

2022 Survey of Aquatic Plant Species in Mississippi Waterbodies



A report submitted to the Mississippi Aquatic Invasive Species Council

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Executive Summary

Conclusions

- Of the 21 lakes surveyed, none had communities that consisted entirely of native species.
- Overall, 129 species were observed during the survey effort; of which, 9 were non-native and 13 were not previously observed.
- The most widespread species were *Alternanthera philoxeroides* (21 waterbodies), *Cephalanthus occidentalis* (21 waterbodies), *Saururus cernuus* (20 waterbodies), *Zizaniopsis miliacea* (20 waterbodies), and *Juncus effusus* (19 waterbodies).
- The most widespread non-native species were *A. philoxeroides*, *Myriophyllum spicatum* (9 waterbodies), and *Panicum repens* (7 waterbodies).
- Of non-native species observed, *P. repens* is a Mississippi state noxious weed and *Hydrilla verticillata* (5 waterbodies) is a federal noxious weed.

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.

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Introduction

The state of Mississippi (MS) has significant water resources that, many times, are impaired by invasive aquatic and wetland plant species. 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. 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 mi²) 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 homeowners associations within the state. Many of these waterbodies are known to have problematic vegetation while others have never been surveyed.

Two federally listed noxious weeds 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 throughout the state of Mississippi during the 2022 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 21 lakes from four river basins were surveyed during June 2023 (Table 1; Loshbaugh et al. 2013). Surveyed waterbodies were located throughout the state (Fig 1). Of the 21 waterbodies surveyed in 2023, 3 had not been visited

during previous survey efforts (App. 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. 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 Godfrey and Wooten (1979, 1981). Most observations were identified to species, but in instances of cryptic species with inadequate diagnostic characteristics observations were reported at the genus level.

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. Shannon-Weiner Index and Shannon Evenness correspond to species diversity and species evenness respectively. Said metrics were calculated using the following formulae:

Species Frequency¹ (F_i):

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

Species Proportion² (p_i):

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

Shannon-Weiner Index² (H'):

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

Shannon Evenness² (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:

¹percent frequency = $F_i \cdot 100$

²formula retrieved from Gurevitch et al. (2002).

Results and Discussion

Statewide:

In total, 129 species were observed across all waterbodies in 2022. Of the 129 species, 13 of them were not observed in previous iteration of this survey. (App. 2; Turnage and Shoemaker 2018, Turnage et al. 2019, 2020). The most commonly present species were *Alternanthera philoxeroides* (21 waterbodies), *Cephalanthus occidentalis* (21 waterbodies), *Saururus cernuus* (20 waterbodies), *Zizaniopsis miliacea* (20 waterbodies), and *Juncus effusus* (19 waterbodies). Archusa Creek Lake was the most species diverse and even waterbody surveyed in 2022. Bluff Lake was the least diverse and even lake surveyed in 2022. Of the 129 species surveyed in 2022, 9 were non-native. The most common non-native species were *Alternanthera philoxeroides* (21 waterbodies), *Myriophyllum spicatum* (9 waterbodies), and *Panicum repens* (7 waterbodies). Notably, in addition to the state noxious weed *P. repens*, *Hydrilla verticillata*, the federal noxious weed, was observed in 5 waterbodies. Bluff Lake had the greatest number of non-native species (6) while Big Creek and Trace State Park Lake were both tied for least non-native species (1).

Archusa Creek Reservoir (PHWD):

Archusa Creek Reservoir (32.03742N, -88.70548 W) was surveyed on 20 July 2022. This waterbody is in Clarke County in the southeastern region of Mississippi. Littoral zone depth was measured at 10.5' (3.2 m) (Table 1). Out of the 35 points surveyed 35, or 100% were vegetated. The top three (3) most common species by presence were 1) *Paspalum distichum* (present in 74% of points) 2) *Cephalanthus occidentalis*, *Hydrocotyle spp.*, *Myriophyllum aquaticum*, *Zizaniopsis miliacea* (present in 54% of points) and 3) *Myrica cerifera* and *Saururus cernuus* (present in 43% of points). Non-native species (3 species) accounted for 10% of the 30 species

observed. Of the species observed, three non-native species were found in Archusa Creek Reservoir: *Alternanthera philoxeroides*, *Colocasia esculenta*, and *Myriophyllum aquaticum*. Of the 21 waterbodies surveyed, Archusa Creek Reservoir ranked 1st in diversity and evenness.

