

# 2023 Survey of Aquatic Plant Species in Mississippi Waterbodies



A report submitted to the Mississippi Aquatic Invasive Species Council

Samuel A. Schmid and Gray Turnage

Mississippi State University, Geosystems Research Institute

Mississippi State, MS 39762

GRI Report #5103

November 2023

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## Executive Summary

### Conclusions

- Of waterbodies surveyed (23 lakes and 6 rivers, 29 total), none had communities that consisted entirely of native species.
- Generally, macrophyte communities in rivers were more rich and diverse than those in lakes during this survey effort.
- Overall, 123 species were observed during the survey effort; of which, 17 were non-native and 36 were not previously observed.
- The three most widespread species were *Alternanthera philoxeroides*, *Panicum repens*, and *Triadica sebifera*. While *P. repens* (27 waterbodies) was present at more sites than *A. philoxeroides* (26 waterbodies), *A. philoxeroides* was on average more frequent within sites (41.4%) than *P. repens* (26.7%). *Triadica sebifera* was present at 21 waterbodies.
- *Alternanthera philoxeroides* and *Panicum repens* were each present in 21 lakes while *Triadica sebifera* was present in 16 lakes.
- *Alternanthera philoxeroides* was present in 5 rivers, *Panicum repens* was present in 6 rivers, and *Triadica sebifera* was present in 5 rivers.

### 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 colonize 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.

Cite as:

Schmid, S. A. and G. Turnage. 2023. 2023 survey of aquatic plant species in Mississippi waterbodies. Geosystems Research Institute., Mississippi State University. Mississippi State, MS. August 2023. GRI Report #5103. 51 pp.

## Introduction

The state of Mississippi (MS) has significant water resources that, many times, are impaired by invasive aquatic and wetland plant species. Impaired 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. The world's surface waters are dominated by small waterbodies (<250 acres; Downing et al. 2006). In the state of Mississippi, 192,050 acres are covered by small waterbodies (<100 acres; Neal and Willis 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 2023). 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 (Neal and Willis 2012).

Many waterbodies in the state that receive the highest amount of traffic are those owned and managed by the state of MS. The Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) and the Pat Harrison Waterway District are two state agencies that are responsible for managing state owned waterbodies in Mississippi. 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 operated by homeowner 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 have been found within the state: *Hydrilla verticillata* (Hydrilla or Waterthyme) and *Salvinia molesta* (giant salvinia). Additionally, torpedo grass (*Panicum repens*) and tallowtree (*Triadica sebifera*) are invasive species listed on the MS noxious weed but not the federal list; both species are known to cause localized problems in the waterbodies they infest.

This annual survey effort is the only to have been conducted on small to medium sized (100-7,500 acres) in Mississippi. Ongoing surveys will allow management bodies to annually track the spread of invasive species and provide information to resource managers for decision making purposes. Objective of this effort was to conduct surveys of aquatic vegetation targeted at rivers and small to medium size lakes in the southern half of Mississippi during the 2023 growing season.

## Methodology

### Survey methods

Water bodies were selected based on a combination of size, frequency of boat traffic, location within the state, and previous survey status. All waterbodies surveyed were within the geographic boundaries of the state of Mississippi. A total of 23 lakes and 6 rivers from five river basins were surveyed during June 2023 (Table 1; Loshbaugh et al. 2013). Surveyed waterbodies were located in the southern half of the state (Fig 1). Of the 29 waterbodies surveyed in 2023,

three had not been visited during previous survey efforts (Appendix 1; Turnage and Shoemaker 2018, Turnage et al. 2019, 2020).

Lakes were surveyed using point surveys of the littoral zone. Points were placed on a path that followed the shoreline. Survey points were taken by boat at intervals ranging from 100-1,000 m, depending on overall lake shoreline length. Similarly, rivers were surveyed by placing points a set channel distance (200-500m) apart with points alternating between right and left stream banks. In general, increased length of shoreline or stream bank 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. Macrophytes at each point were documented via species presence for all aquatic plants (angiosperms, ferns, lycophytes, marchantiophytes, and mosses) and charophytes (Wetzel 2001). All visible macrophytes within 3.05 m (10 ft) of any part of the boat were recorded. At each survey point, a plant rake was deployed to determine the presence and identity of submersed macrophytes. Macrophytes that were observed on a waterbody but not within a sampling point were noted. Macrophytes were primarily identified *in situ*, but when *in situ* identification was difficult, specimens were collected for later identification with a taxonomic key. Plant identification and naming convention followed Weakley et al. (2023) and charophyte naming convention followed Wehr et al. (2015). Most observations were identified to species, but in instances of cryptic species with inadequate diagnostic characteristics observations were reported at the genus level. Sixty-eight species were collected, pressed, dried, and deposited in the Mississippi State University Herbarium (MISSA) as voucher specimens.

### Macrophyte community statistics

Species lists for each waterbody were compiled, including total points surveyed, percent of littoral zone vegetated, points present, and the native/non-native status of each species. Species frequency and proportion were calculated for each species at each site and mean species richness, Shannon-Weiner Index, and Shannon Evenness were calculated for each waterbody as descriptive statistics of macrophyte communities. Species frequency and proportion both represent the prevalence of individual species in each community. Species frequencies were reported in species lists whereas species proportions were used to calculate Shannon-Weiner Indices. Mean species richness represents a measure of central tendency for number of different species at sample points in the same waterbody. Shannon-Weiner Index and Shannon Evenness correspond to species diversity and species evenness respectively. Said metrics were calculated using the following formulae:

Species Frequency<sup>1</sup> ( $F_i$ ):

$$F_i = \frac{n_i}{t}$$

Mean Species Richness<sup>2</sup> ( $\bar{x}_s$ ):

$$\bar{x}_s = \frac{N}{t}$$

Species Proportion<sup>3</sup> ( $p_i$ ):

$$p_i = \frac{n_i}{N}$$

Shannon-Weiner Index<sup>3</sup> ( $H'$ ):

$$H' = - \sum_{i=1}^s p_i \ln p_i$$

Shannon Evenness<sup>3</sup> ( $J$ ):

$$J = \frac{H'}{\ln s}$$

Definition of symbols:

$n_i$  = number of occurrences for species  $i$

$N$  = number of occurrences for all species

$t$  = number of survey points

$s$  = number of species in plant community (richness)

Notes:

<sup>1</sup>percent frequency =  $F_i \cdot 100$

<sup>2</sup> $\bar{x}_s$  refers to mean species richness of entire community whereas  $\bar{x}_{ns}$  and  $\bar{x}_{nns}$  refer to mean richness of native and non-native species respectively.

<sup>3</sup>formula retrieved from Gurevitch et al. (2002).

#### Notable taxonomic inconsistencies

*Eichhornia crassipes* (Mart.) Solms is the authority we use to refer to the plant commonly known as common waterhyacinth. Recent cladistic studies have rearranged Pontederiaceae and have lumped *Eichhornia* and other genera in with *Pontederia* (Pellegrini et al. 2018). For sake of consistency with previous reports, and since *Eichhornia crassipes* is more broadly cited in reputable sources, we continue to use this authority (Godfrey and Wooten 1979, Gleason and Cronquist 1991)

*Hypericum walteri* J.F.Gmel is the scientific name we use to refer to the plant commonly known as marsh St. Johnswort. Previous iterations of these reports refer to this species by the outdated name: *Triadenum walteri*.

*Oxycaryum cubense* Palla is the scientific name we use to refer to the plant commonly known as Cuban bulrush; an accepted synonym is *Scirpus cubensis*.

*Persicaria* Mill. is the scientific name we use to refer to the genus of plants commonly called knotweeds. Previous iterations of these reports refer to these plants by their outdated generic name: *Polygonum*.

*Triadica sebifera* (L.) Small is the scientific name we use to refer to the plant commonly known as tallowtree, popcorn tree, and Chinese tallow. This species is referred to as *Sapium sebiferum* in the Mississippi Noxious Weed List (Bureau of Plant Industry 2018).

## Results and Discussion

### Statewide

In total, 123 species were observed across all waterbodies in 2023. Of the 123 species, 36 of them were not observed in previous iterations of this survey (Appendix 2; Turnage and Shoemaker 2018, Turnage et al. 2019, 2020). The Pearl River delta had the most robust macrophyte community of rivers surveyed ( $s=36$ ,  $\bar{x}_s=8.64$ ,  $H'=3.19$ ,  $J=0.89$ ; Table 2). Archusa Creek Lake had the most robust macrophyte community of lakes surveyed ( $s=42$ ,  $\bar{x}_s=7.06$ ,  $H'=3.25$ ,  $J=0.87$ ; Table 2). Wolf River was the most depauperate river surveyed ( $s=24$ ,  $\bar{x}_s=4.44$ ,  $H'=2.65$ ,  $J=0.83$ ; Table 2). Lake Natchez was drawn down at time of survey which left its littoral zone functionally barren (Table 2). Aside from Lake Natchez, Dry Creek Lake was the most depauperate lake surveyed ( $s=15$ ,  $\bar{x}_s=2.00$ ,  $H'=1.54$ ,  $J=0.57$ ; Table 2). Of the 123 species observed in 2023, 17 were non-native. All waterbodies surveyed had non-native species present. The Pearl River delta ( $s_{nn}=10$ ,  $\bar{x}_{nns}=2.96$ ; Table 2) and Lake Tangipahoa ( $s_{nn}=8$ ,  $\bar{x}_{nns}=2.90$ ; Table 2) had the greatest prevalence of non-native species. Jourdan River ( $s_{nn}=6$ ,  $\bar{x}_{nns}=0.56$ ; Table 2) had the lowest non-native prevalence of rivers surveyed and Geiger Lake ( $s_{nn}=2$ ,  $\bar{x}_{nns}=0.11$ ; Table 2) had the lowest non-native prevalence of lakes surveyed. The three most common species surveyed were *Panicum repens*, *Alternanthera philoxeroides*, and *Triadica sebifera* which were found in 27 (93.1%), 26 (89.7%), and 21 (72.4%) waterbodies respectively. Notably, *P. repens* and *T. sebifera* are both listed as MS state noxious weeds. While *P. repens* was observed at more sites, its frequency (26.7%) was on average, lower than *A. philoxeroides* (41.4%). The most common native species were *Hypericum walteri* and *Zizaniopsis miliacea* which were both found at 20 (69.0%) waterbodies.

### Coastal Streams Basin

#### *Biloxi River*

Biloxi River (30.4425, -89.0089) was surveyed June 19-20, 2023. Biloxi River ranked 4<sup>th</sup> in species richness ( $s=36$ ) and 9<sup>th</sup> in mean species richness ( $\bar{x}_s=5.69$ ) (Table 2). It ranked 7<sup>th</sup> in species diversity ( $H'=2.95$ ) and 20<sup>th</sup> in species evenness ( $J=0.82$ ) (Table 2). The most frequent species were *Juncus roemerianus* (76.9%), *Sagittaria lancifolia* (61.5%), *Baccharis halimifolia* (53.8%), and *Pontederia cordata* (53.8%) (Table 3). There were no federal noxious weeds present in Biloxi River. Mississippi state noxious weeds present in Biloxi River were *Panicum repens* (26.9%) and *Triadica sebifera* (7.7%). Other non-native species included *Myriophyllum spicatum* (38.5%), *Alternanthera philoxeroides* (3.8%), and *Phragmites australis* (3.8%).

### *Jourdan River*

Jourdan River (30.3521, -89.4013) was surveyed June 22, 2023. Jourdan River ranked 15<sup>th</sup> in species richness ( $s=27$ ) and 11<sup>th</sup> in mean species richness ( $\bar{x}_s=5.52$ ) (Table 2). It ranked 20<sup>th</sup> in species diversity ( $H'=2.70$ ) and species evenness ( $J=0.82$ ) (Table 2). The most frequent species were *Juncus roemerianus* (80.0%), *Vallisneria americana* (64.0%), and *Sagittaria lancifolia* (56.0%) (Table 4). There were no federal noxious weeds present in Jourdan River. Mississippi state noxious weeds present in Jourdan River were *Panicum repens* (8.0%) and *Triadica sebifera* (8.0%) (Table 4). Other non-native species included *Alternanthera philoxeroides* (16.0%), *Myriophyllum spicatum* (12.0%), *Phragmites australis* (8.0%), and *Myriophyllum aquaticum* (4.0%) (Table 4).

### *Tchoutacabouffa River*

Tchoutacabouffa River (30.4510, -88.9579) was surveyed June 21, 2023. Tchoutacabouffa River ranked 6<sup>th</sup> in species richness ( $s=35$ ) and mean species richness ( $\bar{x}_s=6.14$ ) (Table 2). It ranked 6<sup>th</sup> in species diversity ( $H'=3.06$ ) and 10<sup>th</sup> in species evenness ( $J=0.86$ ) (Table 2). The most frequent species were *Juncus roemerianus* (68.6%), *Sagittaria lancifolia* (60.0%), and *Panicum repens* (54.3%) (Table 5). There were no federal noxious weeds present in Tchoutacabouffa River. Mississippi state noxious weeds present in Tchoutacabouffa River were *P. repens* and *Triadica sebifera* (2.9%) (Table 5). Other non-native species included *Alternanthera philoxeroides* (25.7%), *Myriophyllum spicatum* (25.7%), *Eichhornia crassipes* (5.7%), and *Ludwigia hexapetala* (2.9%) (Table 5).

### *Wolf River*

Wolf River (30.3673, -89.2558) was surveyed June 22, 2023. Wolf River ranked 22<sup>nd</sup> in species richness ( $s=24$ ) and 17<sup>th</sup> in mean species richness ( $\bar{x}_s=4.44$ ) (Table 2). It ranked 24<sup>th</sup> in species diversity ( $H'=2.65$ ) and 17<sup>th</sup> in species evenness ( $J=0.83$ ) (Table 2). The most frequent species were *Sagittaria lancifolia* (56.3%), *Salvinia minima* (50.0%), and *Juncus roemerianus* (43.8%) (Table 6). There were no federal noxious weeds present in Wolf River. Mississippi state noxious weeds present in Wolf River were *Panicum repens* (31.3%) and *Triadica sebifera* (9.4%) (Table 6). Other non-native species included *S. minima* and *Phragmites australis* (21.9%) (Table 6).

### Pascagoula River Basin

#### *Archusa Creek Lake*

Archusa Creek Lake (32.0338, -88.7137) was surveyed June 15, 2023. Archusa Creek Lake ranked 1<sup>st</sup> in species richness ( $s=42$ ) and 2<sup>nd</sup> in mean species richness ( $\bar{x}_s=7.06$ ) (Table 2). It ranked 1<sup>st</sup> in species diversity ( $H'=3.25$ ) and 8<sup>th</sup> in species evenness ( $J=0.87$ ) (Table 2). The most frequent species were *Nymphaea odorata* (58.8%), *Arundinaria gigantea* (50.0%), *Saururus cernuus* (50.0%), and *Hydrocotyle umbellata* (47.1%) (Table 7). There were no federal noxious weeds present in Archusa Creek Lake. Mississippi state noxious weeds present in Archusa Creek Lake were *Panicum repens* (23.5%) and *Triadica sebifera* (5.9%) (Table 7). Other non-native species included *Myriophyllum aquaticum* (17.6%), *Alternanthera philoxeroides* (14.7%), and *Colocasia esculenta* (5.9%) (Table 7).

### *Dry Creek Lake*

Dry Creek Lake (31.7507, -89.7327) was surveyed June 14, 2023. Dry Creek Lake ranked 27<sup>th</sup> in species richness ( $s=15$ ) and 28<sup>th</sup> in mean species richness ( $\bar{x}_s=2.00$ ) (Table 2). It ranked 28<sup>th</sup> in species diversity ( $H'=1.54$ ) and species evenness ( $J=0.57$ ) (Table 2). The most frequent species were *Alternanthera philoxeroides* (70.6%), *Cephalanthus occidentalis* (70.6%), and *Eleocharis vivipara* (29.4%) (Table 8). There were no federal noxious weeds present in Dry Creek Lake. Mississippi state noxious weeds present in Dry Creek Lake were *Panicum repens* (0.0%) and *Triadica sebifera* (0.0%) (Table 8). Other non-native species included *A. philoxeroides* (Table 8).

### *Flint Creek Reservoir*

Flint Creek Reservoir (30.8847, -89.1297) was surveyed June 27, 2023. Flint Creek Reservoir ranked 8<sup>th</sup> in species richness ( $s=31$ ) and 19<sup>th</sup> in mean species richness ( $\bar{x}_s=4.25$ ) (Table 2). It ranked 22<sup>nd</sup> in species diversity ( $H'=2.69$ ) and 27<sup>th</sup> in species evenness ( $J=0.78$ ) (Table 2). The most frequent species were *Bacopa caroliniana* (83.9%), *Juncus repens* (62.5%), *Eleocharis vivipara* (41.1%), and *Panicum hemitomon* (41.1%) (Table 9). There were no federal noxious weeds present in Flint Creek Reservoir. Mississippi state noxious weeds present in Flint Creek Reservoir were *Panicum repens* (8.9%) and *Triadica sebifera* (7.1%) (Table 9). Other non-native species included *Alternanthera philoxeroides* (12.5%), *Ludwigia peploides* (8.9%), and *Colocasia esculenta* (5.4%) (Table 9).

