail	1	2.3
	<b>Species Richness</b>	15	
	<b>Native Richness</b>	12	

Table 29. Plant species present in Lake Tangipahoa. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1'9"	<b>Date Surveyed</b>	7/7/2017
<b>Secchi Down</b>	2'1"	<b>Total Pts. Sur</b>	48
<b>Littoral Depth</b>	5'9"	<b>Total Pts. Veg</b>	32
		<b>%-Littoral Veg</b>	66.6
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	11	22.9
<u><i>Eichhornia crassipes</i></u>	<u>Water hyacinth</u>	11	22.9
<i>Hydrocotyle ranunculoides</i>	Floating marshpennywort	5	10.4
<i>Justicia americana</i>	American water-willow	2	4.2
<i>Lemna spp.</i>	Duckweed	1	2.1
<i>Ludwigia peploides</i>	Floating primrose-willow	3	6.2
<u><i>Myriophyllum aquaticum</i></u>	<u>Parrotfeather</u>	1	2.1
<i>Nelumbo lutea</i>	American lotus	*	-
<i>Nuphar lutea</i>	Spatterdock	14	29.1
<i>Nymphaea odorata</i>	American white waterlily	2	4.2
<u><i>Oxycaryum cubense</i></u>	<u>Cuban bulrush</u>	1	2.1
<i>Panicum hemitomon</i>	Maidencane	12	25
<u><i>Panicum repens</i></u>	<u>Torpedo grass</u>	*	-
<i>Polygonum spp.</i>	Knotgrass	19	39.6
<i>Sacciolepis striata</i>	American cupscale	*	-
<i>Salix nigra</i>	Black willow	*	-
<i>Salvinia minima</i>	Water spangles	15	31.3
<i>Saururus cernuus</i>	Lizard's tail	2	4.2
	<b>Species Richness</b>	18	
	<b>Native Richness</b>	13	

Table 30. Plant species present in Lake Walthall. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	4'11"	<b>Date Surveyed</b>	7/7/2017
<b>Secchi Down</b>	5'9"	<b>Total Pts. Sur</b>	20
<b>Littoral Depth</b>	16'	<b>Total Pts. Veg</b>	16
		<b>%-Littoral Veg</b>	80
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	9	45
<i>Bacopa rotundifolia</i>	Disk waterhyssop	3	15
<i>Cephalanthus occidentalis</i>	Common buttonbush	5	25
<i>Eleocharis vivipara</i>	Viviparous spikerush	6	30
<i>Liquidambar styraciflua</i>	Sweetgum	2	10
<u><i>Panicum repens</i></u>	<u>Torpedo grass</u>	1	5
<i>Sacciolepis striata</i>	American cupscale	4	20
<i>Salix nigra</i>	Black willow	3	15
<i>Saururus cernuus</i>	Lizard's tail	1	5
<i>Scirpus cyperinus</i>	Woolgrass	2	10
<i>Sparganium americanum</i>	American bur-reed	1	5
<i>Taxodium distichum</i>	Bald cypress	2	10
	<b>Species Richness</b>	12	
	<b>Native Richness</b>	10	

Table 31. Plant species present in Lake Mary Crawford. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’2”	<b>Date Surveyed</b>	7/10/2017
<b>Secchi Down</b>	2’9”	<b>Total Pts. Sur</b>	26
<b>Littoral Depth</b>	7’5”	<b>Total Pts. Veg</b>	20
		<b>%-Littoral Veg</b>	76.9
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae</i> spp.	Filamentous algae	8	30.7
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	14	53.8
<i>Brasenia schreberi</i>	Watershield	1	3.9
<i>Cephalanthus occidentalis</i>	Common buttonbush	1	3.9
<u><i>Eichhornia crassipes</i></u>	<u>Water hyacinth</u>	12	46.2
<i>Juncus effusus</i>	Common rush	1	3.9
<i>Najas guadalupensis</i>	Southern waternymph	1	3.9
<i>Nelumbo lutea</i>	American lotus	1	3.9
<i>Nymphaea odorata</i>	American white waterlily	2	7.7
<u><i>Oxycaryum cubense</i></u>	<u>Cuban bulrush</u>	1	3.9
<u><i>Panicum repens</i></u>	<u>Torpedo grass</u>	9	34.6
<i>Polygonum</i> spp.	Knotgrass	1	3.9
<i>Sacciolepis striata</i>	American cupscale	1	3.9
<i>Sagittaria lancifolia</i>	Bulltongue arrowhead	4	15.4
<i>Salix nigra</i>	Black willow	2	7.7
<i>Salvinia minima</i>	Water spangles	3	11.5
<i>Scirpus cyperinus</i>	Woolgrass	*	-
<i>Typha</i> spp.	Cattail	13	50
	<b>Species Richness</b>	18	
	<b>Native Richness</b>	14	