Bay Springs Reservoir (USACE):

Bay Springs Reservoir (34.54221N, -88.31353W) was surveyed on 7 July 2022. This waterbody stretches through the counties of Tishomingo and Prentiss in the northeastern region of Mississippi. Littoral zone depth was measured at 22.5' (6.86 m) (Table 2). Out of the 43 points surveyed 43, or 100% were vegetated. The top three (3) most common species by presence were 1) *Carex spp.* (present in 79% of points) 2) *Zizaniopsis miliacea* (present in 74% of points) and 3) *Juncus effuses* (present in 63% of points). Non-native species (2 species) accounted for 7.4% of the 27 species observed. *Hydrilla verticillata* (federal noxious weed) and *Alternanthera philoxeroides*, were observed in Bay Springs Reservoir. Of the 21 waterbodies surveyed, Bay Spring Reservoir ranked 5th in diversity and evenness.

Big Creek (PHW):

Big Creek (33.847075N, -89.412573W) was surveyed on 20 July 2022. This waterbody is in Calhoun County in the northeastern region of Mississippi. Littoral zone depth was measured at 12.2' (3.72 m) (Table 3). Out of the 20 points surveyed 20, or 100% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 95% of points) 2) *Hydrolea quadrivalvis* (present in 55% of points) and 3) *Cephalanthus occidentalis* (present in 50% of points). Non-native species (1 species) accounted for 7.1% of the 14 species observed. *Alternanthera philoxeroides*, a non-native species, was observed in Big Creek. Of the 21 waterbodies surveyed, Big Creek ranked 20th in diversity and evenness.

Bluff Lake (USFWS):

Bluff Lake (33.28021N, -88.78820W) was surveyed on 22 June 2022. This waterbody stretches in the counties of Winston, Noxubee, and Oktibbeha in the northeastern region of Mississippi. Littoral zone depth was measured at 7' (2.13 m) (Table 4). Out of the 61 points surveyed 61, or 100% were vegetated. The top three (3) most common species by presence were 1) *Taxodium distichum* (present in 95% of points) 2) *Zizaniopsis miliacea* (present in 89% of points) and 3) *Althernanthera philoxeroides* (present in 79% of points). Non-native species (6 species) accounted for 22.2% of the 27 species observed. Of the species observed, five non-native species were found in Bluff Lake: *Althernanthera philoxeroides*, *Hydrilla verticillata* (federal noxious weed), *Myriophyllum aquaticum*, *Myriophyllum spicatum*, and *Oxycaryum cubense*. Of the 21 waterbodies surveyed, Bluff Lake ranked 21st in diversity and evenness.

Choctaw Lake (USFS):

Choctaw Lake (33.2751247N, -89.1458983W) was surveyed on 10 June 2022. This waterbody is in Choctaw County in the northeastern region of Mississippi. Littoral zone depth was measured at 6.0' (1.83 m) (Table 5). Out of the 30 points surveyed 30, or 100% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* and *Juncus effuses* (present in 83% of points) 2) *Carex spp.* (present in 77% of points) and 3) *Ludwigia*

peploides (present in 63% of points). Non-native species (2 species) accounted for 10.0% of the 20 species observed. *Alternanthera philoxeroides* and *Panicum repens* (state noxious weed), non-native species, were observed in Choctaw Lake. Of the 21 waterbodies surveyed, Choctaw Lake ranked 18th in diversity and evenness.