### *Geiger Lake*

Geiger Lake (31.1417, -89.2417) was surveyed June 27, 2023. Geiger Lake ranked 12<sup>th</sup> in species richness ( $s=28$ ) and 22<sup>nd</sup> in mean species richness ( $\bar{x}_s=4.06$ ) (Table 2). It ranked 22<sup>nd</sup> in species diversity ( $H'=2.69$ ) and 24<sup>th</sup> in species evenness ( $J=0.81$ ) (Table 2). The most frequent species were *Eleocharis vivipara* (88.6%), *Utricularia radiata* (48.6%), and *Brasenia schreberi* (45.7%) (Table 10). There were no federal noxious weeds present in Geiger Lake. Mississippi state noxious weeds present in Geiger Lake were *Panicum repens* (11.4%) and *Triadica sebifera* (0.0%) (Table 10). There were no other non-native species present in Geiger Lake.

### *Ivy Lake*

Ivy Lake (32.1013, -88.6927) was surveyed June 15, 2023. Ivy Lake ranked 17<sup>th</sup> in species richness ( $s=26$ ) and 14<sup>th</sup> in mean species richness ( $\bar{x}_s=5.13$ ) (Table 2). It ranked 7<sup>th</sup> in species diversity ( $H'=2.95$ ) and 2<sup>nd</sup> in species evenness ( $J=0.91$ ) (Table 2). The most frequent species were *Eleocharis vivipara* (73.3%), *Hydrocotyle umbellata* (60.0%), and *Potamogeton diversifolius* (33.3%) (Table 11). There were no federal noxious weeds present in Ivy Lake. The only Mississippi state noxious weed present in Ivy Lake was *Panicum repens* (20.0%) (Table 11). Other non-native species included *Alternanthera philoxeroides* (26.7%), *Myriophyllum aquaticum* (26.7%), and *Ludwigia peploides* (13.3%) (Table 11).

### *Lake Claude Bennett*

Lake Claude Bennett (32.1018, -89.0359) was surveyed June 14, 2023. Lake Claude Bennett ranked 19<sup>th</sup> in species richness ( $s=25$ ) and 25<sup>th</sup> in mean species richness ( $\bar{x}_s=3.64$ ) (Table 2). It ranked 19<sup>th</sup> in species diversity ( $H'=2.71$ ) and 13<sup>th</sup> in species evenness ( $J=0.84$ ) (Table 2). The



most frequent species were *Alternanthera philoxeroides* (90.9%), *Hypericum walteri* (40.9%), *Ludwigia peploides* (31.8%), and *Panicum repens* (31.8%) (Table 12). There were no federal noxious weeds present in Lake Claude Bennett. The only Mississippi state noxious weed present in Lake Claude Bennett was *P. repens* (Table 12). Other non-native species included *Alternanthera philoxeroides* and *Ludwigia peploides* (Table 12).

#### *Lake Eddins*

Lake Eddins (32.0478, -88.9624) was surveyed June 13, 2023. Lake Eddins ranked 24<sup>th</sup> in species richness ( $s=23$ ) and 18<sup>th</sup> in mean species richness ( $\bar{x}_s=4.31$ ) (Table 2). It ranked 14<sup>th</sup> in species diversity ( $H'=2.75$ ) and 6<sup>th</sup> in species evenness ( $J=0.88$ ) (Table 2). The most frequent species were *Colocasia esculenta* (73.1%), *Panicum repens* (57.7%), and *Triadica sebifera* (38.5%) (Table 13). There were no federal noxious weeds present in Lake Eddins. Mississippi state noxious weeds present in Lake Eddins were *P. repens* and *T. sebifera* (Table 13). Other non-native species included *C. esculenta*, *Alternanthera philoxeroides* (30.8%), *Ludwigia hexapetala* (19.2%), *Ludwigia peploides* (7.7%), *Mentha aquatica* (7.7%), and *Pontederia crassipes* (7.7%) (Table 13).

#### *Lake Mike Conner*

Lake Mike Conner (31.5753, -89.6489) was surveyed June 14, 2023. Lake Mike Conner ranked 25<sup>th</sup> in species richness ( $s=23$ ) and 24<sup>th</sup> in mean species richness ( $\bar{x}_s=3.88$ ) (Table 2). It ranked 14<sup>th</sup> in species diversity ( $H'=2.75$ ) and 6<sup>th</sup> in species evenness ( $J=0.88$ ) (Table 2). The most frequent species were *Hydrocotyle umbellata* (57.7%), *Panicum repens* (53.8%), and *Saururus cernuus* (46.2%) (Table 14). There were no federal noxious weeds present in Lake Mike Conner. Mississippi state noxious weeds present in Lake Mike Conner were *P. repens* and *Triadica sebifera* (19.2%) (Table 14). Other non-native species included *Alternanthera philoxeroides* (34.6%) and *Ludwigia peploides* (7.7%) (Table 14).

#### *Lake Perry*

Lake Perry (31.1323, -88.9039) was surveyed June 28, 2023. Lake Perry ranked 9<sup>th</sup> in species richness ( $s=31$ ) and 13<sup>th</sup> in mean species richness ( $\bar{x}_s=5.36$ ) (Table 2). It ranked 9<sup>th</sup> in species diversity ( $H'=2.94$ ) and 10<sup>th</sup> in species evenness ( $J=0.86$ ) (Table 2). The most frequent species were *Eleocharis vivipara* (90.9%), *Cyrilla racemiflora* (54.5%), and *Sparganium americanum* (45.5%) (Table 15). There were no federal noxious weeds present in Lake Perry. The only Mississippi state noxious weed present in Lake Perry was *Panicum repens* (18.2%). Other non-native species included *Alternanthera philoxeroides* (22.7%), *Ludwigia peploides* (9.1%), and *Oxycaryum cubense* (4.5%) (Table 15).

#### *Maynor Creek Lake*

Maynor Creek Lake (31.6542, -88.7161) was surveyed June 12, 2023. Maynor Creek Lake ranked 20<sup>th</sup> in species richness ( $s=25$ ) and 16<sup>th</sup> in mean species richness ( $\bar{x}_s=3.88$ ) (Table 2). It ranked 25<sup>th</sup> in species diversity ( $H'=2.54$ ) and 26<sup>th</sup> in species evenness ( $J=0.79$ ) (Table 2). The most frequent species were *Eleocharis vivipara* (75.0%), *Nymphaea odorata* (66.7%), and *Brasenia schreberi* (63.9%) (Table 16). There were no federal noxious weeds present in Maynor Creek Lake. The only Mississippi state noxious weed present in Maynor Creek Lake was

*Panicum repens* (55.6%) (Table 16). Other non-native species included *Ludwigia hexapetala* (47.2%) and *Alternanthera philoxeroides* (16.7%) (Table 16).

#### *Pascagoula River Delta*

The Pascagoula River Delta (30.4129, -88.5838) was surveyed June 23, 2023. Pascagoula River Delta ranked 3<sup>rd</sup> in species richness ( $s=40$ ) and 4<sup>th</sup> in mean species richness ( $\bar{x}_s=6.74$ ) (Table 2). It ranked 5<sup>th</sup> in species diversity ( $H'=3.11$ ) and 13<sup>th</sup> in species evenness ( $J=0.84$ ) (Table 2). The most frequent species were *Juncus roemerianus* (62.8%), *Salvinia minima* (60.5%), *Salvinia molesta* (60.5%) and *Zizania aquatica* (46.5%) (Table 17). The only federal noxious weed present in the Pascagoula River Delta was *S. molesta* (Table 17). Mississippi state noxious weeds present in Pascagoula River Delta were *Panicum repens* (14.0%) and *Triadica sebifera* (2.3%) (Table 17). Other non-native species included *S. minima*, *Alternanthera philoxeroides* (37.2%), *Oxycaryum cubense* (27.9%), *Eichhornia crassipes* (27.9%), *Phragmites australis* (25.6%), *Myriophyllum spicatum* (18.6%), *Ludwigia peploides* (4.7%), and *Myriophyllum aquaticum* (4.7%) (Table 17).

#### *Prentiss Walker Lake* (formerly Lake Ross Barnett)

Prentiss Walker Lake (31.8298, -89.5919) was surveyed June 14, 2023. Prentiss Walker Lake ranked 23<sup>rd</sup> in species richness ( $s=24$ ) and 23<sup>rd</sup> in mean species richness ( $\bar{x}_s=4.00$ ) (Table 2). It ranked 13<sup>th</sup> in species diversity ( $H'=2.76$ ) and 8<sup>th</sup> in species evenness ( $J=0.87$ ) (Table 2). The most frequent species were *Alternanthera philoxeroides* (78.3%), *Hydrocotyle umbellata* (39.1%), and *Sparganium americanum* (34.8%) (Table 18). There were no federal noxious weeds present in Prentiss Walker Lake. Mississippi state noxious weeds present in Prentiss Walker Lake were *Panicum repens* (4.3%) and *Triadica sebifera* (4.3%) (Table 18). Other non-native species included *A. philoxeroides*, and *Ludwigia peploides* (8.7%) (Table 18).

#### *Turkey Fork Reservoir*

Turkey Fork Reservoir (31.3449, -88.7023) was surveyed June 28, 2023. Turkey Fork Reservoir ranked 2<sup>nd</sup> in species richness ( $s=41$ ) and 3<sup>rd</sup> in mean species richness ( $\bar{x}_s=6.86$ ) (Table 2). It ranked 2<sup>nd</sup> in species diversity ( $H'=3.24$ ) and 1<sup>st</sup> in species evenness ( $J=0.97$ ) (Table 2). The most frequent species were *Panicum repens* (95.5%), *Eleocharis vivipara* (68.2%), *Alternanthera philoxeroides* (40.9%), and *Nymphaea odorata* (40.9%) (Table 19). There were no federal noxious weeds present in Turkey Fork Reservoir. Mississippi state noxious weeds present in Turkey Fork Reservoir were *P. repens* and *Triadica sebifera* (4.5%) (Table 19). Other non-native species included *A. philoxeroides*, *Eichhornia crassipes* (22.7%), *Ludwigia peploides* (4.5%), and *Salvinia minima* (0.0%; was observed *in situ* but not present at survey points) (Table 19).

#### Pearl River Basin

##### *Lake Bill Waller*

Lake Bill Waller (31.1953, -89.7187) was surveyed June 26, 2023. Lake Bill Waller ranked 13<sup>th</sup> in species richness ( $s=28$ ) and 5<sup>th</sup> in mean species richness ( $\bar{x}_s=6.59$ ) (Table 2). It ranked 12<sup>th</sup> in species diversity ( $H'=2.79$ ) and 13<sup>th</sup> in species evenness ( $J=0.84$ ) (Table 2). The most frequent

species were *Nymphaea odorata* (90.9%), *Brasenia schreberi* (77.3%), *Eleocharis vivipara* (68.2%), and *Myriophyllum heterophyllum* (68.2%) (Table 20). The only federal noxious weed present in Lake Bill Waller was *Salvinia molesta* (0.0%; was observed *in situ* but not present at survey points) (Table 20). Mississippi state noxious weeds present in Lake Bill Waller was *Panicum repens* (59.1%) (Table 20). Other non-native species included *Alternanthera philoxeroides* (27.3%) and *Typha angustifolia* (4.5%) (Table 20).

#### *Lake Columbia*

Lake Columbia (31.1868, -89.7360) was surveyed June 26, 2023. Lake Columbia ranked 14<sup>th</sup> in species richness ( $s=28$ ) and 12<sup>th</sup> in mean species richness ( $\bar{x}_s=5.41$ ) (Table 2). It ranked 18<sup>th</sup> in species diversity ( $H'=2.72$ ) and 20<sup>th</sup> in species evenness ( $J=0.82$ ) (Table 2). The most frequent species were *Brasenia schreberi* (90.9%), *Myriophyllum heterophyllum* (90.9%), *Typha latifolia* (59.1%), *Eleocharis vivipara* (45.5%), and *Nymphaea odorata* (45.5%) (Table 21). There were no federal noxious weeds present in Lake Columbia. Mississippi state noxious weeds present in Lake Columbia were *Panicum repens* (9.1%) and *Triadica sebifera* (4.5%) (Table 21). Other non-native species included *Alternanthera philoxeroides* (18.2%) and *Ludwigia peploides* (4.5%) (Table 21).

#### *Lake Lincoln*

Lake Lincoln (31.6831, -90.3565) was surveyed June 7, 2023. Lake Lincoln ranked 11<sup>th</sup> in species richness ( $s=30$ ) and 8<sup>th</sup> in mean species richness ( $\bar{x}_s=6.08$ ) (Table 2). It ranked 11<sup>th</sup> in species diversity ( $H'=2.88$ ) and 12<sup>th</sup> in species evenness ( $J=0.85$ ) (Table 2). The most frequent species were *Hypericum walteri* (81.1%), *Juncus effusus* (62.2%), and *Alternanthera philoxeroides* (59.5%) (Table 22). There were no federal noxious weeds present in Lake Lincoln. Mississippi state noxious weeds present in Lake Lincoln were *Triadica sebifera* (18.9%) and *Panicum repens* (13.5%) (Table 22). Other non-native species included *A. philoxeroides*, *Colocasia esculenta* (43.2%), *Eichhornia crassipes* (16.2%), and *Ludwigia peploides* (8.1%) (Table 22).

#### *Lake Mary Crawford*

Lake Mary Crawford (31.5771, -90.1583) was surveyed June 9, 2023. Lake Mary Crawford ranked 26<sup>th</sup> in species richness ( $s=21$ ) and mean species richness ( $\bar{x}_s=3.53$ ) (Table 2). It ranked 26<sup>th</sup> in species diversity ( $H'=2.49$ ) and 20<sup>th</sup> in species evenness ( $J=0.82$ ) (Table 2). The most frequent species were *Nelumbo lutea* (52.6%), *Cephalanthus occidentalis* (47.4%), and *Alternanthera philoxeroides* (42.1%) (Table 23). There were no federal noxious weeds present in Lake Mary Crawford. Mississippi state noxious weeds present in Lake Mary Crawford were *Panicum repens* (36.8%) and *Triadica sebifera* (0.0%) (Table 23). Other non-native species included *A. philoxeroides*, *Ludwigia peploides* (36.8%), and *Eichhornia crassipes* (0.0%) (Table 23).

#### *Lake Walthall*

Lake Walthall (31.0626, -90.1322) was surveyed June 6, 2023. Lake Walthall ranked 28<sup>th</sup> in species richness ( $s=14$ ) and 21<sup>st</sup> in mean species richness ( $\bar{x}_s=4.13$ ) (Table 2). It ranked 27<sup>th</sup> in species diversity ( $H'=2.19$ ) and 17<sup>th</sup> in species evenness ( $J=0.83$ ) (Table 2). The most frequent

species were *Cephalanthus occidentalis* (80%), *Eleocharis vivipara* (73.3%), and *Taxodium distichum* (60.0%) (Table 24). There were no federal noxious weeds present in Lake Walthall. There were no Mississippi state noxious weeds present in Lake Walthall. The only non-native species in Lake Walthall was *Alternanthera philoxeroides* (53.3%) (Table 24).

#### *Pearl River Delta*

Pearl River Delta (30.2591, -89.6251) was surveyed June 20, 2023. Pearl River Delta ranked 5<sup>th</sup> in species richness ( $s=36$ ) and 1<sup>st</sup> in mean species richness ( $\bar{x}_s=8.64$ ) (Table 2). It ranked 3<sup>rd</sup> in species diversity ( $H'=3.19$ ) and 5<sup>th</sup> in species evenness ( $J=0.89$ ) (Table 2). The most frequent species were *Nuphar advena* (78.6%), *Ceratophyllum demersum* (60.7%), *Ludwigia peploides* (60.7%), *Alternanthera philoxeroides* (57.1%), *Cabomba caroliniana* (57.1%), and *Salvinia minima* (57.1%) (Table 25). There were no federal noxious weeds present in Pearl River Delta. Mississippi state noxious weeds present in Pearl River Delta were *Panicum repens* (14.3%) and *Triadica sebifera* (3.6%) (Table 25). Other non-native species included *L. peploides*, *A. philoxeroides*, *S. minima*, *Phragmites australis* (46.4%), *Eichhornia crassipes* (42.9%), *Oxycaryum cubense* (10.7%), *Myriophyllum spicatum* (3.6%), and *Colocasia esculenta* (0.0%) (Table 25).

#### *Simpson County Lake*

Simpson County Lake (31.9123, -89.7900) was surveyed June 9, 2023. Simpson County Lake ranked 16<sup>th</sup> in species richness ( $s=27$ ) and 10<sup>th</sup> in mean species richness ( $\bar{x}_s=5.63$ ) (Table 2). It ranked 16<sup>th</sup> in species diversity ( $H'=2.74$ ) and 17<sup>th</sup> in species evenness ( $J=0.83$ ) (Table 2). The most frequent species were *Alternanthera philoxeroides* (95.8%), *Eleocharis vivipara* (75.0%), and *Juncus effusus* (70.8%) (Table 26). There were no federal noxious weeds present in Simpson County Lake. The only Mississippi state noxious weed present in Simpson County Lake was *Panicum repens* (54.2%) (Table 26). Other non-native species included *A. philoxeroides*, and *Ludwigia peploides* (4.2%) (Table 26).

#### Southwest Mississippi Basin

##### *Calling Panther Lake*

Calling Panther Lake (31.9814, -90.4737) was surveyed June 7, 2023. Calling Panther Lake ranked 21<sup>st</sup> in species richness ( $s=25$ ) and 27<sup>th</sup> in mean species richness ( $\bar{x}_s=3.42$ ) (Table 2). It ranked 20<sup>th</sup> in species diversity ( $H'=2.70$ ) and 13<sup>th</sup> in species evenness ( $J=0.84$ ) (Table 2). The most frequent species were *Hypericum walteri* (63.2%), *Juncus effusus* (44.7%), and *Zizaniopsis miliacea* (34.2%) (Table 27). There were no federal noxious weeds present in Calling Panther Lake. Mississippi state noxious weeds present in Calling Panther Lake were *Panicum repens* (2.6%) and *Triadica sebifera* (0.0%) (Table 27). Other non-native species included *Ludwigia peploides* (26.3%), and *Alternanthera philoxeroides* (5.3%) (Table 27).