Table 32. Plant species present in Lake Caroline. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’	<b>Date Surveyed</b>	7/10/2017
<b>Secchi Down</b>	2’4”	<b>Total Pts. Sur</b>	29
<b>Littoral Depth</b>	6’6”	<b>Total Pts. Veg</b>	3
		<b>%-Littoral Veg</b>	10.3
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	*	-
<i>Baccharis halimifolia</i>	Eastern baccharis	1	3.4
<i>Cephalanthus occidentalis</i>	Common buttonbush	*	-
<u><i>Colocasia esculenta</i></u>	<u>Wild taro</u>	3	10.3
<i>Juncus effusus</i>	Common rush	*	-
<u><i>Panicum repens</i></u>	<u>Torpedo grass</u>	*	-
<i>Sesbania herbacea</i>	Bigpod sesbania	*	-
<i>Typha spp.</i>	Cattail	*	-
	<b>Species Richness</b>	8	
	<b>Native Richness</b>	5	

Table 33. Plant species present in English Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’	<b>Date Surveyed</b>	7/11/2017
<b>Secchi Down</b>	2’2”	<b>Total Pts. Sur</b>	29
<b>Littoral Depth</b>	6’3”	<b>Total Pts. Veg</b>	3
		<b>%-Littoral Veg</b>	10.3
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i><u>Alternanthera philoxeroides</u></i>	<u>Alligatorweed</u>	4	13.8
<i>Digitaria spp.</i>	Crabgrass	2	6.9
<i>Eleocharis obtusa</i>	Blunt spikerush	2	6.9
<i>Eupatorium serotinum</i>	Lateflowering thoroughwort	1	3.4
<i>Ludwigia peploides</i>	Floating primrose-willow	1	3.4
<i><u>Oxycaryum cubense</u></i>	<u>Cuban bulrush</u>	*	-
<i>Polygonum spp.</i>	Knotweed	5	17.2
<i>Saccharum giganteum</i>	Sugarcane plumegrass	1	3.4
	<b>Species Richness</b>	8	
	<b>Native Richness</b>	6	

Table 34. Plant species present in Bee Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1’8”	<b>Date Surveyed</b>	7/11/2017
<b>Secchi Down</b>	1’10”	<b>Total Pts. Sur</b>	86
<b>Littoral Depth</b>	5’3”	<b>Total Pts. Veg</b>	77
		<b>%-Littoral Veg</b>	89.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligator weed</u>	13	15.1
<i>Callicarpa americana</i>	American beautyberry	1	1.1
<i>Carya aquatica</i>	Water hickory	3	3.5
<i>Cephalanthus occidentalis</i>	Common buttonbush	9	10.5
<i>Hibiscus laevis</i>	Halberdleaf rosemallow	7	8.1
<i>Hydrocotyle ranunculoides</i>	Floating marshpennywort	6	7
<i>Hydrolea quadrivalvis</i>	waterpod	*	-
<i>Justicia americana</i>	American water-willow	2	2.3
<i>Leersia oryzoides</i>	Rice cutgrass	2	2.3
<i>Lemna spp.</i>	Duckweed	4	4.7
<i>Ludwigia arcuata</i>	Piedmont primrose-willow	6	7
<i>Nelumbo lutea</i>	American lotus	*	-
<u>Oxycaryum cubense</u>	<u>Cuban bulrush</u>	1	1.1
<i>Polygonum spp.</i>	knotweed	2	2.3
<i>Rhynchospora corniculata</i>	Shortbristle horned beaksedge	1	1.1
<u>Sagittaria montevidensis</u>	<u>Giant arrowhead</u>	6	7
<i>Salix nigra</i>	Black willow	1	1.1
<i>Salvinia minima</i>	Water spangles	*	-
<i>Taxodium distichum</i>	Bald cypress	67	77.9
<i>Tillandsia usneoides</i>	Spanish moss	1	1.1
<i>Typha spp.</i>	Cattail	*	-
<i>Utricularia spp.</i>	Bladderwort	1	1.1
	<b>Species Richness</b>	22	
	<b>Native Richness</b>	19	