Doyle Arm (USFWS):

Doyle Arm (33.2706163N, -88.7904W) was surveyed on 24 June 2022. This waterbody is in Noxubee County in the northeastern region of Mississippi. Littoral zone depth was measured at 5.2' (1.56 m) (Table 6). Out of the 25 points surveyed 25, or 100% were vegetated. The top three (3) most common species by presence were 1) *Taxodium distichum* (present in 96% of points) 2) *Limnobium spongia* (present in 88% of points) and 3) *Nymphaea odorata* (present in 80% of points). Non-native species (4 species) accounted for 14.3% of the 28 species observed. *Alternanthera philoxeroides*, *Hydrilla verticillata* (federal noxious weed), *Myriophyllum spicatum*, and *Oxycaryum cubense*, non-native species, were observed in Doyle Arm. Of the 21 waterbodies surveyed, Doyle Arm ranked 3rd in diversity and evenness.

Kemper County Lake (MDWFP):

Kemper County Lake (32.81326N, -88.71906W) was surveyed on 27 June 2022 through 29 June 2022. This waterbody is in Kemper County in the northeastern region of Mississippi. Littoral zone depth was measured at 16.5' (5.03 m) (Table 7). Out of the 89 points surveyed 89, or 100% were vegetated. The most common species by presence were 1) *Juncus effuses* (present in 75% of points) 2) *Peltandra virginica* (present in 74% of points) 3) *Myrica cerifera* (present in 69% of points). Non-native species (4 species) accounted for 14.3% of the 28 species observed. *Alternanthera philoxeroides*, *Hydrilla verticillata* (federal noxious weed), and *Myriophyllum spicatum*, non-native, were observed in Kemper County Lake. Of the 21 waterbodies surveyed, Kemper County Lake ranked 4th in diversity and evenness.

Lake Bill Waller (MDWFP):

Lake Bill Waller (31.19973N, -89.71431W) was surveyed on 11 July 2022. This waterbody is in Marion County in the southeastern region of Mississippi. Littoral zone depth was measured at 20.2' (6.16 m) (Table 8). Out of the 35 points surveyed 34, or 97.1% were vegetated. The top three (3) most common species by presence were 1) *Myriophyllum spicatum*, *Nymphaea odorata*, and *Panicum repens* (present in 100% of points) 2) *Brasenia schreberi* (present in 97% of points) and 3) *Cephalanthus occidentalis* (present in 85% of points). Non-native species (4 species) accounted for 17.4% of the 23 species observed. *Alternanthera philoxeroides*, *Myriophyllum spicatum*, and *Panicum repens* (state noxious weed), non-native species, were observed in Lake Bill Waller. Of the 21 waterbodies surveyed, Lake Bill Waller ranked 14th in diversity and evenness.

Lake Columbia (MDWFP):

Lake Columbia (31.18202N, -89.73340W) was surveyed on 12 July 2022. This waterbody is in Marion County in the southeastern region of Mississippi. Littoral zone depth was measured at 23.5' (7.16 m) (Table 9). Out of the 27 points surveyed 26, or 96.3% were vegetated. The top

three (3) most common species by presence were 1) *Brasenia schreberi* (present in 100% of points) 2) *Myriophyllum spicatum* (present in 96% of points) and 3) *Typha spp.* (present in 92% of points). Non-native species (3 species) accounted for 12.5% of the 24 species observed. *Alternanthera philoxeroides*, *Colocasia esculenta*, and *Myriophyllum spicatum*, non-native species, were observed in Lake Columbia. Of the 21 waterbodies surveyed, Lake Columbia ranked 7th in diversity and evenness.