##### *Lake Natchez*

Lake Natchez (31.5938, -91.2082) was surveyed on June 8, 2023. Lake Natchez was undergoing management that included an active drawdown. With the historical littoral zone exposed and high turbidity as result of the drawdown, the littoral zone was void of species (Table 28). Species

richness was 2 but all sample points had no species which rendered zero for all other macrophyte community metrics. Natchez lake ranks 29<sup>th</sup> for all macrophyte community metrics (Table 2). There were no non-native species observed at Lake Natchez.

### *Lake Tangipahoa*

Lake Tangipahoa (31.1852, -90.5237) was surveyed June 6, 2023. Lake Tangipahoa ranked 10<sup>th</sup> in species richness ( $s=31$ ) and 7<sup>th</sup> in mean species richness ( $\bar{x}_s=6.10$ ) (Table 2). It ranked 16<sup>th</sup> in species diversity ( $H'=2.74$ ) and 25<sup>th</sup> in species evenness ( $J=0.80$ ) (Table 2). The most frequent species were *Eichhornia crassipes* (95.0%), *Alternanthera philoxeroides* (92.5%), *Bacopa caroliniana* (47.5%), and *Nuphar advena* (47.5%) (Table 29). Federal noxious weeds present in Lake Tangipahoa was *Salvinia molesta* (2.5%) (Table 29). Mississippi state noxious weeds present in Lake Tangipahoa were *Panicum repens* (2.5%) and *Triadica sebifera* (0.0%) (Table 29). Other non-native species included *P. crassipes*, *A. philoxeroides*, *Salvinia minima* (57.5%), *Oxycaryum cubense* (27.5%), and *Ludwigia peploides* (12.5%) (Table 29).

### *Okhissa Lake*

Okhissa Lake (31.4187, -90.8311) was surveyed June 5, 2023. Okhissa Lake ranked 18<sup>th</sup> in species richness ( $s=26$ ) and 20<sup>th</sup> in mean species richness ( $\bar{x}_s=4.21$ ) (Table 2). It ranked 10<sup>th</sup> in species diversity ( $H'=2.93$ ) and 3<sup>rd</sup> in species evenness ( $J=0.90$ ) (Table 2). The most frequent species were *Zizaniopsis miliacea* (58.3%), *Salvinia molesta* (45.8%), and *Juncus effusus* (37.5%) (Table 30). Federal noxious weeds present in Okhissa Lake were *S. molesta* and *Hydrilla verticillata* (12.5%) (Table 30). Mississippi state noxious weeds present in Okhissa Lake were *Panicum repens* (8.3%) and *Triadica sebifera* (8.3%) (Table 30). Other non-native species included *Alternanthera philoxeroides* (29.2%), *Myriophyllum aquaticum* (16.7%), *Ludwigia peploides* (8.3%), and *Najas minor* (4.2%) (Table 30).

### Tombigbee River Basin

#### *Lake Tom Bailey*

Lake Tom Bailey (32.4240, -88.5211) was surveyed June 16, 2023. Lake Tom Bailey ranked 7<sup>th</sup> in species richness ( $s=34$ ) and 15<sup>th</sup> in mean species richness ( $\bar{x}_s=5.12$ ) (Table 2). It ranked 3<sup>rd</sup> in species diversity ( $H'=3.19$ ) and species evenness ( $J=0.90$ ) (Table 2). The most frequent species were *Alternanthera philoxeroides* (64.0%), *Alnus serrulata* (36.0%), *Hypericum walteri* (36.0%), and *Hydrocotyle umbellata* (32.0%) (Table 31). The only federal noxious weeds present in Lake Tom Bailey was *Salvinia molesta* (8.0%) (Table 31). Mississippi state noxious weeds present in Lake Tom Bailey were *Panicum repens* (20.0%) and *Triadica sebifera* (20.0%) (Table 31). Other non-native species included *A. philoxeroides* and *Ludwigia peploides* (16.0%) (Table 31).

### **Acknowledgements**

We thank Joseph Kauppi for assistance with surveys and collections and Dr. Ryan Folk and his team at the Mississippi State University Herbarium (MISSA) for help processing and storing voucher specimens collected from this survey effort. This work was funded by the Mississippi Aquatic Invasive Species Council through Mississippi Department of Environmental Quality from a grant provided by the US Fish and Wildlife Service.

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## Tables and Figures

Table 1. Geographic characteristics of water bodies surveyed during June 2023.

Site Name	Area (ac)	Latitude	Longitude	Sample Points ( <i>t</i> )	River/Streams Basin	Lentic/Lotic
Biloxi River		30.4425	-89.0089	26	Coastal Streams	Lotic
Jourdan River		30.3521	-89.4013	25	Coastal Streams	Lotic
Tchoutacabouffa River		30.4510	-88.9579	35	Coastal Streams	Lotic
Wolf River		30.3673	-89.2558	32	Coastal Streams	Lotic
Archusa Creek Lake	2167	32.0338	-88.7137	34	Pascagoula River	Lentic
Dry Creek Lake	33	31.7507	-89.7327	17	Pascagoula River	Lentic
Flint Creek Reservoir	555	30.8847	-89.1297	58	Pascagoula River	Lentic
Geiger Lake	274	31.1417	-89.2417	35	Pascagoula River	Lentic
Ivy Lake	48	32.1013	-88.6927	15	Pascagoula River	Lentic
Lake Claude Bennett	74	32.1018	-89.0359	22	Pascagoula River	Lentic
Lake Eddins	654	32.0478	-88.9624	27	Pascagoula River	Lentic
Lake Mike Conner	82	31.5753	-89.6489	27	Pascagoula River	Lentic
Lake Perry	73	31.1323	-88.9039	22	Pascagoula River	Lentic
Maynor Creek Lake	450	31.6542	-88.7161	36	Pascagoula River	Lentic
Pascagoula River Delta		30.4129	-88.5838	43	Pascagoula River	Lotic
Prentiss Walker Lake	81	31.8298	-89.5919	25	Pascagoula River	Lentic
Turkey Fork Reservoir	250	31.3449	-88.7023	23	Pascagoula River	Lentic
Lake Bill Waller	166	31.1953	-89.7187	23	Pearl River	Lentic
Lake Columbia	95	31.1868	-89.7360	22	Pearl River	Lentic
Lake Lincoln	450	31.6831	-90.3565	40	Pearl River	Lentic
Lake Mary Crawford	136	31.5771	-90.1583	19	Pearl River	Lentic
Lake Walthall	48	31.0626	-90.1322	15	Pearl River	Lentic
Pearl River Delta		30.2591	-89.6251	28	Pearl River	Lotic
Simpson County Lake	76	31.9163	-89.7900	24	Pearl River	Lentic
Calling Panther Lake	399	31.9814	-90.4737	39	Southwest Mississippi	Lentic
Lake Natchez	198	31.5938	-91.2082	17	Southwest Mississippi	Lentic
Lake Tangipahoa	493	31.1852	-90.5237	40	Southwest Mississippi	Lentic
Okhissa Lake	999	31.4187	-90.8311	25	Southwest Mississippi	Lentic
Lake Tom Bailey	179	32.4240	-88.5211	25	Tombigbee River	Lentic



Table 2. Macrophyte community metrics of water bodies surveyed during June 2023.

Site Name	Richness			Mean Richness			Diversity	Evenness
	Total ( $s$ )	Non- Native ( $s_{nn}$ )	Native ( $s_n$ )	Total ( $\bar{x}_s$ )	Non- Native ( $\bar{x}_{nns}$ )	Native ( $\bar{x}_{ns}$ )	Shannon- Weiner Index ( $H'$ )	Shannon Evenness ( $J$ )
Biloxi River	36	5	31	5.69	0.81	4.88	2.95	0.82
Jourdan River	27	6	21	5.52	0.56	4.96	2.70	0.82
Tchoutacabouffa River	35	6	29	6.14	1.17	4.97	3.06	0.86
Wolf River	24	4	20	4.44	1.13	3.31	2.65	0.83
Archusa Creek Lake	42	5	37	7.06	0.68	6.38	3.25	0.87
Dry Creek Lake	15	3	12	2.00	0.71	1.29	1.54	0.57
Flint Creek Reservoir	31	4	27	4.25	0.34	3.91	2.69	0.78
Geiger Lake	28	2	26	4.06	0.11	3.94	2.69	0.81
Ivy Lake	26	3	23	5.13	0.73	4.40	2.95	0.91
Lake Claude Bennett	25	2	23	3.64	1.23	2.41	2.71	0.84
Lake Eddins	23	7	16	4.31	2.35	1.96	2.75	0.88
Lake Mike Conner	23	3	20	3.88	1.08	2.81	2.75	0.88
Lake Perry	31	3	28	5.36	0.45	4.91	2.94	0.86
Maynor Creek Lake	25	3	22	4.97	1.19	3.78	2.54	0.79
Pascagoula River Delta	40	10	30	6.74	2.14	4.60	3.11	0.84
Prentiss Walker Lake	24	3	21	4.00	0.87	3.13	2.76	0.87
Turkey Fork Reservoir	41	5	36	6.86	0.91	5.95	3.24	0.97
Lake Bill Waller	28	4	24	6.59	0.91	5.68	2.79	0.84
Lake Columbia	28	3	25	5.41	0.32	5.09	2.72	0.82
Lake Lincoln	30	5	25	6.08	1.35	4.73	2.88	0.85
Lake Mary Crawford	21	4	17	3.53	0.58	2.95	2.49	0.82
Lake Walthall	14	1	13	4.13	0.53	3.60	2.19	0.83
Pearl River Delta	36	9	27	8.64	2.00	6.64	3.19	0.89
Simpson County Lake	27	2	25	5.63	1.50	4.13	2.74	0.83
Calling Panther Lake	25	3	22	3.42	0.34	3.08	2.70	0.84
Lake Natchez	2	0	2	0.00	0.00	0.00	0.00	0.00
Lake Tangipahoa	31	7	24	6.10	1.95	4.15	2.74	0.80
Okhissa Lake	26	7	19	4.21	1.25	2.96	2.93	0.90
Lake Tom Bailey	34	4	30	5.12	1.12	4.00	3.19	0.90

Table 3. Macrophyte community of the Biloxi River. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Biloxi River</b>			
<b>Species Richness</b>	36	<b>Date Surveyed</b>	Jun 19-20, 2023
<b>Native Species Richness</b>	31	<b>Total Pts. Sur</b>	26
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	1	3.8
<i>Arundinaria gigantea</i>	river cane	1	3.8
<i>Baccharis halimifolia</i>	groundseltree	14	53.8
<i>Bolboschoenus robustus</i>	sturdy bulrush	1	3.8
<i>Cabomba caroliniana</i>	carolina fanwort	2	7.7
<i>Ceratophyllum demersum</i>	coontail	2	7.7
<i>Cicuta maculata</i>	water hemlock	0	0.0
<i>Cladium mariscus</i>	swamp sawgrass	10	38.5
<i>Crinum americanum</i>	southern swamp crinum	0	0.0
<i>Cyperus sp.</i>	nutsedge	1	3.8
<i>Eleocharis sp.</i>	spikerush	1	3.8
<i>Hydrocotyle umbellata</i>	marsh pennywort	1	3.8
<i>Hypericum sp.</i>	St. Johnswort	2	7.7
<i>Itea virginica</i>	Virginia sweetspire	0	0.0
<i>Juncus roemerianus</i>	black needlerush	20	76.9
<i>Lythrum lineare</i>	saltmarsh loosestrife	0	0.0
<i>Myriophyllum spicatum</i>	<b>Eurasian watermilfoil</b>	10	38.5
<i>Najas guadalupensis</i>	southern naiad	3	11.5
<i>Nuphar advena</i>	spatterdock	6	23.1
<i>Nyssa biflora</i>	swamp tupelo	0	0.0
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	7	26.9
<i>Peltandra virginica</i>	green arrow arum	5	19.2
<i>Phragmites australis</i>	<b>common reed</b>	1	3.8
<i>Pontederia cordata</i>	pickerelweed	14	53.8
<i>Sabal minor</i>	dwarf palmetto	3	11.5
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	16	61.5
<i>Salix nigra</i>	black willow	0	0.0
<i>Samolus parviflorus</i>	water pimpernel	1	3.8
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	2	7.7
<i>Sporobolus sp.</i>	dropseed	4	15.4
<i>Taxodium distichum</i>	baldcypress	4	15.4
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	2	7.7

<i>Typha latifolia</i>	broadleaf cattail	1	3.8
<i>Vallisneria americana</i>	eelgrass	8	30.8
<i>Zizania aquatica</i>	southern wild rice	4	15.4
<i>Zizaniopsis miliacea</i>	giant cutgrass	1	3.8

Table 4. Macrophyte community of the Jourdan River. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Jourdan River</b>			
<b>Species Richness</b>	27	<b>Date Surveyed</b>	June 22, 2023
<b>Native Species Richness</b>	21	<b>Total Pts. Sur</b>	25
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	alligator weed	4	16.0
<i>Baccharis halimifolia</i>	groundseltree	9	36.0
<i>Bolboschoenus robustus</i>	sturdy bulrush	1	4.0
<i>Cabomba caroliniana</i>	carolina fanwort	6	24.0
<i>Ceratophyllum demersum</i>	coontail	1	4.0
<i>Cicuta maculata</i>	water hemlock	1	4.0
<i>Cladium mariscus</i>	swamp sawgrass	4	16.0
<i>Crinum americanum</i>	southern swamp crinum	0	0.0
<i>Juncus roemerianus</i>	black needlerush	20	80.0
<i>Lythrum lineare</i>	saltmarsh loosestrife	0	0.0
<i>Myriophyllum aquaticum</i>	parrotfeather	1	4.0
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	3	12.0
<i>Najas guadalupensis</i>	southern naiad	1	4.0
<i>Nymphaea odorata</i>	white waterlily	0	0.0
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	2	8.0
<i>Phragmites australis</i>	common reed	2	8.0
<i>Pontederia cordata</i>	pickerelweed	5	20.0
<i>Sabal minor</i>	dwarf palmetto	2	8.0
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	14	56.0
<i>Salvinia minima</i>	waterspangles	2	8.0
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	13	52.0
<i>Sporobolus sp.</i>	dropseed	18	72.0
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	2	8.0
<i>Typha domingensis</i>	southern cattail	2	8.0
<i>Typha latifolia</i>	broadleaf cattail	0	0.0
<i>Vallisneria americana</i>	eelgrass	16	64.0
<i>Zizania aquatica</i>	southern wild rice	9	36.0

Table 5. Macrophyte community of the Tchoutacabouffa River. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Tchoutacabouffa River</b>			
<b>Species Richness</b>	35	<b>Date Surveyed</b>	June 21, 2023
<b>Native Species Richness</b>	29	<b>Total Pts. Sur</b>	35
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	9	25.7
<i>Baccharis halimifolia</i>	groundseltree	10	28.6
<i>Bacopa monnieri</i>	herb-of-grace	1	2.9
<i>Bolboschoenus robustus</i>	sturdy bulrush	1	2.9
<i>Cabomba caroliniana</i>	carolina fanwort	4	11.4
<i>Ceratophyllum demersum</i>	coontail	9	25.7
<i>Cicuta maculata</i>	water hemlock	3	8.6
<i>Cladium mariscus</i>	swamp sawgrass	8	22.9
<i>Crinum americanum</i>	southern swamp crinum	5	14.3
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	2	5.7
<i>Hydrocotyle umbellata</i>	marsh pennywort	1	2.9
<i>Juncus roemerianus</i>	black needlerush	24	68.6
<i>Juncus sp.</i>	rush	1	2.9
<i>Liquidambar styraciflau</i>	sweetgum	0	0.0
<i>Ludwigia hexapetala</i>	<b>six-petal waterprimrose</b>	1	2.9
<i>Lythrum lineare</i>	saltmarsh loosestrife	0	0.0
<i>Myriophyllum spicatum</i>	<b>Eurasian watermilfoil</b>	9	25.7
<i>Najas guadalupensis</i>	southern naiad	11	31.4
<i>Nitella sp.</i>	nitella	11	31.4
<i>Panicum repens</i>	<b>torpedograss</b>	19	54.3
<i>Peltandra virginica</i>	green arrow arum	3	8.6
<i>Persicaria sp.</i>	knotweed	1	2.9
<i>Phragmites australis</i>	common reed	1	2.9
<i>Pontederia cordata</i>	pickerelweed	15	42.9
<i>Sabal minor</i>	dwarf palmetto	4	11.4
<i>Sabatia calycina</i>	coastal rosegentian	3	8.6
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	21	60.0
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	9	25.7
<i>Sporobolus sp.</i>	dropseed	3	8.6
<i>Stuckenia pectinata</i>	sago pondweed	2	5.7
<i>Taxodium distichum</i>	baldcypress	0	0.0
<i>Triadica sebifera</i>	<b>tallowtree</b>	1	2.9
<i>Typha domingensis</i>	southern cattail	1	2.9
<i>Vallisneria americana</i>	eelgrass	9	25.7
<i>Zizania aquatica</i>	southern wild rice	13	37.1