Table 35. Plant species present in Lake Washington. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	0’11”	<b>Date Surveyed</b>	7/12/2017
<b>Secchi Down</b>	1’1”	<b>Total Pts. Sur</b>	55
<b>Littoral Depth</b>	3’	<b>Total Pts. Veg</b>	38
		<b>%-Littoral Veg</b>	69.1
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Colocasia esculenta</i></u>	<u>Wild taro</u>	4	7.3
<i>Equisetum spp.</i>	Horsetail	*	-
<i>Platanus occidentalis</i>	American sycamore	3	5.5
<i>Saururus cernuus</i>	Lizard's tail	1	1.8
<i>Taxodium distichum</i>	Bald cypress	33	60
<i>Zizaniopsis miliacea</i>	Giant cutgrass	12	21.8
	<b>Species Richness</b>	6	
	<b>Native Richness</b>	5	

Table 36. Plant species present in Moon Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2’2”	<b>Date Surveyed</b>	7/12/2017
<b>Secchi Down</b>	2’6”	<b>Total Pts. Sur</b>	51
<b>Littoral Depth</b>	7’	<b>Total Pts. Veg</b>	39
		<b>%-Littoral Veg</b>	76.4
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	*	-
<i>Cephalanthus occidentalis</i>	Common buttonbush	8	15.7
<i>Crataegus spp.</i>	Hawthorn	2	3.9
<i>Digitaria spp.</i>	Crabgrass	*	-
<i>Hibiscus laevis</i>	Halberdleaf rosemallow	2	3.9
<i>Platanus occidentalis</i>	American sycamore	1	2
<i>Taxodium distichum</i>	Bald cypress	35	68.2
	<b>Species Richness</b>	7	
	<b>Native Richness</b>	6	

Table 37. Plant species present in Tippah County Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	3'3"	<b>Date Surveyed</b>	7/13/2017
<b>Secchi Down</b>	3'4"	<b>Total Pts. Sur</b>	37
<b>Littoral Depth</b>	9'10.5"	<b>Total Pts. Veg</b>	26
		<b>%-Littoral Veg</b>	70.2
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae</i> spp.	Filamentous algae	2	5.4
<u><i>Alternanthera philoxeroides</i></u>	<u>Alligator weed</u>	1	2.7
<i>Chara</i> spp.	Muskgrass	4	10.8
<i>Eleocharis vivipara</i>	Viviparous spikerush	13	35.1
<i>Juncus effusus</i>	Common rush	3	8.1
<i>Ludwigia palustris</i>	Marsh seedbox	1	2.7
<i>Ludwigia peploides</i>	Floating primrose-willow	7	18.9
<u><i>Panicum repens</i></u>	<u>Torpedo grass</u>	13	35.1
<i>Polygonum hydropiperoides</i>	Swamp smartweed	*	-
<i>Taxodium distichum</i>	Bald cypress	2	5.4
	<b>Species Richness</b>	10	
	<b>Native Richness</b>	8	

Table 38. Plant species present in Tombigbee Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	2'7"	<b>Date Surveyed</b>	7/25/2017
<b>Secchi Down</b>	2'11"	<b>Total Pts. Sur</b>	33
<b>Littoral Depth</b>	8'5"	<b>Total Pts. Veg</b>	29
		<b>%-Littoral Veg</b>	87.8
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Bacopa rotundifolia</i>	Disk waterhyssop	2	6.1
<i>Boehmeria cylindrica</i>	Smallspike false nettle	2	6.1
<i>Ceratophyllum demersum</i>	Coontail	7	21.2
<i>Chara spp.</i>	Muskgrass	3	9.1
<i>Juncus effusus</i>	Common rush	13	39.4
<i>Justicia americana</i>	American water-willow	20	60.6
<i>Ludwigia peploides</i>	Floating primrose-willow	3	9.1
<i>Panicum rigidulum</i>	Redtop panicgrass	3	9.1
<i>Polygonum spp.</i>	Knotweed	1	3
<i>Potamogeton foliosus</i>	Leafy pondweed	2	6.1
<i>Triadenum walteri</i>	Greater marsh St. Johnswort	12	36.4
	<b>Species Richness</b>	11	
	<b>Native Richness</b>	11	