Loakfoma Lake (USFWS):

Loakfoma Lake (33.26631N, -88.78221W) was surveyed on 24 June 2022. This waterbody is in COUNTY in the REGION of Mississippi. Littoral zone depth was measured at 6.5' (1.98 m), (Table 10). Out of the 56 points surveyed 56, or 100% were vegetated. The top three (3) most common species by presence were 1) *Zizaniopsis miliacea* (present in 100% of points) 2) *Limnobium spongia* (present in 88% of points) and 3) *Cephalanthus occidentalis* and *Nymphaea odorata* (present in 82% of points). Non-native species (2 species) accounted for 8.0% of the 25 species observed. *Alternanthera philoxeroides* and *Hydrilla verticillata* (federal noxious weed), non-native species, were observed in Loakfoma Lake. Of the 21 waterbodies surveyed, Loakfoma Lake ranked 13th in diversity and evenness.

Lake Lowndes (MDWFP):

Lake Lowndes (33.42333N, -88.29988W) was surveyed on 9 June 2022. This waterbody is in Lowndes County in the northeastern region of Mississippi. Littoral zone depth was measured at 5.2' (1.59 m) (Table 11). Out of the 40 points surveyed 40, or 100% were vegetated. The top three (3) most common species by presence were 1) *Juncus effuses*, *Ludwigia hexapetala*, and *Lysimachia nummularia* (present in 70% of points) 2) *Hydrocotyle spp.* (present in 65% of points) and 3) *Cephalanthus occidentalis* (present in 50% of points). Non-native species (3 species) accounted for 12.5% of the 24 species observed. *Alternanthera philoxeroides*, *Ludwigia hexapetala*, and *Myriophyllum aquaticum*, non-native species, were observed in Lake Lowndes. Of the 21 waterbodies surveyed, Lake Lowndes ranked 17th in diversity and evenness.

Lake Mary Crawford (MDWFP):

Lake Mary Crawford (31.57689N, -90.15321W) was surveyed on 11 July 2022. This waterbody is in Lawrence County in the southwestern region of Mississippi. Littoral zone depth was measured at 9.3' (2.83 m), (Table 12). Out of the 24 points surveyed 24, or 100% were vegetated. The top three (3) most common species by presence were 1) *Cephalanthus occidentalis* (present in 83% of points) 2) *Alternanthera philoxeroides* (present in 67% of points) and 3) *Juncus effuses* and *Panicum repens* (present in 54% of points). Non-native species (2 species) accounted for 8.3% of the 24 species observed. *Alternanthera philoxeroides* and *Panicum repens* (state noxious weeds), non-native species, were observed in Lake Mary Crawford. Of the 21 waterbodies surveyed, Lake Mary Crawford ranked 6th in diversity and evenness.

Lake Perry (MDWFP):

Lake Perry (31.13402N, -88.89932W) was surveyed on 19 July 2022. This waterbody is in Perry County in the southeastern region of Mississippi. Littoral zone depth was measured at 20.5' (6.25 m) (Table 13). Out of the 20 points surveyed 20, or 100% were vegetated. The top three (3) most common species by presence were 1) *Myrica cerifera* (present in 75% of points) 2) *Brasenia schreberi* (present in 50% of points) and 3) *Cephalanthus occidentalis* and *Hydrocotyle spp.* (present in 40 % of points). Non-native species (2 species) accounted for 9.5% of the 21 total species observed. *Alternanthera philoxeroides* and *Panicum repens* (state noxious weed), non-native species, were observed in Lake Perry. Of the 21 waterbodies surveyed, Lake Perry ranked 9th in diversity and evenness.

Maynor Creek Lake (PHWD):

Maynor Creek Lake (31.64981N, -88.71278W) was surveyed on 13 July 2022. This waterbody is in Wayne County in the southeastern region of Mississippi. Littoral zone depth was measured at 15.2' (4.63 m), (Table 14). Out of the 54 points surveyed 54, or 100% were vegetated. The top three (3) most common species by presence were 1) *Panicum repens* (present in 81% of points) 2) *Nymphaea odorata* (present in 76% of points) and 3) *Brasenia schreberi* (present in 70% of points). Non-native species (4 species) accounted for 15.4% of the 26 species observed. *Alternanthera philoxeroides*, *Myriophyllum spicatum*, and *Panicum repens* (state noxious weed), non-native species, were observed in Maynor Creek. Of the 21 waterbodies surveyed, Maynor Creek ranked 12th in diversity and evenness.