Table 6. Macrophyte community of the Wolf River. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Wolf River</b>			
<b>Species Richness</b>	24	<b>Date Surveyed</b>	June 22, 2023
<b>Native Species Richness</b>	20	<b>Total Pts. Sur</b>	32
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Baccharis halimifolia</i>	groundseltree	8	25.0
<i>Cephalanthus occidentalis</i>	buttonbush	0	0.0
<i>Cicuta maculata</i>	water hemlock	1	3.1
<i>Cladium mariscus</i>	swamp sawgrass	8	25.0
<i>Crinum americanum</i>	southern swamp crinum	1	3.1
<i>Itea virginica</i>	Virginia sweetspire	0	0.0
<i>Juncus roemerianus</i>	black needlerush	14	43.8
<i>Juncus sp.</i>	rush	1	3.1
<i>Lemna minor</i>	lesser duckweed	0	0.0
<i>Nuphar advena</i>	spatterdock	3	9.4
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	10	31.3
<b><i>Phragmites australis</i></b>	<b>common reed</b>	7	21.9
<i>Pontederia cordata</i>	pickerelweed	10	31.3
<i>Sabal minor</i>	dwarf palmetto	2	6.3
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	18	56.3
<b><i>Salvinia minima</i></b>	<b>waterspangles</b>	16	50.0
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	7	21.9
<i>Sporobolus sp.</i>	dropseed	13	40.6
<i>Taxodium ascendens</i>	pondcypress	0	0.0
<i>Taxodium distichum</i>	baldcypress	0	0.0
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	3	9.4
<i>Typha domingensis</i>	southern cattail	4	12.5
<i>Vallisneria americana</i>	eelgrass	1	3.1
<i>Zizania aquatica</i>	southern wild rice	15	46.9

Table 7. Macrophyte community of Archusa Creek Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Archusa Creek Lake</b>			
<b>Littoral Depth</b>	13.2'	<b>Date Surveyed</b>	June 15, 2023
<b>Species Richness</b>	42	<b>Total Pts. Sur</b>	34
<b>Native Species Richness</b>	37	<b>Total Pts. Veg</b>	34
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alnus serrulata</i>	smooth alder	12	35.3
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	5	14.7
<i>Arundinaria gigantea</i>	river cane	17	50.0
<i>Brasenia schreberi</i>	watershield	8	23.5
<i>Cabomba caroliniana</i>	carolina fanwort	1	2.9
<i>Cephalanthus occidentalis</i>	buttonbush	3	8.8
<i>Chara sp.</i>	muskgrass	11	32.4
<i>Colocasia esculenta</i>	<b>taro</b>	2	5.9
<i>Cyrilla racemiflora</i>	swamp titi	5	14.7
<i>Eleocharis obtusa</i>	blunt spikerush	1	2.9
<i>Eleocharis quadrangulata</i>	square-stem spikerush	1	2.9
<i>Eleocharis vivipara</i>	hairgrass	6	17.6
<i>Hydrocotyle umbellata</i>	marsh pennywort	16	47.1
<i>Hydrolea uniflora</i>	oneflower false fiddleleaf	1	2.9
<i>Hypericum mutillum</i>	dwarf St. Johnswort	1	2.9
<i>Hypericum sp.</i>	St. Johnswort	1	2.9
<i>Hypericum walteri</i>	marsh St. Johnswort	15	44.1
<i>Itea virginica</i>	Virginia sweetspire	0	0.0
<i>Juncus effusus</i>	soft rush	14	41.2
<i>Juncus repens</i>	creeping rush	1	2.9
<i>Liquidambar styraciflora</i>	sweetgum	0	0.0
<i>Ludwigia sp.</i>	waterprimrose	2	5.9
<i>Myriophyllum aquaticum</i>	<b>parrotfeather</b>	6	17.6
<i>Najas guadalupensis</i>	southern naiad	2	5.9
<i>Nymphaea odorata</i>	white waterlily	20	58.8
<i>Nyssa biflora</i>	swamp tupelo	0	0.0
<i>Panicum repens</i>	<b>torpedograss</b>	8	23.5
<i>Peltandra virginica</i>	green arrow arum	15	44.1
<i>Potamogeton diversifolius</i>	waterthread pondweed	4	11.8
<i>Potamogeton nodosus</i>	American pondweed	8	23.5
<i>Rhynchospora sp.</i>	beaksedge	3	8.8

<i>Rotala sp.</i>	rotala	1	2.9
<i>Sagittaria latifolia</i>	broadleaf arrowhead	4	11.8
<i>Saururus cernuus</i>	lizard's tail	17	50.0
<i>Scirpus cyperinus</i>	woolgrass	1	2.9
<i>Taxodium distichum</i>	baldecypress	5	14.7
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	2	5.9
<i>Tripsacum dactyloides</i>	eastern gamagrass	1	2.9
<i>Typha latifolia</i>	broadleaf cattail	2	5.9
<i>Utricularia gibba</i>	humped bladderwort	0	0.0
<i>Utricularia sp.</i>	bladderwort	12	35.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	6	17.6



Table 8. Macrophyte community of Dry Creek Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Dry Creek Lake</b>			
<b>Littoral Depth</b>	19.8'	<b>Date Surveyed</b>	June 14, 2023
<b>Species Richness</b>	15	<b>Total Pts. Sur</b>	17
<b>Native Species Richness</b>	12	<b>Total Pts. Veg</b>	17
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	12	70.6
<i>Arundinaria gigantea</i>	river cane	0	0.0
<i>Cephalanthus occidentalis</i>	buttonbush	12	70.6
<i>Dulichium arundinaceum</i>	threeway sedge	0	0.0
<i>Echinodorus cordifolius</i>	creeping burhead	1	5.9
<i>Eleocharis vivipara</i>	hairgrass	5	29.4
<i>Hypericum walteri</i>	marsh St. Johnswort	0	0.0
<i>Juncus repens</i>	creeping rush	1	5.9
<i>Liquidambar styraciflaur</i>	sweetgum	1	5.9
<i>Lychnothamnus barbatus</i>		1	5.9
<i>Orontium aquaticum</i>	goldenclub	0	0.0
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	0	0.0
<i>Salix nigra</i>	black willow	1	5.9
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	0	0.0
<i>Typha latifolia</i>	broadleaf cattail	0	0.0

Table 9. Macrophyte community of Flint Creek Reservoir. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with ‘0’ for points present indicates it was present at site but was not observed at any survey points.

Flint Creek Reservoir			
Littoral Depth	15.0'	Date Surveyed	June 27, 2023
Species Richness	31	Total Pts. Sur	58
Native Species Richness	27	Total Pts. Veg	56
		%-Littoral Veg	96.6
Scientific Name	Common Name	# Pts. Present	%-Frequency
<i>Alternanthera philoxeroides</i>	alligator weed	7	12.5
<i>Arundinaria gigantea</i>	river cane	1	1.8
<i>Bacopa caroliniana</i>	waterhyssop	47	83.9
<i>Brasenia schreberi</i>	watershield	0	0.0
<i>Carex sp.</i>	sedge	1	1.8
<i>Chara sp.</i>	muskgrass	4	7.1
<i>Colocasia esculenta</i>	taro	3	5.4
<i>Cyperus sp.</i>	nutsedge	1	1.8
<i>Cyrilla racemiflora</i>	swamp titi	21	37.5
<i>Echinodorus cordifolius</i>	creeping burhead	1	1.8
<i>Eleocharis vivipara</i>	hairgrass	23	41.1
<i>Hydrocotyle ranunculoides</i>	floating pennywort	1	1.8
<i>Hydrocotyle umbellata</i>	marsh pennywort	15	26.8
<i>Hypericum walteri</i>	marsh St. Johnswort	3	5.4
<i>Juncus effusus</i>	soft rush	9	16.1
<i>Juncus repens</i>	creeping rush	35	62.5
<i>Juncus sp.</i>	rush	1	1.8
<i>Ludwigia peploides</i>	floating waterprimrose	5	8.9
<i>Mayaca fluviatilis</i>	bog moss	7	12.5
<i>Nitella sp.</i>	nitella	6	10.7
<i>Nyssa biflora</i>	swamp tupelo	0	0.0
<i>Panicum hemitomon</i>	maiden cane	23	41.1
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	5	8.9
<i>Peltandra virginica</i>	green arrow arum	4	7.1
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	2	3.6
<i>Sagittaria papillosa</i>	nipplebract arrowhead	1	1.8
<i>Scirpus cyperinus</i>	woolgrass	0	0.0
<i>Taxodium distichum</i>	baldcypress	3	5.4
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	4	7.1
<i>Xyris difformis</i>	bog yelloweyed grass	4	7.1
<i>Zizaniopsis miliacea</i>	giant cutgrass	1	1.8

Table 10. Macrophyte community of Geiger Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Geiger Lake</b>			
<b>Littoral Depth</b>	13.8'	<b>Date Surveyed</b>	June 27, 2023
<b>Species Richness</b>	28	<b>Total Pts. Sur</b>	35
<b>Native Species Richness</b>	26	<b>Total Pts. Veg</b>	35
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Bacopa sp.</i>	bacopa	1	2.9
<i>Brasenia schreberi</i>	watershield	16	45.7
<i>Chara sp.</i>	muskgrass	1	2.9
<i>Cicuta maculata</i>	water hemlock	1	2.9
<i>Cyrilla racemiflora</i>	swamp titi	6	17.1
<i>Cyperus sp.</i>	nutsedge	1	2.9
<i>Eleocharis quadrangulata</i>	square-stem spikerush	1	2.9
<i>Eleocharis vivipara</i>	hairgrass	31	88.6
<i>Hydrocotyle umbellata</i>	marsh pennywort	6	17.1
<i>Hypericum sp.</i>	St. Johnswort	1	2.9
<i>Hypericum walteri</i>	marsh St. Johnswort	3	8.6
<i>Juncus effusus</i>	soft rush	1	2.9
<i>Juncus repens</i>	creeping rush	13	37.1
<i>Ludwigia sp.</i>	waterprimrose	2	5.7
<i>Myriophyllum heterophyllum</i>	broadleaf watermilfoil	5	14.3
<i>Nuphar advena</i>	spatterdock	1	2.9
<i>Nymphaea odorata</i>	white waterlily	12	34.3
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	4	11.4
<i>Peltandra virginica</i>	green arrow arum	1	2.9
<i>Persicaria sp.</i>	knotweed	3	8.6
<i>Potamogeton diversifolius</i>	waterthread pondweed	3	8.6
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	1	2.9
<i>Rhynchospora sp.</i>	beaksedge	3	8.6
<i>Saururus cernuus</i>	lizard's tail	5	14.3
<i>Scirpus cyperinus</i>	woolgrass	1	2.9
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	0	0.0
<i>Utricularia radiata</i>	floating bladderwort	17	48.6
<i>Zannichellia palustris</i>	horned pondweed	2	5.7

Table 11. Macrophyte community of Ivy Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Ivy Lake</b>			
<b>Littoral Depth</b>	15.6'	<b>Date Surveyed</b>	June 15, 2023
<b>Species Richness</b>	26	<b>Total Pts. Sur</b>	15
<b>Native Species Richness</b>	23	<b>Total Pts. Veg</b>	15
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alnus serrulata</i>	smooth alder	1	6.7
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	4	26.7
<i>Arundinaria gigantea</i>	river cane	4	26.7
<i>Brasenia schreberi</i>	watershield	3	20.0
<i>Cyrilla racemiflora</i>	swamp titi	1	6.7
<i>Dulichium arundinaceum</i>	threeway sedge	1	6.7
<i>Eleocharis vivipara</i>	hairgrass	11	73.3
<i>Hydrocotyle umbellata</i>	marsh pennywort	9	60.0
<i>Hypericum walteri</i>	marsh St. Johnswort	5	33.3
<i>Iris sp.</i>	iris	3	20.0
<i>Itea virginica</i>	Virginia sweetspire	2	13.3
<i>Ludwigia peploides</i>	floating waterprimrose	2	13.3
<i>Myriophyllum aquaticum</i>	<b>parrotfeather</b>	4	26.7
<i>Nitella sp.</i>	nitella	1	6.7
<i>Nyssa biflora</i>	swamp tupelo	3	20.0
<i>Orontium aquaticum</i>	goldenclub	2	13.3
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	3	20.0
<i>Potamogeton diversifolius</i>	waterthread pondweed	5	33.3
<i>Rhychospora sp.</i>	beaksedge	2	13.3
<i>Sagittaria latifolia</i>	broadleaf arrowhead	2	13.3
<i>Sagittaria platyphylla</i>	delta arrowhead	2	13.3
<i>Saururus cernuus</i>	lizard's tail	2	13.3
<i>Sparganium americanum</i>	American burreed	4	26.7
<i>Spirodela polyrhiza</i>	greater duckweed	0	0.0
<i>Taxodium distichum</i>	baldcypress	0	0.0
<i>Zizaniopsis miliacea</i>	giant cutgrass	1	6.7

Table 12. Macrophyte community of Lake Claude Bennett. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with ‘0’ for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Claude Bennett</b>			
<b>Littoral Depth</b>	8.7'	<b>Date Surveyed</b>	June 14, 2023
<b>Species Richness</b>	25	<b>Total Pts. Sur</b>	22
<b>Native Species Richness</b>	23	<b>Total Pts. Veg</b>	22
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alnus serrulata</i>	smooth alder	1	4.5
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	20	90.9
<i>Carex sp.</i>	sedge	3	13.6
<i>Carex vulpinoidea</i>	foxtail sedge	1	4.5
<i>Cephalanthus occidentalis</i>	buttonbush	2	9.1
<i>Chara sp.</i>	muskgrass	1	4.5
<i>Echinodorus cordifolius</i>	creeping burhead	1	4.5
<i>Eleocharis quadrangulata</i>	square-stem spikerush	2	9.1
<i>Eleocharis vivipara</i>	hairgrass	3	13.6
<i>Hypericum walteri</i>	marsh St. Johnswort	9	40.9
<i>Juncus canadensis</i>	Canada rush	2	9.1
<i>Juncus effusus</i>	soft rush	3	13.6
<i>Liquidambar styraciflaur</i>	sweetgum	0	0.0
<i>Ludwigia peploides</i>	floating waterprimrose	7	31.8
<i>Ludwigia sp.</i>	waterprimrose	1	4.5
<i>Panicum hemitomon</i>	maiden cane	2	9.1
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	7	31.8
<i>Persicaria sp.</i>	knotweed	1	4.5
<i>Potamogeton diversifolius</i>	waterthread pondweed	1	4.5
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	2	9.1
<i>Sagittaria latifolia</i>	broadleaf arrowhead	4	18.2
<i>Sagittaria platyphylla</i>	delta arrowhead	3	13.6
<i>Taxodium distichum</i>	baldcypress	1	4.5
<i>Typha latifolia</i>	broadleaf cattail	1	4.5
<i>Zizaniopsis miliacea</i>	giant cutgrass	2	9.1

Table 13. Macrophyte community of Lake Eddins. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Eddins</b>			
<b>Littoral Depth</b>	17.1'	<b>Date Surveyed</b>	June 13, 2023
<b>Species Richness</b>	23	<b>Total Pts. Sur</b>	27
<b>Native Species Richness</b>	16	<b>Total Pts. Veg</b>	26
		<b>%-Littoral Veg</b>	96.3
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alnus serrulata</i>	smooth alder	1	3.8
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	8	30.8
<i>Cephalanthus occidentalis</i>	buttonbush	2	7.7
<i>Chara sp.</i>	muskgrass	2	7.7
<i>Colocasia esculenta</i>	<b>taro</b>	19	73.1
<i>Cyperus sp.</i>	nutsedge	2	7.7
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	2	7.7
<i>Hydrocotyle umbellata</i>	marsh pennywort	1	3.8
<i>Hypericum walteri</i>	marsh St. Johnswort	3	11.5
<i>Iris sp.</i>	iris	2	7.7
<i>Juncus effusus</i>	soft rush	7	26.9
<i>Liquidambar styraciflaur</i>	sweetgum	2	7.7
<i>Ludwigia hexapetala</i>	<b>six-petal waterprimrose</b>	5	19.2
<i>Ludwigia peploides</i>	floating waterprimrose	2	7.7
<i>Mentha aquatica</i>	<b>water mint</b>	2	7.7
<i>Panicum hemitomom</i>	maiden cane	1	3.8
<i>Panicum repens</i>	<b>torpedograss</b>	15	57.7
<i>Persicaria sp.</i>	knotweed	8	30.8
<i>Sagittaria platyphylla</i>	delta arrowhead	1	3.8
<i>Taxodium distichum</i>	baldcypress	5	19.2
<i>Triadica sebifera</i>	<b>tallowtree</b>	10	38.5
<i>Typha latifolia</i>	broadleaf cattail	3	11.5
<i>Zizaniopsis miliacea</i>	giant cutgrass	9	34.6