Table 39. Plant species present in Elvis Presley Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	8'5"	<b>Date Surveyed</b>	7/26/2017
<b>Secchi Down</b>	8'9"	<b>Total Pts. Sur</b>	51
<b>Littoral Depth</b>	25'9"	<b>Total Pts. Veg</b>	47
		<b>%-Littoral Veg</b>	92.2
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Brasenia schreberi</i>	Watershield	*	
<i>Cephalanthus occidentalis</i>	Common buttonbush	2	3.9
<i>Chara spp.</i>	Muskgrass	46	90.2
<i>Echinodorus cordifolius</i>	Creeping burhead	1	1.9
<i>Eleocharis quadrangulata</i>	Squarestem spikerush	1	1.9
<i>Eleocharis vivipara</i>	Viviparous spikerush	3	5.9
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	*	-
<i>Hydrolea quadrivalvis</i>	Waterpod	1	1.9
<i>Juncus effusus</i>	Common rush	10	19.6
<i>Platanus occidentalis</i>	American sycamore	*	-
<i>Potamogeton diversifolius</i>	Waterthread pondweed	2	3.9
<i>Potamogeton foliosus</i>	Leafy pondweed	2	3.9
<i>Potamogeton nodosus</i>	Longleaf pondweed	4	7.8
<i>Sagittaria latifolia</i>	Broadleaf arrowhead	2	3.9
<u><i>Sagittaria montevidensis</i></u>	<u>Giant arrowhead</u>	*	-
<i>Scirpus cyperinus</i>	Woolgrass	*	-
	<b>Species Richness</b>	16	
	<b>Native Richness</b>	15	

Table 40. Plant species present in Lake Lamer Bruce. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	4'3"	<b>Date Surveyed</b>	7/26/2017
<b>Secchi Down</b>	4'9"	<b>Total Pts. Sur</b>	56
<b>Littoral Depth</b>	13'6"	<b>Total Pts. Veg</b>	31
		<b>%-Littoral Veg</b>	55.3
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Algae spp.</i>	Filamentous algae	3	5.3
<i>Acer rubrum</i>	Red maple	2	3.6
<i>Carya aquatica</i>	Water hickory	1	1.8
<i>Cephalanthus occidentalis</i>	Common buttonbush	20	35.7
<u><i>Cyperus esculentus</i></u>	<u>Yellow nutsedge</u>	1	1.8
<i>Eleocharis obtusa</i>	Blunt spikerush	1	1.8
<i>Eleocharis vivipara</i>	Viviparous spikerush	4	7.1
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	3	5.4
<i>Hydrolea quadrivalvis</i>	waterpod	3	5.4
<i>Juncus effusus</i>	Common rush	7	12.5
<i>Juncus spp.</i>	Rush	3	5.4
<i>Justicia americana</i>	American water-willow	*	*
<i>Leersia oryzoides</i>	Rice cutgrass	3	5.4
<i>Ludwigia peploides</i>	Floating primrose-willow	1	1.8
<i>Panicum spp.</i>	Panicgrass	1	1.8
<i>Potamogeton diversifolius</i>	Waterthread pondweed	3	5.4
<i>Saccharum giganteum</i>	Sugarcane plumegrass	*	*
<i>Sagittaria lancifolia</i>	Bulltongue arrowhead	*	*
<i>Saururus cernuus</i>	Lizard's Tail	5	8.9
<i>Scirpus cyperinus</i>	Woolgrass	1	1.8
<i>Sparganium americanum</i>	American bur-reed	*	*
<i>Taxodium distichum</i>	Bald cypress	3	5.4
	<b>Species Richness</b>	22	
	<b>Native Richness</b>	21	

Table 41. Plant species present in Kemper County Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	5'3"	<b>Date Surveyed</b>	7/31/2017
<b>Secchi Down</b>	5'9"	<b>Total Pts. Sur</b>	64
<b>Littoral Depth</b>	16'6"	<b>Total Pts. Veg</b>	57
		<b>%-Littoral Veg</b>	89.1
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Alternanthera philoxeroides</u>	<u>Alligator weed</u>	4	6.3
<i>Boehmeria cylindrica</i>	Smallspike false nettle	1	1.6
<i>Brasenia schreberi</i>	Watershield	6	9.4
<i>Dulichium arundinaceum</i>	Three-way sedge	4	6.3
<i>Echinodorus cordifolius</i>	Creeping burhead	7	10.9
<i>Eleocharis vivipara</i>	Viviparous spikerush	11	17.2
<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	1	1.6
<i>Hydrolea quadrivalvis</i>	Waterpod	1	1.6
<i>Juncus effusus</i>	Common rush	9	14.1
<i>Lindera benzoin</i>	Northern spicebush	25	39.1
<i>Ludwigia peploides</i>	Floating primrose-willow	6	9.4
<i>Nitella spp.</i>	Stonewort	4	6.3
<i>Nuphar lutea</i>	Spatterdock	3	4.7
<i>Nymphaea odorata</i>	American white waterlily	5	7.8
<u>Panicum repens</u>	<u>Torpedo grass</u>	5	7.8
<i>Potamogeton diversifolius</i>	Waterthread pondweed	2	3.1
<i>Potamogeton foliosus</i>	Leafy pondweed	24	37.5
<i>Sacciolepis striata</i>	American cupscale	1	1.6
<i>Sagittaria graminea</i>	Grassy arrowhead	3	4.7
<i>Sagittaria latifolia</i>	Broadleaf arrowhead	1	1.6
<i>Scirpus cyperinus</i>	Woolgrass	*	*
<i>Sparganium americanum</i>	American bur-reed	11	17.2
<i>Triadenum walteri</i>	Greater marsh St. Johnswort	1	1.6
<i>Typha spp.</i>	Cattail	1	1.6
<i>Utricularia spp.</i>	Bladderwort	11	17.2
	<b>Species Richness</b>	25	
	<b>Native Richness</b>	23	