Okatibbee Lake (MDWFP):

Okatibbee Lake (32.50151N, -88.79643W) was surveyed on 14 July 2022. This waterbody is in Lauderdale County in the southeastern region of Mississippi. Littoral zone depth was measured at 7.0' (2.13 m) (Table 15). Out of the 70 points surveyed 69, or 98.6% were vegetated. The top three (3) most common species by presence were 1) *Zizaniopsis miliacea* (present in 83% of points) 2) *Cephalanthus occidentalis* (present in 65% of points) and 3) *Taxodium distichum* (present in 52% of points). Non-native species (3 species) accounted for 11.1% of the 27 species observed. *Alternanthera philoxeroides*, *Myriophyllum spicatum*, and *Oxycaryum cubense*, non-native species, were observed in Okatibbee Lake. Of the 21 waterbodies surveyed, Okatibbee Lake ranked 16th in diversity and evenness.

Prentiss Walker Lake (MDWFP):

Prentiss Walker Lake (31.82924N, -89.59992W) was surveyed on 21 July 2022. This waterbody is in Smith County in the southeastern region of Mississippi. Littoral zone depth was measured at 16' (4.88 m) (Table 16). Out of the 21 points surveyed 21, or 100% were vegetated. The top three (3) most common species by presence were 1) *Alternanthera philoxeroides* (present in 67% of points) 2) *Polygonum hydropiperoides* (present in 52% of points) and 3) *Hydrolea quadrivalvis* (present in 48% of points). Non-native species (2 species) accounted for 9.1% of the 22 species observed. *Alternanthera philoxeroides* and *Panicum repens* (state noxious weed), non-native species, were observed in Prentiss Walker Lake. Of the 21 waterbodies surveyed, Prentiss Walker Lake ranked 8th in diversity and evenness.

Ross Branch Reservoir (USFWS):

Ross Branch Reservoir (33.26512N, -88.86373W) was surveyed on 27 June 2022. This waterbody is in Winston County in the northeast region of Mississippi. Littoral zone depth was measured at 11.1' (3.38 m) (Table 17). Out of the 25 points surveyed 24, or 96% were vegetated. The top three (3) most common species by presence were 1) *Brasenia schreberi* (present in 96% of points) 2) *Nymphaea odorata* (present in 92% of points) and 3) *Cephalanthus occidentalis* (present in 88% of points). Non-native species (2 species) accounted for 9.5% of the 21 species observed. *Alternanthera philoxeroides*, a non-native species, was observed in Ross Branch Reservoir. Of the 21 waterbodies surveyed, Ross Branch Reservoir ranked 11th in diversity and evenness.

Spring Lake -Wall Doxey (MDWFP):

Spring Lake -Wall Doxey (34.66354N, -89.46733) was surveyed on 6 July 2022. This waterbody is in Marshall County in the northeastern region of Mississippi. Littoral zone depth was measured at 6.6' (2.01 m) (Table 18). Out of the 20 points surveyed 20, or 100% were vegetated. The top three (3) most common species by presence were 1) *Cephalanthus occidentalis* (present in 100% of points) 2) *Myriophyllum spicatum* and *Taxodium distichum* (present in 95% of points) and 3) *Lemna minor* (present in 45% of points). Non-native species (2 species) accounted for 10.0% of the 21 species observed. *Alternanthera philoxeroides* and *Myriophyllum spicatum*, non-native species, were observed in Spring Lake-Wall Doxey. Of the 21 waterbodies surveyed, Spring Lake - Wall Doxey ranked 19th diversity and evenness.