Table 14. Macrophyte community of Lake Mike Conner. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Mike Conner</b>			
<b>Littoral Depth</b>	17.1'	<b>Date Surveyed</b>	June 14, 2023
<b>Species Richness</b>	23	<b>Total Pts. Sur</b>	27
<b>Native Species Richness</b>	20	<b>Total Pts. Veg</b>	26
		<b>%-Littoral Veg</b>	96.3
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	9	34.6
<i>Carex sp.</i>	sedge	3	11.5
<i>Carex vulpinoidea</i>	foxtail sedge	1	3.8
<i>Cephalanthus occidentalis</i>	buttonbush	3	11.5
<i>Commelina virginica</i>	Virginia dayflower	1	3.8
<i>Hydrocotyle umbellata</i>	marsh pennywort	15	57.7
<i>Hypericum walteri</i>	marsh St. Johnswort	3	11.5
<i>Juncus canadensis</i>	Canada rush	1	3.8
<i>Juncus effusus</i>	soft rush	3	11.5
<i>Justicia ovata</i>	looseflower waterwillow	3	11.5
<i>Ludwigia peploides</i>	floating waterprimrose	2	7.7
<i>Nuphar advena</i>	spatterdock	1	3.8
<i>Nyssa biflora</i>	swamp tupelo	3	11.5
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	14	53.8
<i>Persicaria sp.</i>	knotgrass	2	7.7
<i>Potamogeton diversifolius</i>	waterthread pondweed	1	3.8
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	1	3.8
<i>Rhynchospora glomerata</i>	clustered beaksedge	4	15.4
<i>Sagittaria platyphylla</i>	delta arrowhead	1	3.8
<i>Saururus cernuus</i>	lizard's tail	12	46.2
<i>Taxodium distichum</i>	baldcypress	4	15.4
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	5	19.2
<i>Zizaniopsis miliacea</i>	giant cutgrass	9	34.6

Table 15. Macrophyte community of Lake Perry. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Perry</b>			
<b>Littoral Depth</b>	8.0'	<b>Date Surveyed</b>	June 28, 2023
<b>Species Richness</b>	31	<b>Total Pts. Sur</b>	22
<b>Native Species Richness</b>	28	<b>Total Pts. Veg</b>	22
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	alligator weed	5	22.7
<i>Arundinaria gigantea</i>	river cane	0	0.0
<i>Brasenia schreberi</i>	watershield	9	40.9
<i>Carex vulpinoidea</i>	foxtail sedge	1	4.5
<i>Cyrilla racemiflora</i>	swamp titi	12	54.5
<i>Eleocharis quadrangulata</i>	square-stem spikerush	1	4.5
<i>Eleocharis vivipara</i>	hairgrass	20	90.9
<i>Hydrocotyle ranunculoides</i>	floating pennywort	1	4.5
<i>Hydrocotyle umbellata</i>	marsh pennywort	5	22.7
<i>Hydrolea uniflora</i>	oneflower false fiddleleaf	7	31.8
<i>Hypericum walteri</i>	marsh St. Johnswort	7	31.8
<i>Itea virginica</i>	Virginia sweetspire	2	9.1
<i>Juncus effusus</i>	soft rush	1	4.5
<i>Juncus repens</i>	creeping rush	1	4.5
<i>Ludwigia peploides</i>	floating waterprimrose	2	9.1
<i>Mayaca fluviatilis</i>	bog moss	1	4.5
<i>Myriophyllum heterophyllum</i>	broadleaf watermilfoil	3	13.6
<i>Nymphaea odorata</i>	white waterlily	4	18.2
<i>Nyssa biflora</i>	swamp tupelo	3	13.6
<i>Oxycaryum cubense</i>	Cuban bulrush	1	4.5
<i>Panicum hemitomon</i>	maiden cane	2	9.1
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	4	18.2
<i>Persicaria sp.</i>	knotweed	1	4.5
<i>Potamogeton diversifolius</i>	waterthread pondweed	5	22.7
<i>Rhynchospora sp.</i>	beaksedge	2	9.1
<i>Sagittaria latifolia</i>	broadleaf arrowhead	2	9.1
<i>Saururus cernuus</i>	lizard's tail	2	9.1
<i>Sparganium americanum</i>	American burreed	10	45.5
<i>Utricularia gibba</i>	humped bladderwort	4	18.2
<i>Zannichellia palustris</i>	horned pondweed	0	0.0
<i>Zizaniopsis miliacea</i>	giant cutgrass	0	0.0



Table 16. Macrophyte community of Maynor Creek Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

Maynor Creek Lake			
<b>Littoral Depth</b>	16.2'	<b>Date Surveyed</b>	June 12, 2023
<b>Species Richness</b>	25	<b>Total Pts. Sur</b>	36
<b>Native Species Richness</b>	22	<b>Total Pts. Veg</b>	36
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	alligator weed	6	16.7
<i>Arundinaria gigantea</i>	river cane	3	8.3
<i>Bacopa caroliniana</i>	waterhyssop	10	27.8
<i>Brasenia schreberi</i>	watershield	23	63.9
<i>Cephalanthus occidentalis</i>	buttonbush	6	16.7
<i>Cyrilla racemiflora</i>	swamp titi	1	2.8
<i>Eleocharis vivipara</i>	hairgrass	27	75.0
<i>Hydrocotyle umbellata</i>	marsh pennywort	2	5.6
<i>Juncus repens</i>	creeping rush	5	13.9
<i>Liquidambar styraciflau</i>	sweetgum	1	2.8
<i>Ludwigia hexapetala</i>	six-petal waterprimrose	17	47.2
<i>Myriophyllum heterophyllum</i>	broadleaf watermilfoil	18	50.0
<i>Nelumbo lutea</i>	American lotus	0	0.0
<i>Nymphaea odorata</i>	white waterlily	24	66.7
<i>Nyssa biflora</i>	swamp tupelo	0	0.0
<i>Panicum hemitomom</i>	maiden cane	0	0.0
<i>Panicum repens</i>	torpedograss	20	55.6
<i>Peltandra virginica</i>	green arrow arum	0	0.0
<i>Persicaria sp.</i>	knotweed	1	2.8
<i>Potamogeton diversifolius</i>	waterthread pondweed	7	19.4
<i>Potamogeton illinoensis</i>	Illinois pondweed	1	2.8
<i>Rotala sp.</i>	rotala	1	2.8
<i>Sagittaria platyphylla</i>	delta arrowhead	2	5.6
<i>Saururus cernuus</i>	lizard's tail	3	8.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	1	2.8

Table 17. Macrophyte community of the Pascagoula River Delta. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Pascagoula River Delta</b>			
<b>Species Richness</b>	40	<b>Date Surveyed</b>	June 23, 2023
<b>Native Species Richness</b>	30	<b>Total Pts. Sur</b>	43
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	16	37.2
<i>Azolla caroliniana</i>	Carolina mosquitofern	1	2.3
<i>Baccharis halimifolia</i>	groundseltree	14	32.6
<i>Bacopa monnieri</i>	herb-of-grace	1	2.3
<i>Bolboschoenus robustus</i>	sturdy bulrush	1	2.3
<i>Ceratophyllum demersum</i>	coontail	7	16.3
<i>Cicuta maculata</i>	water hemlock	6	14.0
<i>Cladium mariscus</i>	swamp sawgrass	3	7.0
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	12	27.9
<i>Hydrocotyle ranunculoides</i>	floating pennywort	2	4.7
<i>Hydrocotyle umbellata</i>	marsh pennywort	2	4.7
<i>Juncus roemerianus</i>	black needlerush	27	62.8
<i>Lemna minor</i>	lesser duckweed	2	4.7
<i>Limnobium spongia</i>	American frogsbit	3	7.0
<i>Ludwigia peploides</i>	floating waterprimrose	2	4.7
<i>Lythrum lineare</i>	saltmarsh loosestrife	0	0.0
<i>Myriophyllum aquaticum</i>	<b>parrotfeather</b>	2	4.7
<i>Myriophyllum spicatum</i>	<b>Eurasian watermilfoil</b>	8	18.6
<i>Najas guadalupensis</i>	southern naiad	1	2.3
<i>Nitella sp.</i>	nitella	1	2.3
<i>Oxycaryum cubense</i>	<b>Cuban bulrush</b>	12	27.9
<i>Panicum repens</i>	<b>torpedograss</b>	6	14.0
<i>Persicaria sp.</i>	knotweed	1	2.3
<i>Phragmites australis</i>	<b>common reed</b>	11	25.6
<i>Pontederia cordata</i>	pickerelweed	6	14.0
<i>Potamogeton pusillus</i>	small pondweed	1	2.3
<i>Sabal minor</i>	dwarf palmetto	2	4.7
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	17	39.5
<i>Salvinia minima</i>	<b>waterspangles</b>	26	60.5
<i>Salvinia molesta</i>	<b>giant salvinia</b>	26	60.5
<i>Saururus cernuus</i>	lizard's tail	0	0.0
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	14	32.6
<i>Sporobolus sp.</i>	dropseed	22	51.2

<i>Taxodium distichum</i>	baldcypress	0	0.0
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	1	2.3
<i>Typha latifolia</i>	broadleaf cattail	1	2.3
<i>Vallisneria americana</i>	eelgrass	11	25.6
<i>Wolffia sp.</i>	watermeal	1	2.3
<i>Zizania aquatica</i>	southern wild rice	20	46.5
<i>Zizaniopsis miliacea</i>	giant cutgrass	1	2.3

Table 18. Macrophyte community of Prentiss Walker Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with ‘0’ for points present indicates it was present at site but was not observed at any survey points.

<b>Prentiss Walker Lake</b>			
<b>Littoral Depth</b>	7.2'	<b>Date Surveyed</b>	June 14, 2023
<b>Species Richness</b>	24	<b>Total Pts. Sur</b>	25
<b>Native Species Richness</b>	21	<b>Total Pts. Veg</b>	23
		<b>%-Littoral Veg</b>	92.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	18	78.3
<i>Arundinaria gigantea</i>	river cane	1	4.3
<i>Cephalanthus occidentalis</i>	buttonbush	1	4.3
<i>Cyperus sp.</i>	nutsedge	3	13.0
<i>Hydrocotyle ranunculoides</i>	floating pennywort	1	4.3
<i>Hydrocotyle umbellata</i>	marsh pennywort	9	39.1
<i>Hypericum walteri</i>	marsh St. Johnswort	5	21.7
<i>Itea virginica</i>	Virginia sweetspire	4	17.4
<i>Juncus effusus</i>	soft rush	5	21.7
<i>Ludwigia peploides</i>	floating waterprimrose	2	8.7
<i>Ludwigia sp.</i>	waterprimrose	2	8.7
<i>Nyssa biflora</i>	swamp tupelo	2	8.7
<i>Panicum hemitomon</i>	maiden cane	1	4.3
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	1	4.3
<i>Persicaria sp.</i>	knotweed	10	43.5
<i>Potamogeton diversifolius</i>	waterthread pondweed	2	8.7
<i>Sagittaria latifolia</i>	broadleaf arrowhead	5	21.7
<i>Sagittaria platyphylla</i>	delta arrowhead	1	4.3
<i>Saururus cernuus</i>	lizard's tail	6	26.1
<i>Scirpus cyperinus</i>	woolgrass	1	4.3
<i>Sparganium americanum</i>	American burreed	8	34.8
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	1	4.3
<i>Typha latifolia</i>	broadleaf cattail	1	4.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	2	8.7

Table 19. Macrophyte community of Turkey Fork Reservoir. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

Turkey Fork Reservoir			
Littoral Depth	9.6'	Date Surveyed	June 28, 2023
Species Richness	41	Total Pts. Sur	23
Native Species Richness	36	Total Pts. Veg	22
		%-Littoral Veg	95.7
Scientific Name	Common Name	# Pts. Present	%-Frequency
<i>Alternanthera philoxeroides</i>	alligator weed	9	40.9
<i>Arundinaria gigantea</i>	river cane	1	4.5
<i>Brasenia schreberi</i>	watershield	5	22.7
<i>Cephalanthus occidentalis</i>	buttonbush	1	4.5
<i>Cyrilla racemiflora</i>	swamp titi	5	22.7
<i>Dulichium arundinaceum</i>	threeway sedge	1	4.5
<i>Eichhornia crassipes</i>	water hyacinth	5	22.7
<i>Eleocharis quadrangulata</i>	square-stem spikerush	1	4.5
<i>Eleocharis sp.</i>	spikerush	3	13.6
<i>Eleocharis vivipara</i>	hairgrass	15	68.2
<i>Habenaria repens</i>	water spider orchid	2	9.1
<i>Hydrocotyle umbellata</i>	marsh pennywort	7	31.8
<i>Hydrolea uniflora</i>	oneflower false fiddleleaf	8	36.4
<i>Hypericum sp.</i>	St. Johnswort	2	9.1
<i>Hypericum walteri</i>	marsh St. Johnswort	7	31.8
<i>Itea virginica</i>	Virginia sweetspire	2	9.1
<i>Juncus repens</i>	creeping rush	5	22.7
<i>Ludwigia peploides</i>	floating waterprimrose	1	4.5
<i>Mayaca fluviatilis</i>	bog moss	1	4.5
<i>Myriophyllum heterophyllum</i>	broadleaf watermilfoil	0	0.0
<i>Nitella sp.</i>	nitella	2	9.1
<i>Nymphaea odorata</i>	white waterlily	9	40.9
<i>Panicum hemitomom</i>	maiden cane	5	22.7
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	21	95.5
<i>Peltandra virginica</i>	green arrow arum	3	13.6
<i>Persicaria sp.</i>	knotweed	2	9.1
<i>Pontederia cordata</i>	pickerelweed	1	4.5
<i>Potamogeton diversifolius</i>	waterthread pondweed	1	4.5
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	5	22.7
<i>Rhynchospora sp.</i>	beaksedge	2	9.1

<i>Sagittaria latifolia</i>	broadleaf arrowhead	2	9.1
<i>Salvinia minima</i>	waterspangles	0	0.0
<i>Saururus cernuus</i>	lizard's tail	1	4.5
<i>Scirpus cyperinus</i>	woolgrass	0	0.0
<i>Sparganium americanum</i>	American burreed	3	13.6
<i>Taxodium distichum</i>	baldcypress	2	9.1
<i>Triadica sebifera</i>	tallowtree	1	4.5
<i>Typha sp.</i>	cattail	1	4.5
<i>Xyris difformis</i>	bog yelloweyed grass	5	22.7
<i>Zannichellia palustris</i>	horned pondweed	1	4.5
<i>Zizaniopsis miliacea</i>	giant cutgrass	3	13.6

Table 20. Macrophyte community of Lake Bill Waller. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Bill Waller</b>			
<b>Littoral Depth</b>	20.3'	<b>Date Surveyed</b>	June 26, 2023
<b>Species Richness</b>	28	<b>Total Pts. Sur</b>	23
<b>Native Species Richness</b>	24	<b>Total Pts. Veg</b>	22
		<b>%-Littoral Veg</b>	95.7
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	6	27.3
<i>Brasenia schreberi</i>	watershield	17	77.3
<i>Carex sp.</i>	sedge	1	4.5
<i>Cephalanthus occidentalis</i>	buttonbush	7	31.8
<i>Chara sp.</i>	muskgrass	2	9.1
<i>Cyperus sp.</i>	nutsedge	1	4.5
<i>Eleocharis sp.</i>	spikerush	1	4.5
<i>Eleocharis vivipara</i>	hairgrass	15	68.2
<i>Hydrocotyle umbellata</i>	marsh pennywort	5	22.7
<i>Hypericum walteri</i>	marsh St. Johnswort	11	50.0
<i>Juncus sp.</i>	rush	1	4.5
<i>Myriophyllum heterophyllum</i>	broadleaf watermilfoil	15	68.2
<i>Nelumbo lutea</i>	American lotus	0	0.0
<i>Nymphaea odorata</i>	white waterlily	20	90.9
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	13	59.1
<i>Potamogeton diversifolius</i>	waterthread pondweed	2	9.1
<i>Potamogeton pusillus</i>	small pondweed	3	13.6
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	2	9.1
<i>Sagittaria latifolia</i>	broadleaf arrowhead	2	9.1
<b><i>Salvinia molesta</i></b>	<b>giant salvinia</b>	0	0.0
<i>Saururus cernuus</i>	lizard's tail	7	31.8
<i>Scirpus cyperinus</i>	woolgrass	0	0.0
<b><i>Typha angustifolia</i></b>	<b>narrowleaf cattail</b>	1	4.5
<i>Typha latifolia</i>	broadleaf cattail	3	13.6
<i>Utricularia biflora</i>	longspur bladderwort	2	9.1
<i>Utricularia gibba</i>	humped bladderwort	4	18.2
<i>Xyris difformis</i>	bog yelloweyed grass	3	13.6
<i>Zizaniopsis miliacea</i>	giant cutgrass	1	4.5

Table 21. Macrophyte community of Lake Columbia. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Columbia</b>			
<b>Littoral Depth</b>	18.8'	<b>Date Surveyed</b>	June 26, 2023
<b>Species Richness</b>	28	<b>Total Pts. Sur</b>	22
<b>Native Species Richness</b>	25	<b>Total Pts. Veg</b>	22
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	4	18.2
<i>Arundinaria gigantea</i>	river cane	0	0.0
<i>Brasenia schreberi</i>	watershield	20	90.9
<i>Cephalanthus occidentalis</i>	buttonbush	3	13.6
<i>Ceratophyllum demersum</i>	coontail	0	0.0
<i>Chara sp.</i>	muskgrass	1	4.5
<i>Cyperus sp.</i>	nutsedge	2	9.1
<i>Eleocharis vivipara</i>	hairgrass	10	45.5
<i>Hypericum walteri</i>	marsh St. Johnswort	1	4.5
<i>Ludwigia peploides</i>	floating waterprimrose	1	4.5
<i>Ludwigia sp.</i>	waterprimerose	1	4.5
<i>Myriophyllum heterophyllum</i>	broadleaf watermilfoil	20	90.9
<i>Nelumbo lutea</i>	American lotus	2	9.1
<i>Nymphaea odorata</i>	white waterlily	10	45.5
<i>Panicum hemitomon</i>	maiden cane	7	31.8
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	2	9.1
<i>Potamogeton diversifolius</i>	waterthread pondweed	3	13.6
<i>Proserpinaca pectinata</i>	combleaf mermaidweed	3	13.6
<i>Sagittaria platyphylla</i>	delta arrowhead	1	4.5
<i>Saururus cernuus</i>	lizard's tail	5	22.7
<i>Scirpus cyperinus</i>	woolgrass	2	9.1
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	1	4.5
<i>Typha latifolia</i>	broadleaf cattail	13	59.1
<i>Typha sp.</i>	cattail	1	4.5
<i>Utricularia biflora</i>	longspur bladderwort	2	9.1
<i>Utricularia gibba</i>	humped bladderwort	1	4.5
<i>Vallisneria americana</i>	eelgrass	2	9.1
<i>Xyris difformis</i>	bog yelloweyed grass	1	4.5