Table 42. Plant species present in Anchor Lake. An ‘\*’ denotes the presence of a species in the waterbody while it was not present at any survey points. Species in **Bold** type are listed on the State and/or Federal Noxious Weed List; species that are underlined are non-native.

<b>Secchi Up</b>	1.6'	<b>Date Surveyed</b>	7/26/2017
<b>Secchi Down</b>	1.7'	<b>Total Pts. Sur</b>	8
<b>Littoral Depth</b>	10'	<b>Total Pts. Veg</b>	7
		<b>%-Littoral Veg</b>	87.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<u>Colocasia esculenta</u>	<u>Wild taro</u>	*	*
<i>Cephalanthus occidentalis</i>	Common buttonbush	*	*
<i>Ludwigia peploides</i>	Floating primrose-willow	1	14.3
<i>Juncus</i> spp.	Rush	*	*
<i>Najas guadalupensis</i>	Southern naiad	1	14.3
<u>Panicum repens</u>	<u>Torpedograss</u>	6	85.7
<i>Salix negra</i>	Black willow	1	14.3
<i>Scirpus</i> spp.	Bulrush	*	*
<u>Triadica sebifera</u>	<u>Chinese tallow</u>	1	14.3
<i>Taxodium distichum</i>	Bald cypress	2	28.6
<i>Typha</i> spp.	Cattail	*	*
	<b>Species Richness</b>	11	
	<b>Native Richness</b>	8	

Table 43. List of all species encountered during this survey. In the native status column, a ‘-’ indicates that the native status is not known.

Scientific Name	Common Native	Native Status	# of Lakes
<i>Acer rubrum</i>	Red maple	Native	1
<i>Algae spp.</i>	Algae	-	7
<i>Alternanthera philoxeroides</i>	Alligatorweed	Non-native	30
<i>Arundinaria gigantea</i>	Giant cane	Native	2
<i>Azolla caroliniana</i>	Carolina Mosquitofern	Native	1
<i>Baccharis halimifolia</i>	Eastern baccharis	Native	5
<i>Bacopa caroliniana</i>	Blue Waterhyssop	Native	4
<i>Bacopa spp.</i>	Waterhyssop	-	2
<i>Boehmeria cylindrica</i>	Smallspike false nettle	Native	2
<i>Brasenia schreberi</i>	Watershield	Native	16
<i>Callicarpa americana</i>	American beautyberry	Native	1
<i>Carex spp.</i>	Sedge	-	1
<i>Carya aquatica</i>	Water hickory	Native	2
<i>Cephalanthus occidentalis</i>	Common buttonbush	Native	21
<i>Ceratophyllum demersum</i>	Coontail	Native	10
<i>Chara spp.</i>	Chara	-	11
<i>Colocasia esculenta</i>	Wild Taro	Non-native	8
<i>Crataegus spp.</i>	Hawthorn	Native	1
<i>Cyperus esculentus</i>	Yellow nutsedge	Non-native	4
<i>Cyperus odoratus</i>	Fragrant flatsedge	Native	4
<i>Cyperus spp.</i>	Flatsedge	-	1
<i>Digitaria spp.</i>	Crabgrass	-	2
<i>Drepanocladus spp.</i>	Watermoss	-	1
<i>Dulichium arundinaceum</i>	Three-way sedge	Native	1
<i>Echinodorus cordifolius</i>	Creeping burhead	Native	5
<i>Eichhornia crassipes</i>	Water hyacinth	Non-native	8
<i>Eleocharis obtusa</i>	Blunt spikerush	Native	4
<i>Eleocharis quadrangulata</i>	Squarestem spikerush	Native	2
<i>Eleocharis spp.</i>	Spikerush	-	1
<i>Eleocharis vivipara</i>	Viviparous spikerush	Native	14
<i>Equisetum spp.</i>	Horsetail	-	2
<i>Eupatorium serotinum</i>	Lateflowering thoroughwort	Native	3
<i>Fraxinus pennsylvanica</i>	Green ash	Native	3
<i>Hibiscus laevis</i>	Halberdleaf rosemallow	Native	2
<i>Hibiscus moscheutos</i>	Crimsoneyed rosemallow	Native	1
<i>Hydrilla verticillata</i>	Hydrilla	Non-native	5
<i>Hydrocotyle ranunculoides</i>	Floating marshpennywort	Native	2
<i>Hydrocotyle spp.</i>	Pennywort	-	4