Trace State Park Lake (MDWFP):

Trace State Park Lake (34.24618N, -88.89714W) was surveyed on 6 July 2022. This waterbody is in Lee County in the northeastern region of Mississippi. Littoral zone depth was measured at 25.0' (7.62 m) (Table 19). Out of the 52 points surveyed 50, or 96.2% were vegetated. The top three (3) most common species by presence were 1) *Juncus effuses* (present in 92% of points) 2) *Potamogeton nodosus* (present in 84% of points) and 3) Filamentous algae (present in 82% of points). Non-native species (1 species) accounted for 3.4% of the 29 species observed. *Alternanthera philoxeroides*, a non-native species, was observed in Trace State Park Lake. Of the 21 waterbodies surveyed, Trace State Park Lake ranked 10th in diversity and evenness.

Turkey Creek Reservoir (PHW):

Turkey Creek Reservoir (32.40794N, -89.16074W) was surveyed on 18 July 2022. This waterbody is in Newton County in the northeastern region of Mississippi. Littoral zone depth was measured at 8.2' (2.50 m) (Table 20). Out of the 30 points surveyed 30, or 100% were vegetated. The top three (3) most common species by presence were 1) *Nymphaea odorata* (present in 100% of points) 2) *Brasenia schreberi* (present in 93% of points) and 3) *Myrica cerifera* and *Saururus cernuus* (present in 73% of points). Non-native species (2 species) accounted for 4.3% of the 23 species observed. *Alternanthera philoxeroides* and *Myriophyllum aquaticum*, non-native species, were observed in Turkey Creek Reservoir. Of the 21 waterbodies surveyed, Turkey Creek Reservoir ranked 15th in diversity and evenness.

Turkey Fork Reservoir (PHW):

Turkey Fork (31.33844N, -88.69743W) was surveyed on 20 July 2022. This waterbody is in Greene County in the southeastern region of Mississippi. Littoral zone depth was measured at 24.3' (7.41 m) (Table 21). Out of the 31 points surveyed 41, or 100% were vegetated. The top three (3) most common species by presence were 1) *Panicum repens* (present in 90% of points) 2) *Carex spp.*, *Hydrocotyle spp.*, and *Rhynchospora chalarocephala* (present in 59% of points) and 3) *Eleocharis compressa* (present in 49% of points). Non-native species (3 species) accounted for 9.7% of the 31 species observed. *Alternanthera philoxeroides*, *Myriophyllum spicatum*, and *Panicum repens* (state noxious weed), non-native species, were observed in Turkey Fork Reservoir. Of the 21 waterbodies surveyed, Turkey Fork Reservoir ranked 2nd in diversity and evenness.

Acknowledgements

Literature Cited

- Godfrey, R. K., and J. W. Wooten. 1979. Aquatic and Wetland Plants of Southeastern United States: Monocotyledons. University of Georgia Press, Athens, Georgia, USA.
- Godfrey, R. K., and J. W. Wooten. 1981. Aquatic and Wetland Plants of Southeastern United States: Dicotyledons. University of Georgia Press, Athens, Georgia, USA.
- Gurevitch, J., S. Scheiner, and G. Fox. 2002. The Ecology of Plants. Sinauer Associates, Sunderland, MA, USA.
- Loshbaugh, A. K., R. Campanella, S. Meaux, and Members of Mississippi Aquatic Invasive Species Task Force. 2013. Mississippi state management plan for aquatic invasive species. Page 161. Management Plan, Mississippi Department of Environmental Quality.
- Neal, J. W., and D. W. Willis. 2012. Small Impoundment Management in North America. American Fisheries Society, Bethesda, MD, USA.
- Turnage, G., A. Lazaro-Lobo, S. L. Sanders, and M. Thomas. 2019. 2019 survey of aquatic plant species in Mississippi waterbodies. Page 35. Technical report, Mississippi State University, Geosystems Research Institute, Starkville, MS, USA.

Turnage, G., A. Sample, and C. McLeod. 2020. 2020 survey of aquatic plant species in Mississippi waterbodies. Page 72. Technical report, Mississippi State University, Geosystems Research Institute, Starkville, Mississippi, USA.