Table 22. Macrophyte community of Lake Lincoln. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Lincoln</b>			
<b>Littoral Depth</b>	4.2'	<b>Date Surveyed</b>	June 7, 2023
<b>Species Richness</b>	30	<b>Total Pts. Sur</b>	40
<b>Native Species Richness</b>	25	<b>Total Pts. Veg</b>	37
		<b>%-Littoral Veg</b>	92.5
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	22	59.5
<i>Bacopa caroliniana</i>	waterhyssop	14	37.8
<i>Carex sp.</i>	sedge	2	5.4
<i>Cephalanthus occidentalis</i>	buttonbush	10	27.0
<i>Colocasia esculenta</i>	<b>taro</b>	16	43.2
<i>Cyperus sp.</i>	nutsedge	1	2.7
<i>Echinodorus cordifolius</i>	creeping burhead	6	16.2
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	6	16.2
<i>Eleocharis quadrangulata</i>	square-stem spikerush	1	2.7
<i>Hydrocotyle umbellata</i>	marsh pennywort	1	2.7
<i>Hypericum lobocarpum</i>	fivelobe St. Johnswort	9	24.3
<i>Hypericum walteri</i>	marsh St. Johnswort	30	81.1
<i>Juncus effusus</i>	soft rush	23	62.2
<i>Juncus sp.</i>	rush	2	5.4
<i>Justicia ovata</i>	looseflower waterwillow	14	37.8
<i>Liquidambar styraciflaur</i>	sweetgum	0	0.0
<i>Ludwigia peploides</i>	floating waterprimrose	3	8.1
<i>Ludwigia sp.</i>	waterprimrose	3	8.1
<i>Panicum repens</i>	<b>torpedograss</b>	5	13.5
<i>Persicaria sp.</i>	knotweed	5	13.5
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	4	10.8
<i>Sagittaria latifolia</i>	broadleaf arrowhead	4	10.8
<i>Sagittaria platyphylla</i>	delta arrowhead	6	16.2
<i>Salix nigra</i>	black willow	0	0.0
<i>Saururus cernuus</i>	lizard's tail	2	5.4
<i>Sparganium americanum</i>	American burreed	2	5.4
<i>Taxodium distichum</i>	baldcypress	0	0.0
<i>Triadica sebifera</i>	<b>tallowtree</b>	7	18.9
<i>Typha latifolia</i>	broadleaf cattail	2	5.4
<i>Zizaniopsis miliacea</i>	giant cutgrass	25	67.6

Table 23. Macrophyte community of Lake Mary Crawford. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Mary Crawford</b>			
<b>Littoral Depth</b>	12.3'	<b>Date Surveyed</b>	June 9, 2023
<b>Species Richness</b>	21	<b>Total Pts. Sur</b>	19
<b>Native Species Richness</b>	17	<b>Total Pts. Veg</b>	19
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	8	42.1
<i>Cephalanthus occidentalis</i>	buttonbush	9	47.4
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	0	0.0
<i>Eleocharis vivipara</i>	hairgrass	1	5.3
<i>Itea virginica</i>	Virginia sweetspire	1	5.3
<i>Juncus effusus</i>	soft rush	3	15.8
<i>Justicia ovata</i>	looseflower waterwillow	1	5.3
<i>Liquidambar styraciflau</i>	sweetgum	1	5.3
<i>Ludwigia peploides</i>	floating waterprimrose	7	36.8
<i>Nelumbo lutea</i>	American lotus	10	52.6
<i>Nymphaea odorata</i>	white waterlily	6	31.6
<i>Panicum repens</i>	<b>torpedograss</b>	7	36.8
<i>Persicaria sp.</i>	knotweed	3	15.8
<i>Potamogeton diversifolius</i>	waterthread pondweed	1	5.3
<i>Sagittaria latifolia</i>	broadleaf arrowhead	1	5.3
<i>Sagittaria platyphylla</i>	delta arrowhead	1	5.3
<i>Saururus cernuus</i>	lizard's tail	6	31.6
<i>Taxodium distichum</i>	baldcypress	0	0.0
<i>Triadica sebifera</i>	<b>tallowtree</b>	0	0.0
<i>Typha latifolia</i>	broadleaf cattail	1	5.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	0	0.0

Table 24. Macrophyte community of Lake Walthall. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Walthall</b>			
<b>Littoral Depth</b>	21.8'	<b>Date Surveyed</b>	June 6, 2023
<b>Species Richness</b>	14	<b>Total Pts. Sur</b>	15
<b>Native Species Richness</b>	13	<b>Total Pts. Veg</b>	15
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	8	53.3
<i>Brasenia schreberi</i>	watershield	1	6.7
<i>Cephalanthus occidentalis</i>	buttonbush	12	80.0
<i>Echinodorus cordifolius</i>	creeping burhead	2	13.3
<i>Eleocharis vivipara</i>	hairgrass	11	73.3
<i>Hypericum walteri</i>	marsh St. Johnswort	0	0.0
<i>Liquidambar styraciflau</i>	sweetgum	3	20.0
<i>Najas guadalupensis</i>	southern naiad	1	6.7
<i>Panicum hemitomon</i>	maiden cane	1	6.7
<i>Rotala sp.</i>	rotala	9	60.0
<i>Salix nigra</i>	black willow	1	6.7
<i>Saururus cernuus</i>	lizard's tail	2	13.3
<i>Taxodium distichum</i>	baldecypress	9	60.0
<i>Utricularia gibba</i>	humped bladderwort	2	13.3

Table 25. Macrophyte community of the Pearl River Delta. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with ‘0’ for points present indicates it was present at site but was not observed at any survey points.

<b>Pearl River Delta</b>			
<b>Species Richness</b>	36	<b>Date Surveyed</b>	June 20, 2023
<b>Native Species Richness</b>	27	<b>Total Pts. Sur</b>	28
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	16	57.1
<i>Baccharis halimifolia</i>	groundseltree	5	17.9
<i>Cabomba caroliniana</i>	carolina fanwort	16	57.1
<i>Ceratophyllum demersum</i>	coontail	17	60.7
<i>Cicuta maculata</i>	water hemlock	12	42.9
<i>Cladium mariscus</i>	swamp sawgrass	1	3.6
<i>Colocasia esculenta</i>	<b>taro</b>	0	0.0
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	12	42.9
<i>Hydrocotyle ranunculoides</i>	floating pennywort	1	3.6
<i>Juncus roemerianus</i>	black needlerush	4	14.3
<i>Juncus sp.</i>	rush	1	3.6
<i>Lemna minor</i>	lesser duckweed	1	3.6
<i>Ludwigia peploides</i>	floating waterprimrose	17	60.7
<i>Lythrum lineare</i>	saltmarsh loosestrife	0	0.0
<i>Myriophyllum spicatum</i>	<b>Eurasian watermilfoil</b>	1	3.6
<i>Najas guadalupensis</i>	southern naiad	1	3.6
<i>Nitella sp.</i>	nitella	5	17.9
<i>Nuphar advena</i>	spatterdock	22	78.6
<i>Oxycaryum cubense</i>	<b>Cuban bulrush</b>	3	10.7
<i>Panicum repens</i>	<b>torpedograss</b>	4	14.3
<i>Peltandra virginica</i>	green arrow arum	2	7.1
<i>Persicaria sp.</i>	knotweed	7	25.0
<i>Phragmites australis</i>	<b>common reed</b>	13	46.4
<i>Pontederia cordata</i>	pickerelweed	7	25.0
<i>Sabal minor</i>	dwarf palmetto	8	28.6
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	8	28.6
<i>Salvinia minima</i>	<b>waterspangles</b>	16	57.1
<i>Saururus cernuus</i>	lizard's tail	1	3.6
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	9	32.1
<i>Taxodium distichum</i>	baldcypress	7	25.0
<i>Triadica sebifera</i>	<b>tallowtree</b>	1	3.6
<i>Typha latifolia</i>	broadleaf cattail	1	3.6
<i>Utricularia sp.</i>	bladderwort	8	28.6
<i>Vallisneria americana</i>	eelgrass	7	25.0
<i>Zizania aquatica</i>	southern wild rice	4	14.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	4	14.3

Table 26. Macrophyte community of Simpson County Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Simpson County Lake</b>			
<b>Littoral Depth</b>	13.5'	<b>Date Surveyed</b>	June 9, 2023
<b>Species Richness</b>	27	<b>Total Pts. Sur</b>	24
<b>Native Species Richness</b>	25	<b>Total Pts. Veg</b>	24
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alnus serrulata</i>	smooth alder	2	8.3
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	23	95.8
<i>Arundinaria gigantea</i>	river cane	2	8.3
<i>Carex vulpinoidea</i>	foxtail sedge	1	4.2
<i>Carex sp.</i>	sedge	3	12.5
<i>Cephalanthus occidentalis</i>	buttonbush	2	8.3
<i>Eleocharis vivipara</i>	hairgrass	18	75.0
<i>Hydrocotyle ranunculoides</i>	floating pennywort	1	4.2
<i>Hydrocotyle umbellata</i>	marsh pennywort	5	20.8
<i>Hypericum walteri</i>	marsh St. Johnswort	9	37.5
<i>Itea virginica</i>	Virginia sweetspire	6	25.0
<i>Juncus effusus</i>	soft rush	17	70.8
<i>Liquidambar styraciflau</i>	sweetgum	0	0.0
<i>Ludwigia peploides</i>	floating waterprimrose	1	4.2
<i>Nymphaea odorata</i>	white waterlily	2	8.3
<i>Nyssa biflora</i>	swamp tupelo	4	16.7
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	13	54.2
<i>Peltandra virginica</i>	green arrow arum	3	12.5
<i>Persicaria sp.</i>	knotweed	3	12.5
<i>Potamogeton diversifolius</i>	waterthread pondweed	1	4.2
<i>Sagittaria latifolia</i>	broadleaf arrowhead	2	8.3
<i>Saururus cernuus</i>	lizard's tail	7	29.2
<i>Sparganium americanum</i>	American burreed	3	12.5
<i>Taxodium distichum</i>	baldcypress	0	0.0
<i>Typha latifolia</i>	broadleaf cattail	0	0.0
<i>Utricularia sp.</i>	bladderwort	5	20.8
<i>Zizaniopsis miliacea</i>	giant cutgrass	2	8.3

Table 27. Macrophyte community of Calling Panther Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Calling Panther Lake</b>			
<b>Littoral Depth</b>	19.2'	<b>Date Surveyed</b>	June 7, 2023
<b>Species Richness</b>	25	<b>Total Pts. Sur</b>	39
<b>Native Species Richness</b>	22	<b>Total Pts. Veg</b>	38
		<b>%-Littoral Veg</b>	97.4
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	alligator weed	2	5.3
<i>Arundinaria gigantea</i>	river cane	1	2.6
<i>Brasenia schreberi</i>	watershield	5	13.2
<i>Carex sp.</i>	sedge	1	2.6
<i>Cephalanthus occidentalis</i>	buttonbush	5	13.2
<i>Cyperus sp.</i>	nutsedge	5	13.2
<i>Eleocharis quadrangulata</i>	square-stem spikerush	2	5.3
<i>Hypericum walteri</i>	marsh St. Johnswort	24	63.2
<i>Juncus effusus</i>	soft rush	17	44.7
<i>Liquidambar styraciflau</i>	sweetgum	2	5.3
<i>Ludwigia peploides</i>	floating waterprimrose	10	26.3
<i>Nelumbo lutea</i>	American lotus	0	0.0
<i>Nymphaea odorata</i>	white waterlily	9	23.7
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	1	2.6
<i>Persicaria sp.</i>	knotweed	4	10.5
<i>Potamogeton diversifolius</i>	waterthread pondweed	4	10.5
<i>Rotala sp.</i>	rotala	1	2.6
<i>Sagittaria platyphylla</i>	delta arrowhead	2	5.3
<i>Saururus cernuus</i>	lizard's tail	12	31.6
<i>Scirpus cyperinus</i>	woolgrass	5	13.2
<i>Sparganium americanum</i>	American burreed	2	5.3
<i>Taxodium distichum</i>	baldcypress	1	2.6
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	0	0.0
<i>Typha latifolia</i>	broadleaf cattail	2	5.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	13	34.2

Table 28. Macrophyte community of Lake Natchez. No species were observed at survey points.

<b>Lake Natchez</b>			
<b>Littoral Depth</b>	3.3'	<b>Date Surveyed</b>	June 8, 2023
<b>Species Richness</b>	2	<b>Total Pts. Sur</b>	17
<b>Native Species Richness</b>	2	<b>Total Pts. Veg</b>	0
		<b>%-Littoral Veg</b>	0.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Juncus effusus</i>	soft rush	0	NA
<i>Liquidambar styraciflau</i>	sweetgum	0	NA

Table 29. Macrophyte community of Lake Tangipahoa. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Lake Tangipahoa</b>			
<b>Littoral Depth</b>	2.6'	<b>Date Surveyed</b>	June 6, 2023
<b>Species Richness</b>	31	<b>Total Pts. Sur</b>	40
<b>Native Species Richness</b>	24	<b>Total Pts. Veg</b>	40
		<b>%-Littoral Veg</b>	100.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	37	92.5
<i>Bacopa caroliniana</i>	waterhyssop	19	47.5
<i>Ceratophyllum demersum</i>	coontail	0	0.0
<i>Chara sp.</i>	muskgrass	1	2.5
<i>Cyperus sp.</i>	nutsedge	1	2.5
<i>Eichhornia crassipes</i>	<b>water hyacinth</b>	38	95.0
<i>Hydrocotyle ranunculoides</i>	floating pennywort	16	40.0
<i>Hydrocotyle umbellata</i>	marsh pennywort	4	10.0
<i>Hypericum sp.</i>	St. Johnswort	1	2.5
<i>Hypericum walteri</i>	marsh St. Johnswort	4	10.0
<i>Juncus effusus</i>	soft rush	2	5.0
<i>Justicia ovata</i>	looseflower waterwillow	2	5.0
<i>Lemna minor</i>	lesser duckweed	1	2.5
<i>Lilaeopsis carolinensis</i>	Carolina grasswort	1	2.5
<i>Limnobium spongia</i>	American frogsbit	3	7.5
<i>Ludwigia peploides</i>	floating waterprimrose	5	12.5
<i>Ludwigia sp.</i>	waterprimrose	5	12.5
<i>Myriophyllum aquaticum</i>	parrotfeather	5	12.5
<i>Nuphar advena</i>	spatterdock	19	47.5
<i>Nymphaea odorata</i>	white waterlily	2	5.0
<i>Oxycaryum cubense</i>	<b>Cuban bulrush</b>	11	27.5
<i>Panicum hemitomon</i>	maiden cane	16	40.0
<i>Panicum repens</i>	<b>torpedograss</b>	1	2.5
<i>Persicaria sp.</i>	knotweed	1	2.5
<i>Sagittaria latifolia</i>	broadleaf arrowhead	1	2.5
<i>Salvinia minima</i>	<b>waterspangles</b>	23	57.5
<i>Salvinia molesta</i>	<b>giant salvinia</b>	1	2.5
<i>Saururus cernuus</i>	lizard's tail	6	15.0
<i>Triadica sebifera</i>	<b>tallowtree</b>	0	0.0
<i>Utricularia gibba</i>	humped bladderwort	1	2.5
<i>Zizaniopsis miliacea</i>	giant cutgrass	17	42.5



Table 30. Macrophyte community of Okhissa Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

<b>Okhissa Lake</b>			
<b>Littoral Depth</b>	20.0'	<b>Date Surveyed</b>	June 5, 2023
<b>Species Richness</b>	26	<b>Total Pts. Sur</b>	25
<b>Native Species Richness</b>	19	<b>Total Pts. Veg</b>	24
		<b>%-Littoral Veg</b>	96.0
<b>Scientific Name</b>	<b>Common Name</b>	<b># Pts. Present</b>	<b>%-Frequency</b>
<i>Alternanthera philoxeroides</i>	<b>alligator weed</b>	7	29.2
<i>Brasenia schreberi</i>	watershield	4	16.7
<i>Cephalanthus occidentalis</i>	buttonbush	1	4.2
<i>Chara sp.</i>	muskgrass	2	8.3
<i>Cyperus sp.</i>	nutsedge	1	4.2
<i>Eleocharis vivipara</i>	hairgrass	2	8.3
<b><i>Hydrilla verticillata</i></b>	<b>hydrilla</b>	3	12.5
<i>Hydrocotyle umbellata</i>	marsh pennywort	1	4.2
<i>Hypericum walteri</i>	marsh St. Johnswort	7	29.2
<i>Juncus effusus</i>	soft rush	9	37.5
<i>Justicia americana</i>	American waterwillow	1	4.2
<i>Limnobium spongia</i>	American frogsbit	1	4.2
<i>Ludwigia peploides</i>	floating waterprimrose	2	8.3
<i>Ludwigia sp.</i>	waterprimrose	3	12.5
<b><i>Myriophyllum aquaticum</i></b>	<b>parrotfeather</b>	4	16.7
<b><i>Najas minor</i></b>	<b>spiny naiad</b>	1	4.2
<i>Nymphaea odorata</i>	white waterlily	1	4.2
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	2	8.3
<i>Persicaria sp.</i>	knotweed	3	12.5
<i>Potamogeton nodosus</i>	American pondweed	5	20.8
<b><i>Salvinia molesta</i></b>	<b>giant salvinia</b>	11	45.8
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	2	8.3
<i>Typha latifolia</i>	broadleaf cattail	4	16.7
<i>Utricularia gibba</i>	humped bladderwort	8	33.3
<i>Utricularia sp.</i>	bladderwort	2	8.3
<i>Zizaniopsis miliacea</i>	giant cutgrass	14	58.3

Table 31. Macrophyte community of Lake Tom Bailey. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds. Species with '0' for points present indicates it was present at site but was not observed at any survey points.