<i>Hydrocotyle umbellata</i>	Manyflower marshpennywort	Native	12
<i>Hydrolea quadrivalvis</i>	Waterpod	Native	6
<i>Juncus effusus</i>	Common rush	Native	15
<i>Juncus repens</i>	Lesser Creeping Rush	Native	3
<i>Juncus spp.</i>	Rush	-	3
<i>Justicia americana</i>	American water-willow	Native	6
<i>Leersia oryzoides</i>	Rice cutgrass	Native	2
<i>Lemna minor</i>	Common Duckweed	Native	3
<i>Lemna spp.</i>	Duckweed	-	3
<i>Limnobium spongia</i>	Frogsbit	Native	3
<i>Lindera benzoin</i>	Northern spicebush	Native	4
<i>Liquidambar styraciflua</i>	Sweetgum	Native	4
<i>Ludwigia arcuata</i>	Piedmont Primrose-Willow	Native	2
<i>Ludwigia palustris</i>	Marsh Seedbox	Native	3
<i>Ludwigia peploides</i>	Floating Primrose-Willow	Native	18
<i>Ludwigia spp.</i>	Primrose	Native	2
<i>Mayaca fluviatilis</i>	Stream Bogmoss	Native	1
<i>Myriophyllum aquaticum</i>	Parrot feather watermilfoil	Non-native	6
<i>Myriophyllum heterophyllum</i>	Variableleaf Watermilfoil	Native	1
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil	Non-native	3
<i>Najas guadalupensis</i>	Southern Naiad	Native	10
<i>Najas minor</i>	Brittle naiad	Non-native	12
<i>Nelumbo lutea</i>	American lotus	Native	11
<i>Nitella spp.</i>	Stonewort	-	7
<i>Nuphar lutea</i>	Spatterdock	Native	4
<i>Nymphaea odorata</i>	American white waterlily	Native	20
<i>Nyssa aquatica</i>	Water Tupelo	Native	4
<i>Oxycaryum cubense</i>	Cuban Bulrush	Non-native	7
<i>Panicum hemitomon</i>	Maidencane	Native	1
<i>Panicum repens</i>	Torpedo grass	Non-native	15
<i>Panicum rigidulum</i>	Redtop panicgrass	Native	1
<i>Panicum spp.</i>	Panicgrass	-	4
<i>Peltandra virginica</i>	Green arrow arum	Native	2
<i>Phragmites australis</i>	Common reed	Non-native	1
<i>Platanus occidentalis</i>	American Sycamore	Native	7
<i>Pluchea camphorata</i>	Camphorweed	Native	2
<i>Polygonum amphibium</i>	Water Knotweed	Native	3
<i>Polygonum hydropiperoides</i>	Swamp Smartweed	Native	7
<i>Polygonum pennsylvanicum</i>	Pennsylvania Smartweed	Native	1
<i>Polygonum spp.</i>	Knotweed	-	10
<i>Potamogeton crispus</i>	Curlyleaf pondweed	Non-Native	1

<i>Potamogeton diversifolius</i>	Waterthread pondweed	Native	8
<i>Potamogeton foliosus</i>	Leafy Pondweed	Native	10
<i>Potamogeton illinoensis</i>	Illinois pondweed	Native	2
<i>Potamogeton nodosus</i>	Longleaf pondweed	Native	6
<i>Quercus nigra</i>	Water Oak	Native	1
<i>Rhynchospora corniculata</i>	Shortbristle Horned Beaksedge	Native	5
<i>Saccharum giganteum</i>	Sugarcane plumegrass	Native	6
<i>Sacciolepis striata</i>	American cupscale	Native	5
<i>Sagittaria graminea</i>	Grassy Arrowhead	Native	3
<i>Sagittaria lancifolia</i>	Bulltongue Arrowhead	Native	11
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	Native	9
<i>Sagittaria montevidensis</i>	Giant arrowhead	Non-native	2
<i>Salix nigra</i>	Black Willow	Native	12
<i>Salvinia minima</i>	Waterspangles	Non-native	3
<i>Saururus cernuus</i>	Lizard's Tail	Native	17
<i>Scirpus cyperinus</i>	Woolgrass	Native	9
<i>Sesbania herbacea</i>	Bigpod sesbania	Native	1
<i>Sparganium americanum</i>	American bur-reed	Native	7
<i>Stuckenia pectinata</i>	Sago Pondweed	Native	4
<i>Taxodium distichum</i>	Bald Cypress	Native	19
<i>Tillandsia usneoides</i>	Spanish moss	Native	1
<i>Triadenum walteri</i>	Greater marsh St. Johnswort	Native	2
<i>Triadica sebifera</i>	Chinese tallow	Non-native	1
<i>Typha spp.</i>	Cattail	-	23
<i>Utricularia spp.</i>	Bladderwort	-	16
<i>Zizaniopsis miliacea</i>	Giant Cutgrass	Native	7