Turnage, G., and C. Shoemaker. 2018. 2017 Survey of aquatic plant speices in Mississippi waterbodies. Page 69. Technical report, Mississippi State University, Geosystems Research Institute, Starkville, MS, USA.

USACE. 2023. United States Army Corps of Engineers. <https://www.mvk.usace.army.mil/>.

Wetzel, R. G. 2001. Limnology. Academic Press, San Diego, CA, USA.

Tables and Figures

Table 1. Macrophyte community of Archusa Creek Reservoir. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Archusa Creek Reservoir | | | |
|------------------------------------|---------------------------|-----------------------|--------------------|
| Littoral Depth | 10.5' | Date Surveyed | 20-Jul-22 |
| Species Richness | 30 | Total Pts. Sur | 35 |
| Native Species Richness | 27 | Total Pts. Veg | 35 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 6 | 17% |
| <i>Brasenia schreberi</i> | Watershield | 14 | 40% |
| <i>Carex spp.</i> | Sedge | 7 | 20% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 19 | 54% |
| <i>Chara spp.</i> | Muskgrass | 10 | 29% |
| <i>Colocasia esculenta</i> | Wild taro | 5 | 14% |
| <i>Diodia virginiana</i> | Virginia buttonweed | 1 | 3% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 2 | 6% |
| <i>Filamentous algae</i> | Algae | 7 | 20% |
| <i>Hydrocotyle spp.</i> | Pennywort | 19 | 54% |
| <i>Juncus effusus</i> | Common rush | 7 | 20% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 1 | 3% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 4 | 11% |
| <i>Lysimachia nummularia</i> | Creeping Jenny | 1 | 3% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 15 | 43% |
| <i>Myriophyllum aquaticum</i> | Parrotfeather | 2 | 6% |
| <i>Nymphaea odorata</i> | American white waterlily | 19 | 54% |
| <i>Paspalum distichum</i> | Knotgrass | 26 | 74% |
| <i>Peltandra virginica</i> | Green arrow arum | 16 | 46% |
| <i>Persicaria spp.</i> | Knotweed | 3 | 9% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 5 | 14% |
| <i>Potamogeton nodosus</i> | American pondweed | 4 | 11% |
| <i>Rhynchospora chalarocephala</i> | Loosehead beaksedge | 3 | 9% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 2 | 6% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 5 | 14% |
| <i>Saururus cernuus</i> | Lizard's tail | 15 | 43% |
| <i>Scirpus cyperinus</i> | Woolgrass | 5 | 14% |
| <i>Taxodium distichum</i> | Bald cypress | 8 | 23% |
| <i>Typha spp.</i> | Cattail | 2 | 6% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 19 | 54% |