Lake Tom Bailey			
Littoral Depth	1.8'	Date Surveyed	June 16, 2023
Species Richness	34	Total Pts. Sur	25
Native Species Richness	30	Total Pts. Veg	25
		%-Littoral Veg	100.0
Scientific Name	Common Name	# Pts. Present	%-Frequency
<i>Alnus serrulata</i>	smooth alder	9	36.0
<i>Alternanthera philoxeroides</i>	alligator weed	16	64.0
<i>Arundinaria gigantea</i>	river cane	3	12.0
<i>Brasenia schreberi</i>	watershield	1	4.0
<i>Carex sp.</i>	sedge	4	16.0
<i>Cephalanthus occidentalis</i>	buttonbush	3	12.0
<i>Cyperus sp.</i>	nutsedge	4	16.0
<i>Echinodorus cordifolius</i>	creeping burhead	2	8.0
<i>Eleocharis quadrangulata</i>	square-stem spikerush	2	8.0
<i>Hydrocotyle umbellata</i>	marsh pennywort	8	32.0
<i>Hydrolea uniflora</i>	oneflower false fiddleleaf	1	4.0
<i>Hypericum walteri</i>	marsh St. Johnswort	9	36.0
<i>Itea virginica</i>	Virginia sweetspire	2	8.0
<i>Juncus effusus</i>	soft rush	7	28.0
<i>Juncus sp.</i>	rush	4	16.0
<i>Limnobium spongia</i>	American frogsbit	1	4.0
<i>Liquidambar styraciflau</i>	sweetgum	1	4.0
<i>Ludwigia peploides</i>	floating waterprimrose	4	16.0
<i>Ludwigia sp.</i>	waterprimrose	2	8.0
<i>Nymphaea odorata</i>	white waterlily	1	4.0
<i>Nyssa biflora</i>	swamp tupelo	0	0.0
<i>Panicum hemitomon</i>	maiden cane	7	28.0
<b><i>Panicum repens</i></b>	<b>torpedograss</b>	5	20.0
<i>Potamogeton pulcher</i>	spotted pondweed	2	8.0
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	1	4.0
<i>Rhynchospora sp.</i>	beaksedge	3	12.0
<i>Sagittaria latifolia</i>	broadleaf arrowhead	2	8.0
<i>Sagittaria platyphylla</i>	delta arrowhead	6	24.0
<b><i>Salvinia molesta</i></b>	<b>giant salvinia</b>	2	8.0
<i>Saururus cernuus</i>	lizard's tail	4	16.0
<i>Taxodium distichum</i>	baldcypress	1	4.0
<b><i>Triadica sebifera</i></b>	<b>tallowtree</b>	5	20.0
<i>Typha latifolia</i>	broadleaf cattail	0	0.0
<i>Zizaniopsis miliacea</i>	giant cutgrass	6	24.0

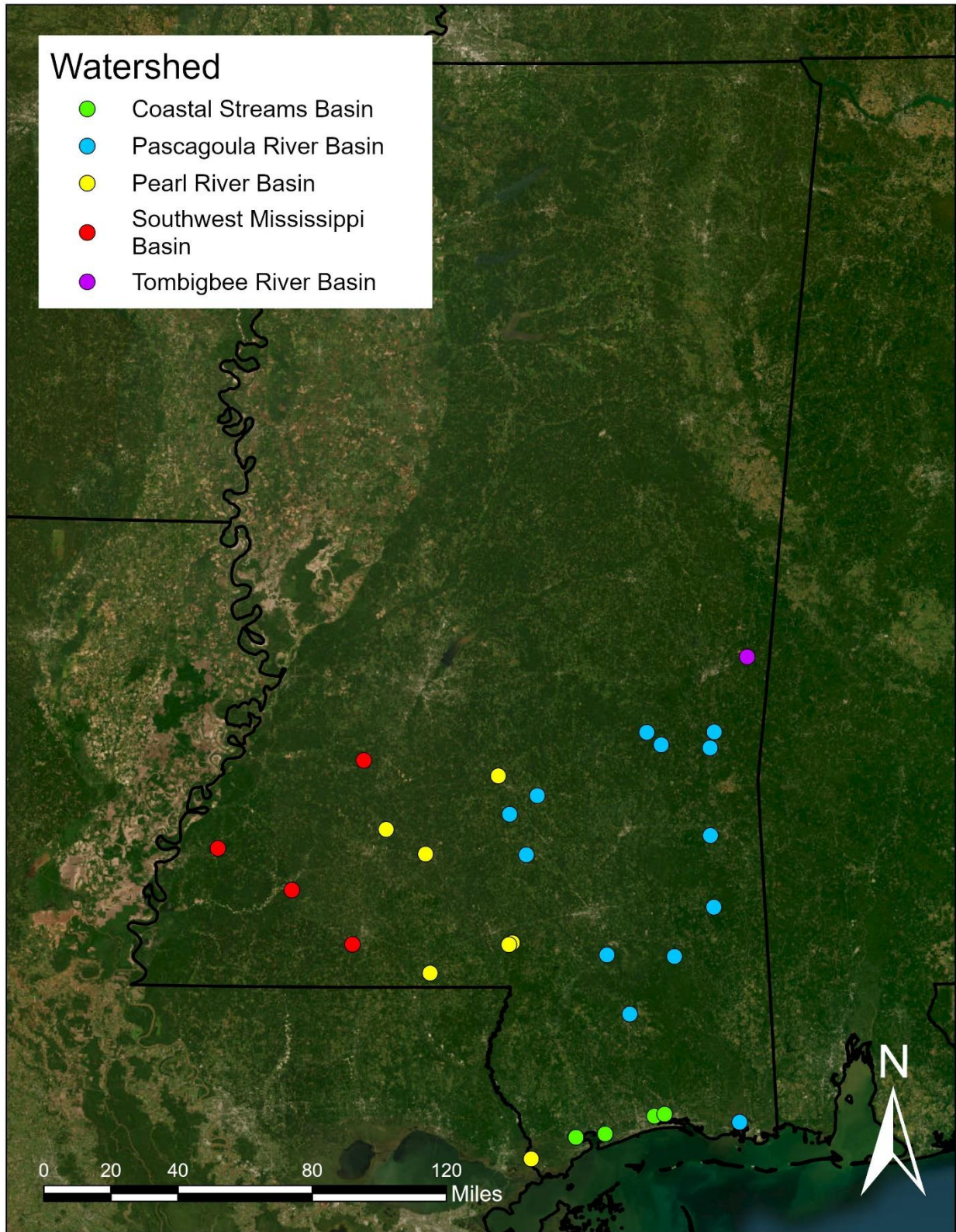


Fig 1. Locations of Mississippi waterbodies surveyed during June 2023. Sites belonging to different river/stream basins indicated by different color codes.

## Appendices

Appendix 1. Lakes surveyed in 2017, 2019, 2020, 2022, and 2023; an ‘X’ indicates year(s) lake was surveyed; lakes where non-native species were observed for at least one survey are in **red font**; lakes where federal and/or state noxious weed(s) were observed are in **bold**.

Lakes	2017	2019	2020	2022	2023	Management Entity*
<b>Aberdeen (TTW)</b>		X				USACE
Amory (TTW)		X				USACE
<b>Anchor</b>	X					Private
<b>Archusa Creek</b>	X			X	X	PHW
<b>Bay Springs (TTW)</b>	X			X		USACE
Bee	X					Private
Big Creek				X		PHW
<b>Bill Waller</b>	X			X	X	MDWFP
Bogue Homa	X					MDWFP
<b>Bluff</b>	X			X		USFWS
Calling Panther	X				X	MDWFP
<b>Caroline</b>	X					Private
<b>Choctaw</b>				X		USFS
Clarkco Lake	X					MDWFP
<b>Claude Bennett</b>	X				X	MDWFP
Columbia	X			X	X	MDWFP
<b>Columbus (TTW)</b>	X		X			USACE
Dalewood Shore			X			Private
<b>Doyle Arm</b>			X	X		USFWS
<b>Dry Creek</b>	X				X	PHW
<b>Eddins</b>					X	Private
Elvis Presley	X	X				MDWFP
English	X					MDWFP
<b>Flint Creek</b>	X				X	PHW
<b>Fulton (TTW)</b>		X				USACE
<b>Geiger</b>	X				X	MDWFP
George			X			Private
Hideaway	X					Private
Horseshoe			X			Private
<b>Ivy</b>					X	MDWFP
<b>Kemper</b>	X			X		MDWFP
Lamar Bruce	X	X				MDWFP
<b>Lincoln</b>	X				X	MDWFP
Little Eagle			X			Private
<b>Loakfoma</b>	X			X		USFWS
Lower			X			USACE
Lowndes	X			X		MDWFP

Mary	X					Private
<b>Mary Crawford</b>	X			X	X	MDWFP
<b>Maynor Creek</b>	X			X	X	PHW
<b>Mike Connor</b>	X				X	MDWFP
Moon	X	X				Private
Natchez	X				X	MDWFP
Okatibbee			X	X		MDWFP
<b>Okhissa</b>	X				X	USFS
<b>Perry</b>	X			X	X	MDWFP
<b>Pickwick (TTW/TVA)</b>		X				USACE/TVA
<b>Pool D (TTW)</b>		X				USACE
<b>Pool E (TTW)</b>		X				USACE
<b>Prentiss Walker</b>	X			X	X	MDWFP
Roebuck			X			Private
Roosevelt	X					MDWFP
Ross Branch				X		USFWS
<b>Simpson-Legion</b>	X				X	MDWFP
<b>Smithville (TTW)</b>		X				USACE
<b>Spring</b>		X		X		MDWFP
<b>Tangipahoa</b>	X				X	MDWFP
<b>Tippah</b>	X					MDWFP
<b>Tom Bailey</b>					X	MDWFP
Tombigbee	X					MDWFP
Trace State Park			X	X		MDWFP
<b>TTW AL-Col</b>		X				USACE
<b>TTW Canal</b>		X				USACE
Turkey Creek	X			X		PHW
<b>Turkey Fork</b>	X			X	X	PHW
<b>Walthall</b>	X				X	MDWFP
Washington	X	X				Private
Wasp			X			Private

\*In the Management Entity column: USACE is U.S. Army Corps of Engineers; PHW is Pat Harrison Waterway District; MDWFP is MS Department of Wildlife, Fisheries, and Parks; USFWS is U.S. Fish and Wildlife Service; USFS is the U.S. Forest Service; and TVA is the Tennessee Valley Authority

Appendix 2. List of all species observed in surveys conducted in 2017, 2019, 2020, 2022, and 2023; numbers in year columns indicate number of waterbodies the respective species was observed in; status column indicates whether the species is native (Nat), non-native (Non-nat), or unknown (-).

Scientific Name	Common Name	Status	2017	2019	2020	2022	2023
<i>Acer negundo</i>	box elder	Nat	-	-	10	-	-
<i>Acer rubrum</i>	red maple	Nat	1	3	9	-	-
<i>Acer saccharinum</i>	silver maple	Nat	-	-	5	-	-
<i>Albizia julibrissin</i>	mimosa	Non-nat	-	8	4	-	-
<i>Algae sp.</i>	algae	-	7	-	-	17	-
<i>Alnus serrulata</i>	smooth alder	Nat	-	-	1	-	6
<i>Alnus sp.</i>	alder	Nat	-	9	1	-	-
<i>Alternanthera philoxeroides</i>	alligator weed	Non-nat	30	7	14	21	26
<i>Amaranthus tuberculatus</i>	roughfruit waterhemp	Nat	-	-	2	-	-
<i>Apocynum cannabinum</i>	hemp dogbane	Nat	-	-	2	-	-
<i>Arundinaria gigantea</i>	giant cane	Nat	2	3	-	-	14
<i>Azolla caroliniana</i>	Carolina mosquitofern	Nat	1	-	2	1	1
<i>Baccharis halimifolia</i>	eastern baccharis	Nat	5	5	7	-	6
<i>Bacopa caroliniana</i>	blue waterhyssop	Nat	4	1	1	2	3
<i>Bacopa monnieri</i>	herb-of-grace	Nat	-	-	1	-	2
<i>Bacopa sp.</i>	waterhyssop	-	2	-	-	-	1
<i>Bambusa vulgaris</i>	common bamboo	Nat	-	-	1	-	-
<i>Betula nigra</i>	river birch	Nat	-	-	13	2	-
<i>Boehmeria cylindrica</i>	smallspike false nettle	Nat	2	1	21	-	-
<i>Bolboschoenus robustus</i>	sturdy bulrush	Nat	-	-	-	-	4
<i>Brasenia schreberi</i>	watershield	Nat	16	3	2	-	13
<i>Brunnichia ovata</i>	redvine	Nat	-	-	2	-	-
<i>Cabomba caroliniana</i>	fanwort	Nat	-	-	2	-	5
<i>Callicarpa americana</i>	American beautyberry	Nat	1	-	-	-	-
<i>Carex sp.</i>	sedge	-	1	2	9	21	7
<i>Carex vulpinoidea</i>	foxtail sedge	Nat	-	-	-	-	4
<i>Carya aquatica</i>	water hickory	Nat	2	-	6	-	-
<i>Carya glabra</i>	pignut hickory	Nat	-	-	1	-	-
<i>Castanea dentata</i>	American chesnut	Nat	-	-	1	-	-
<i>Cephalanthus occidentalis</i>	common buttonbush	Nat	21	8	17	21	18
<i>Ceratophyllum demersum</i>	coontail	Nat	10	8	7	5	7
<i>Cercis canadensis</i>	eastern redbud	Nat	-	-	1	-	-
<i>Chara sp.</i>	muskgrass	Nat	11	5	7	11	9
<i>Chasmanthium sessiflorum</i>	longleaf woodoats	Nat	-	-	1	-	-
<i>Cicuta maculata</i>	water hemlock	Nat	-	-	-	-	7
<i>Cinnamomun camphora</i>	camphortree	Non-nat	-	-	1	-	-
<i>Cladium mariscus</i>	sawgrass	Nat	-	-	4	1	6

Scientific Name	Common Native	Status	2017	2019	2020	2022	2023
<i>Clethra alnifolia</i>	coastal pepperbush	Nat	-	-	1	-	-
<i>Colocasia esculenta</i>	wild taro	Non-nat	8	5	2	2	4
<i>Commelina virginica</i>	Virginia dayflower	Nat	-	-	11	-	1
<i>Crataegus sp.</i>	hawthorn	Nat	1	-	-	-	-
<i>Crinum americanum</i>	southern swamp crinum	Nat	-	-	3	-	4
<i>Crotalaria sp.</i>	rattlebox	-	-	1	-	-	-
<i>Cynodon dactylon</i>	Bermuda grass	Non-nat	-	-	1	-	-
<i>Cyperus esculentus</i>	yellow nutsedge	Non-nat	4	-	21	-	-
<i>Cyperus iria</i>	rice flatsedge	Non-nat	-	-	1	-	-
<i>Cyperus odoratus</i>	fragrant flatsedge	Nat	4	-	-	-	-
<i>Cyperus sp.</i>	flatsedge	-	1	-	-	-	11
<i>Cyperus virens</i>	green flatsedge	Nat	-	-	2	-	-
<i>Cyrilla racemiflora</i>	swamp titi	Nat	-	-	1	-	7
<i>Dicanthelium latifolia</i>	broadleaf panicgrass	Nat	-	-	1	-	-
<i>Digitaria sp.</i>	crabgrass	-	2	-	-	-	-
<i>Diodia virginiana</i>	Virginia buttonweed	Nat	-	-	1	6	-
<i>Diospyros virginiana</i>	common persimmon	Nat	-	-	9	-	-
<i>Drepanocladus sp.</i>	watermoss	-	1	-	-	-	-
<i>Dulichium arundinaceum</i>	three-way sedge	Nat	1	-	-	5	4
<i>Echinochloa crus-galli</i>	barnyard grass	Non-nat	-	-	1	-	-
<i>Echinodorus cordifolius</i>	creeping burhead	Nat	5	-	1	-	6
<i>Eichhornia crassipes</i>	water hyacinth	Non-nat	8	5	7	2	7
<i>Eleocharis compressa</i>	flatstem spikerush	Nat	-	-	-	8	-
<i>Eleocharis elongata</i>	slim spikerush	Nat	-	-	-	1	-
<i>Eleocharis obtusa</i>	blunt spikerush	Nat	4	2	3	2	1
<i>Eleocharis palustris</i>	common spikerush	Nat	-	-	1	1	-
<i>Eleocharis parvula</i>	dwarf spikerush	Nat	-	-	1	-	-
<i>Eleocharis quadrangulata</i>	squarestem spikerush	Nat	2	6	3	9	7
<i>Eleocharis sp.</i>	spikerush	-	1	-	1	-	3
<i>Eleocharis vivipara</i>	viviparous spikerush	Nat	14	2	1	1	16
<i>Elymus virginicus</i>	Virginia wildrye	Nat	-	-	1	-	-
<i>Equisetum sp.</i>	horsetail	-	2	5	1	-	-
<i>Eupatorium serotinum</i>	lateflowering thoroughwort	Nat	3	-	2	-	-
<i>Foresteria acuminata</i>	eastern swamp privet	Nat	-	-	6	-	-
<i>Fraxinus caroliniana</i>	swamp ash	Nat	-	-	1	-	-
<i>Fraxinus pennsylvanica</i>	green ash	Nat	3	-	2	-	-
<i>Gleditsia aquatica</i>	water locust	Nat	-	-	5	-	-
<i>Hibiscus laevis</i>	halberdleaf rosemallow	Nat	2	-	-	-	-
<i>Hibiscus lasiocarpus</i>	wooly rosemallow	Nat	-	-	1	2	-
<i>Hibiscus moscheutos</i>	crimson-eyed rosemallow	Nat	1	-	4	-	-