Figure 1: Location of 42 Mississippi waterbodies surveyed in June and July 2017.



Figure 2. Map of Lake Claude Bennett including survey and vegetated sites.

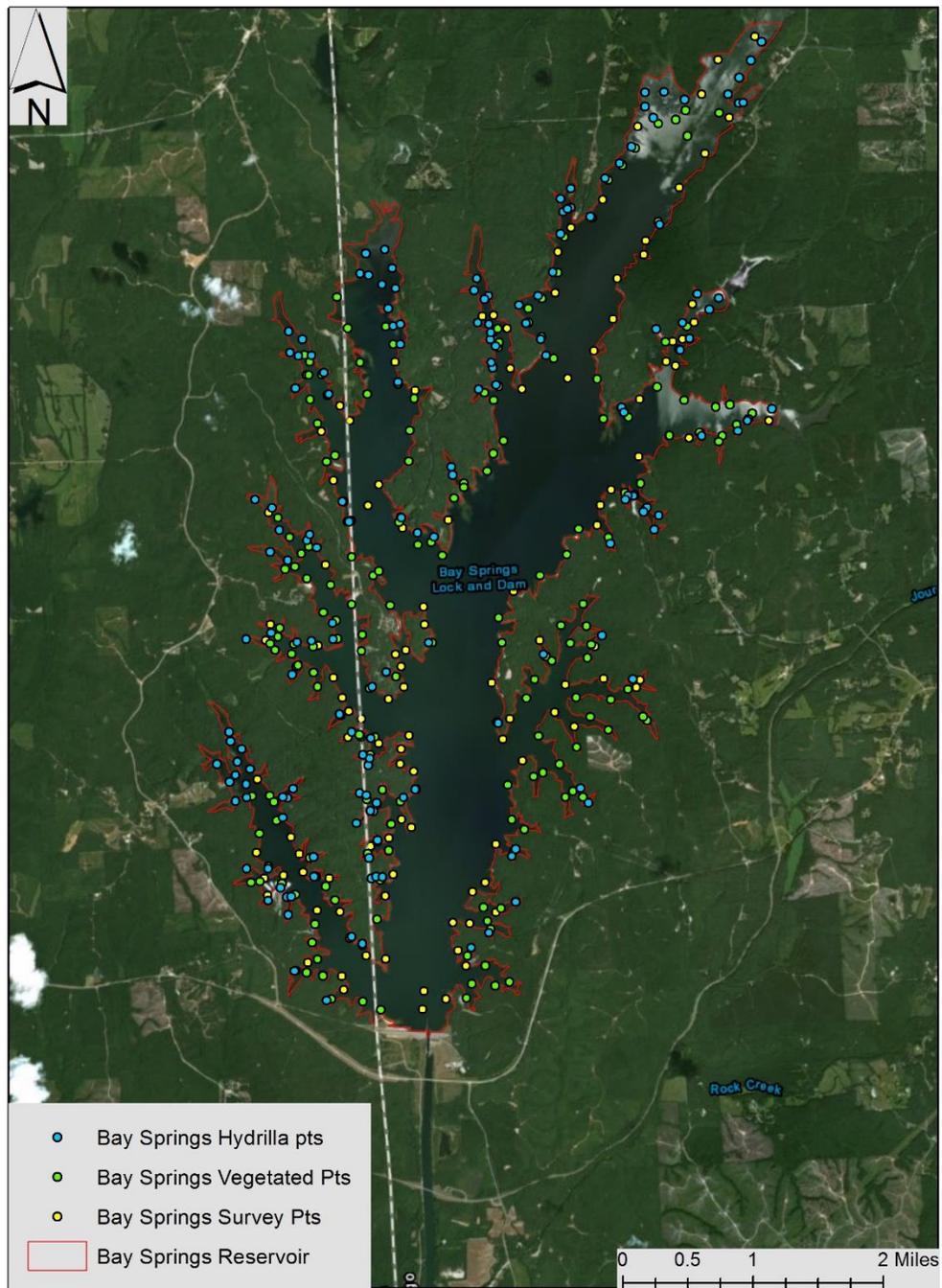


Figure 3. Map of Bay Springs reservoir including survey, vegetated, and hydrilla sites.