Scientific Name	Common Native	Status	2017	2019	2020	2022	2023
<i>Hydrilla verticillata</i>	hydrilla	Non-nat	5	9	1	5	1
<i>Hydrocotyle ranunculoides</i>	floating marshpennywort	Nat	2	5	2	-	7
<i>Hydrocotyle sp.</i>	pennywort	-	4	-	-	13	-
<i>Hydrocotyle umbellata</i>	manyflower marshpennywort	Nat	12	7	7	1	18
<i>Hydrolea quadrivalvis</i>	waterpod	Nat	6	2	-	2	-
<i>Hydrolea uniflora</i>	oneflower false fiddleleaf	Nat	-	-	-	-	4
<i>Hypericum lobocarpum</i>	fivelobe St. Johnswort	Nat	-	-	-	-	1
<i>Hypericum mutillum</i>	dwarf St. Johnswort	Nat	-	-	-	-	1
<i>Hypericum sp.</i>	St. Johnswort	Nat	-	-	-	-	5
<i>Hypericum walteri</i>	greater marsh st. johnswort	Nat	2	-	4	-	20
<i>Ilex aquifolium</i>	English holly	Non-nat	-	-	1	-	-
<i>Ilex decidua</i>	possumhaw	Nat	-	-	4	-	-
<i>Iris sp.</i>	iris	-	-	-	-	2	2
<i>Juncus acuminatus</i>	tapertip rush	Nat	-	-	6	1	-
<i>Juncus canadensis</i>	Canada rish	Nat	-	-	-	-	2
<i>Juncus dudleyi</i>	Dudley's rush	Nat	-	-	-	1	-
<i>Juncus effusus</i>	common rush	Nat	15	12	7	19	15
<i>Juncus marginatus</i>	grassleaf rush	Nat	-	-	-	1	-
<i>Juncus pelocarpus</i>	brownfruit rush	Nat	-	-	-	3	-
<i>Juncus repens</i>	lesser creeping rush	Nat	3	-	-	-	8
<i>Juncus roemerianus</i>	black needlerush	Nat	-	-	5	-	6
<i>Juncus sp.</i>	rush	-	3	-	-	-	6
<i>Justicia americana</i>	American water-willow	Nat	6	11	22	3	1
<i>Justicia ovata</i>	looseflower water-willow	Nat	-	-	-	-	3
<i>Landoltia punctata</i>	spotted duckweed	Nat	-	4	9	-	-
<i>Leersia oryzoides</i>	rice cutgrass	Nat	2	-	12	10	-
<i>Lemna minor</i>	common duckweed	Nat	3	4	11	4	4
<i>Lemna sp.</i>	duckweed	-	3	-	-	-	-
<i>Leptochloa panicoides</i>	Amazon sprangletop	Nat	-	-	1	-	-
<i>Ligustrum sinense</i>	Chinese privet	Non-nat	-	-	1	-	-
<i>Lilaeopsis carolinensis</i>	Carolina grasswort	Nat	-	-	-	-	1
<i>Limnobium spongia</i>	American frogbit	Nat	3	4	2	3	4
<i>Lindera benzoin</i>	northern spicebush	Nat	4	-	-	-	-
<i>Liquidambar styraciflua</i>	sweetgum	Nat	4	-	4	-	13
<i>Ludwigia arcuata</i>	Piedmont primrose-willow	Nat	2	-	-	-	-
<i>Ludwigia hexapetala</i>	six-petal primrose-willow	Nat	-	-	-	5	3
<i>Ludwigia leptocarpa</i>	anglestem primrose-willow	Nat	-	6	10	11	-
<i>Ludwigia palustris</i>	marsh seedbox	Nat	3	-	-	-	-
<i>Ludwigia peploides</i>	floating primrose-willow	Nat	18	8	7	14	17
<i>Ludwigia sp.</i>	primrose	Nat	2	-	-	-	8



Scientific Name	Common Native	Status	2017	2019	2020	2022	2023
<i>Lychnothamnus barbatus</i>		Nat	-	-	-	-	1
<i>Lythrum lineare</i>	saltmarsh loosestrife	Nat	-	-	5	-	5
<i>Magnolia grandiflora</i>	souther magnolia	Nat	-	-	1	-	-
<i>Magnolia virginiana</i>	sweetbay	Nat	-	-	1	-	-
<i>Mayaca fluviatilis</i>	stream bogmoss	Nat	1	-	-	-	3
<i>Mentha aquatica</i>	watermint	Non-nat	-	-	-	-	1
<i>Mikania scandens</i>	climbing hempvine	Nat	-	-	2	-	-
<i>Mimulus rigens</i>	Allegheny monkeyflower	Nat	-	-	-	1	-
<i>Myrica cerifera</i>	southern wax myrtle	Nat	-	-	6	12	-
<i>Myriophyllum aquaticum</i>	parrotfeather	Non-nat	6	6	2	5	6
<i>Myriophyllum heterophyllum</i>	variableleaf watermilfoil	Nat	1	-	-	-	6
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	Non-nat	3	4	2	9	5
<i>Najas guadalupensis</i>	southern naiad	Nat	10	-	1	1	7
<i>Najas minor</i>	brittle naiad	Non-nat	12	2	3	-	1
<i>Nekemias arborea</i>	peppervine	Nat	-	-	6	-	-
<i>Nelumbo lutea</i>	American lotus	Nat	11	6	4	11	5
<i>Nitella sp.</i>	stonewort	-	7	-	-	-	6
<i>Nuphar advena</i>	spatterdock	Nat	4	-	3	-	6
<i>Nymphaea odorata</i>	American white waterlily	Nat	20	3	2	14	14
<i>Nyssa aquatica</i>	water tupelo	Nat	4	-	3	-	-
<i>Nyssa biflora</i>	swamp tupelo	Nat	-	-	-	-	10
<i>Orontium aquaticum</i>	goldenclub	Nat	-	-	-	-	2
<i>Oxycaryum cubense</i>	cuban bulrush	Non-nat	7	3	4	3	4
<i>Panicum hemitomon</i>	maidencane	Nat	1	-	-	-	11
<i>Panicum repens</i>	torpedo grass	Non-nat	15	4	3	7	26
<i>Panicum rigidulum</i>	redtop panicgrass	Nat	1	-	-	-	-
<i>Panicum sp.</i>	panicgrass	-	4	-	-	-	-
<i>Parthenocissus quinquefolia</i>	Virginia creeper	Nat	-	-	1	-	-
<i>Paspalum distichum</i>	knotgrass	Nat	-	-	4	2	-
<i>Paspalum floridanum</i>	Florida paspalum	Nat	-	-	2	-	-
<i>Paspalum notatum</i>	bahiagrass	-	-	-	-	1	-
<i>Paspalum sp.</i>	paspalum	-	-	-	25	-	-
<i>Paspalum urvillei</i>	Vasey's grass	Non-nat	-	-	1	-	-
<i>Peltandra virginica</i>	green arrow arum	Nat	2	8	2	5	9
<i>Persea palustris</i>	swamp bay	Nat	-	-	2	-	-
<i>Persicaria amphibium</i>	water knotweed	Nat	3	-	-	-	-
<i>Persicaria hydropiperoides</i>	swamp smartweed	Nat	7	-	6	14	-
<i>Persicaria pennsylvanicum</i>	Pennsylvania smartweed	Nat	1	1	7	4	-
<i>Persicaria sp.</i>	knotweed	-	10	-	14	8	16
<i>Phalaris arundinacea</i>	reed canary grass	Non-nat	-	-	-	1	-

Scientific Name	Common Native	Status	2017	2019	2020	2022	2023
<i>Phragmites australis</i>	common reed	Non-nat	1	-	5	-	6
<i>Pinus elliotii</i>	slash pine	Nat	-	-	4	-	-
<i>Pinus sp.</i>	pine	Nat	-	-	2	-	-
<i>Platanus occidentalis</i>	American sycamore	Nat	7	3	14	-	-
<i>Pluchea camphorata</i>	camphorweed	Nat	2	-	-	-	-
<i>Pontederia cordata</i>	pickerelweed	Nat	-	-	14	-	7
<i>Populus deltoides</i>	eastern cottonwood	Nat	-	-	4	-	-
<i>Potamogeton crispus</i>	curlyleaf pondweed	Non-nat	1	-	-	-	-
<i>Potamogeton diversifolius</i>	waterthread pondweed	Nat	8	-	-	7	14
<i>Potamogeton foliosus</i>	leafy pondweed	Nat	10	-	-	1	-
<i>Potamogeton illinoensis</i>	Illinois pondweed	Nat	2	-	-	-	1
<i>Potamogeton nodosus</i>	longleaf pondweed	Nat	6	9	3	9	2
<i>Potamogeton pulcher</i>	spotted pondweed	Nat	-	-	-	4	1
<i>Potamogeton pusillus</i>	small pondweed	Nat	-	-	-	-	2
<i>Proserpinaca pectinata</i>	combleaf mermaidweed	Nat	-	-	-	-	1
<i>Ptilium capillaceum</i>	eastern bishopweed	Nat	-	-	1	-	-
<i>Quercus alba</i>	white oak	Nat	-	-	2	-	-
<i>Quercus laurifolia</i>	laurel oak	Nat	-	-	-	-	-
<i>Quercus lyrata</i>	overcup oak	Nat	-	-	2	-	-
<i>Quercus nigra</i>	water oak	Nat	1	2	6	-	-
<i>Quercus phellos</i>	willow oak	Nat	-	-	3	-	-
<i>Quercus rubra</i>	red oak	Nat	-	-	1	-	-
<i>Quercus stellata</i>	post oak	Nat	-	-	1	-	-
<i>Quercus virginiana</i>	southern live oak	Nat	-	-	2	-	-
<i>Rhychospora sp.</i>	beaksedge	Nat	-	-	-	-	5
<i>Rhynchospora chalarocephala</i>	loosehead_beaksedge	Nat	-	-	-	3	-
<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	Nat	5	-	-	4	7
<i>Rhynchospora glomerata</i>	clustered beaksedge	Nat	-	-	-	-	1
<i>Ricciocarpos natans</i>	liverwort	Nat	-	-	1	3	-
<i>Rotala sp.</i>	rotalla	Nat	-	-	-	-	4
<i>Rubus sp.</i>	blackberry	Nat	-	-	3	-	-
<i>Sabal minor</i>	dwarf palmetto	Nat	-	-	7	-	6
<i>Sabatia calycina</i>	coastal rose gentian	Nat	-	-	1	-	1
<i>Saccharum giganteum</i>	sugarcane plumegrass	Nat	6	-	-	-	-
<i>Sacciolepis striata</i>	American cupscale	Nat	5	1	2	-	-
<i>Samolus parviflorus</i>	water pimpernel	Nat	-	-	-	-	1
<i>Sagittaria graminea</i>	grassy arrowhead	Nat	3	3	-	-	-
<i>Sagittaria lancifolia</i>	bulltongue arrowhead	Nat	11	5	6	15	6
<i>Sagittaria latifolia</i>	broadleaf arrowhead	Nat	9	10	4	4	11
<i>Sagittaria montevidensis</i>	giant arrowhead	Non-nat	2	-	-	-	-

Scientific Name	Common Native	Status	2017	2019	2020	2022	2023
<i>Sagittaria papillosa</i>	nipplebract arrowhead	Nat	-	-	-	-	1
<i>Sagittaria platyphylla</i>	delta arrowhead	Nat	-	-	-	15	10
<i>Salix nigra</i>	black willow	Nat	12	3	28	15	3
<i>Salvinia minima</i>	common salvinia	Non-nat	3	2	3	-	6
<i>Salvinia molesta</i>	giant salvinia	Non-nat	-	2	2	-	5
<i>Saururus cernuus</i>	lizard's tail	Nat	17	9	5	20	18
<i>Schoenoplectus americanus</i>	three-square bulrush	Nat	-	-	3	-	-
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush	Nat	-	-	6	-	6
<i>Scirpus cyperinus</i>	woolgrass	Nat	9	7	-	7	8
<i>Senna sp.</i>	senna	-	-	-	1	-	-
<i>Sesbania herbacea</i>	bigpod sesbania	Nat	1	7	5	-	-
<i>Sesbania punicia</i>	scarlet sesbania	Non-nat	-	-	2	-	-
<i>Setaria pumila</i>	yellow foxtail	Non-nat	-	-	1	-	-
<i>Sideroxylon lanuginosum</i>	gum bumelia	Nat	-	-	2	-	-
<i>Sium suave</i>	waterp parsnip	Nat	-	-	3	-	-
<i>Smilax sp.</i>	breenbriar	Nat	-	-	3	-	-
<i>Solidago canadensis</i>	canada goldenrod	Nat	-	-	5	-	-
<i>Sorghum halepense</i>	Johnson's grass	Non-nat	-	-	1	-	-
<i>Sparganium americanum</i>	American bur-reed	Nat	7	1	6	1	6
<i>Spartina alterniflora</i>	smooth cordgrass	Nat	-	-	5	-	-
<i>Spartina cyosuroides</i>	big cordgrass	Nat	-	-	6	-	-
<i>Spartina patens</i>	saltmeadow cordgrass	Nat	-	-	2	-	-
<i>Spirodela polyrhiza</i>	greater duckweed	Nat	-	-	-	-	1
<i>Sporobolus sp.</i>	dropseed	-	-	-	-	-	5
<i>Stuckenia pectinata</i>	sago pondweed	Nat	4	-	1	-	1
<i>Symphyotrichum divaricatum</i>	southern annual saltmarsh aster	Nat	-	-	2	-	-
<i>Symphyotrichum lanceolatum</i>	lance-leafed aster	Nat	-	-	1	-	-
<i>Symphyotrichum subulatum</i>	eastern annual saltmarsh aster	Nat	-	-	6	-	-
<i>Taxodium ascendens</i>	pond cypress	Nat	-	-	-	-	1
<i>Taxodium distichum</i>	bald cypress	Nat	19	12	17	12	17
<i>Tillandsia usneoides</i>	Spanish moss	Nat	1	-	1	-	-
<i>Triadica sebifera</i>	tallowtree	Non-nat	1	3	11	-	20
<i>Toxicodendron radicans</i>	poison ivy	Nat	-	-	1	-	-
<i>Tripsacum dactyloides</i>	eastern gamagrass	Nat	-	-	-	-	1
<i>Typha angustifolia</i>	narrowleaf cattail	Nat	-	-	-	-	1
<i>Typha domingensis</i>	southern cattail	Nat	-	-	-	-	3
<i>Typha latifolia</i>	broadleaf cattail	Nat	-	8	5	-	16
<i>Typha sp.</i>	cattail	-	23	-	-	12	2
<i>Ulmus alata</i>	winged elm	Nat	-	-	2	-	-

<b>Scientific Name</b>	<b>Common Native</b>	<b>Status</b>	<b>2017</b>	<b>2019</b>	<b>2020</b>	<b>2022</b>	<b>2023</b>
<i>Ulmus americana</i>	American elm	Nat	-	-	1	-	-
<i>Ulmus sp.</i>	elm	Nat	-	-	14	-	-
<i>Utricularia biflora</i>	longspur bladderwort	Nat	-	-	-	-	2
<i>Utricularia gibba</i>	humped bladderwort	Nat	-	-	-	-	7
<i>Utricularia macrorhiza</i>	common bladderwort	Nat	-	2	8	-	-
<i>Utricularia radiata</i>	floating bladderwort	Nat	-	-	-	-	1
<i>Utricularia sp.</i>	bladderwort	-	16	-	4	-	4
<i>Vallisneria americana</i>	American eelgrass	Nat	-	2	6	-	7
<i>Vitis sp.</i>	grape	-	-	-	3	-	-
<i>Vitis vulpina</i>	frost grape	Nat	-	-	3	-	-
<i>Wolffia sp.</i>	watermeal	-	-	-	-	-	1
<i>Woodwardia areolata</i>	netted chainfern	Nat	-	-	3	-	-
<i>Xyris difformis</i>	bog yelloweyed grass	Nat	-	-	-	-	4
<i>Zannichellia palustris</i>	horned pondweed	Nat	-	-	-	-	3
<i>Zizania aquatica</i>	southern wild rice	Nat	-	-	-	-	6
<i>Zizaniopsis miliacea</i>	giant cutgrass	Nat	7	8	8	20	20