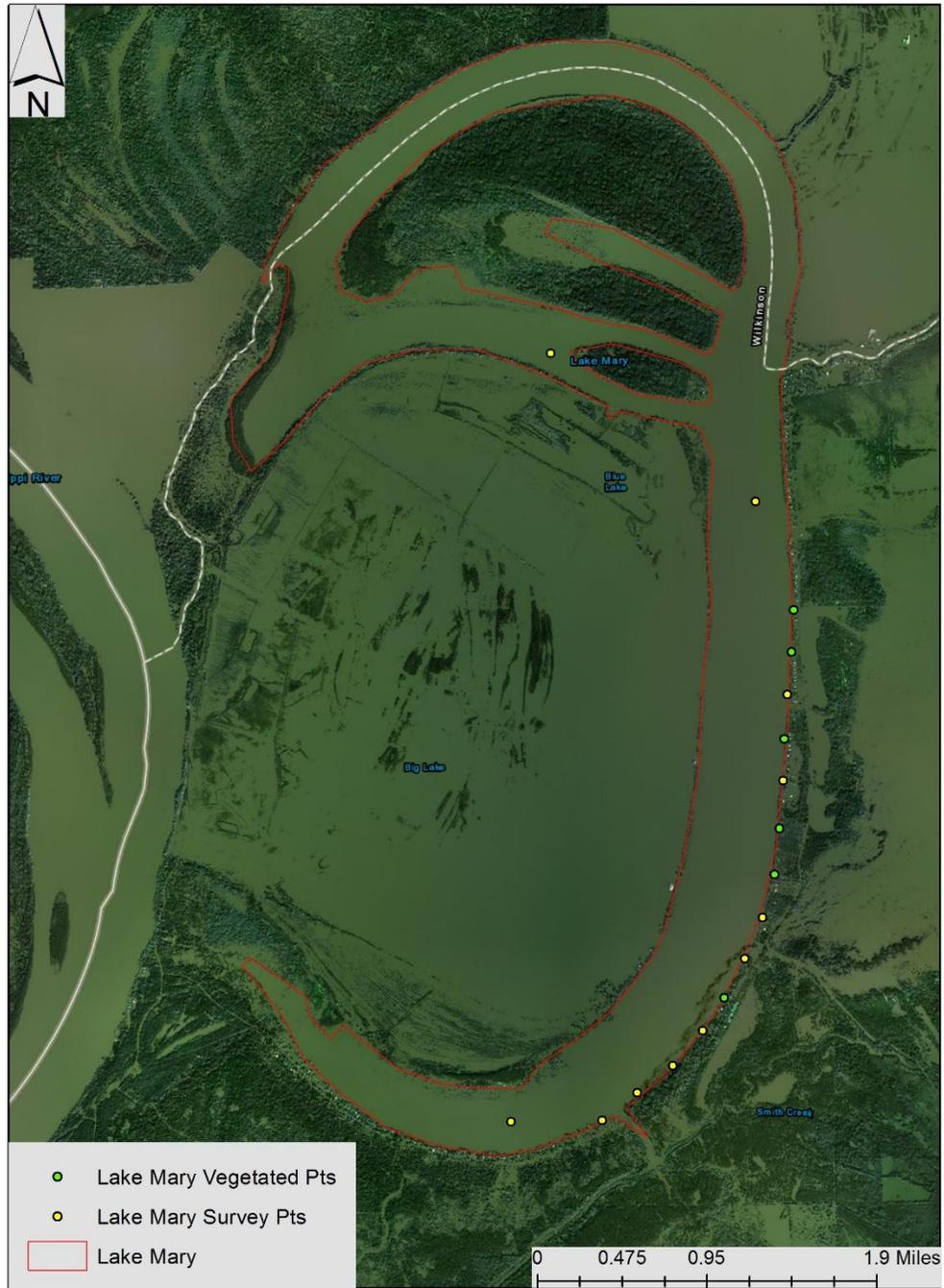


Figure 4. Map of Lake Mary including survey and vegetated sites.