Table 2. Macrophyte community of Bay Springs Reservoir. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Bay Springs Reservoir | | | |
|------------------------------------|-------------------------------|-----------------------|--------------------|
| Littoral Depth | 22.5' | Date Surveyed | 7-Jul-22 |
| Species Richness | 27 | Total Pts. Sur | 43 |
| Native Species Richness | 25 | Total Pts. Veg | 43 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 16 | 37% |
| <i>Brasenia schreberi</i> | Watershield | 1 | 2% |
| <i>Carex spp.</i> | Sedge | 34 | 79% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 24 | 56% |
| <i>Chara spp.</i> | Muskgrass | 21 | 49% |
| <i>Dulichium arundinaceum</i> | Three-way sedge | 2 | 5% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 4 | 9% |
| <i>Filamentous algae</i> | Algae | 9 | 21% |
| <i>Hibiscus lasiocarpus</i> | Woolly Rose-mallow | 5 | 12% |
| <i>Hydrilla verticillata</i> | Hydrilla | 21 | 49% |
| <i>Hydrocotyle spp.</i> | Pennywort | 5 | 12% |
| <i>Juncus effusus</i> | Common rush | 27 | 63% |
| <i>Juncus pelocarpus</i> | Brown-fruited rush | 14 | 33% |
| <i>Justicia americana</i> | American water-willow | 18 | 42% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 20 | 47% |
| <i>Myriophyllum aquaticum</i> | Parrotfeather | 1 | 2% |
| <i>Peltandra virginica</i> | Green arrow arum | 1 | 2% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 2 | 5% |
| <i>Potamogeton nodosus</i> | American pondweed | 21 | 49% |
| <i>Rhynchospora corniculata</i> | Shortbristle horned beaksedge | 3 | 7% |
| <i>Sagittaria latifolia</i> | Broadleaf arrowhead | 4 | 9% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 13 | 30% |
| <i>Salix nigra</i> | Black willow | 3 | 7% |
| <i>Saururus cernuus</i> | Lizard's tail | 16 | 37% |
| <i>Taxodium distichum</i> | Bald cypress | 11 | 26% |
| <i>Typha spp.</i> | Cattail | 2 | 5% |
| <i>Zizaniopsis miliacea</i> | Giant Cutgrass | 32 | 74% |

Table 3. Macrophyte community of Big Creek. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Big Creek | | | |
|------------------------------------|---------------------------|-----------------------|--------------------|
| Littoral Depth | 12.2' | Date Surveyed | 20-Jul-22 |
| Species Richness | 14 | Total Pts. Sur | 20 |
| Native Species Richness | 13 | Total Pts. Veg | 20 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 19 | 95% |
| <i>Carex spp.</i> | Sedge | 1 | 5% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 10 | 50% |
| <i>Chara spp.</i> | Muskgrass | 4 | 20% |
| <i>Filamentous algae</i> | Algae | 2 | 10% |
| <i>Hydrocotyle spp.</i> | Pennywort | 7 | 35% |
| <i>Hydrolea quadrivalvis</i> | Waterpod | 11 | 55% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 3 | 15% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 9 | 45% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 2 | 10% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 1 | 5% |
| <i>Salix nigra</i> | Black willow | 4 | 20% |
| <i>Saururus cernuus</i> | Lizard's tail | 2 | 10% |
| <i>Taxodium distichum</i> | Bald cypress | 8 | 40% |

Table 4. Macrophyte community of Bluff Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Bluff Lake | | | |
|------------------------------------|-----------------------------------|-----------------------|--------------------|
| Littoral Depth | 7.0' | Date Surveyed | 22-Jun-22 |
| Species Richness | 27 | Total Pts. Sur | 61 |
| Native Species Richness | 21 | Total Pts. Veg | 61 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 48 | 79% |
| <i>Brasenia schreberi</i> | Watershield | 1 | 2% |
| <i>Carex spp.</i> | Sedge | 1 | 2% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 28 | 46% |
| <i>Ceratophyllum demersum</i> | Coontail | 36 | 59% |
| <i>Chara spp.</i> | Muskgrass | 8 | 13% |
| <i>Filamentous algae</i> | Algae | 27 | 44% |
| <i>Hydrilla verticillata</i> | Hydrilla | 29 | 48% |
| <i>Lemna minor</i> | Common duckweed | 28 | 46% |
| <i>Limnobium spongia</i> | American frogbit | 45 | 74% |
| <i>Ludwigia hexapetala</i> | Six-flower primrose-willow | 6 | 10% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 5 | 8% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 14 | 23% |
| <i>Myriophyllum aquaticum</i> | Parrotfeather | 22 | 36% |
| <i>Myriophyllum spicatum</i> | Eurasian milfoil | 1 | 2% |
| <i>Nelumbo lutea</i> | American lotus | 45 | 74% |
| <i>Nymphaea odorata</i> | American white waterlily | 15 | 25% |
| <i>Oxycaryum cubense</i> | Cuban bulrush | 20 | 33% |
| <i>Persicaria hydropiperoides</i> | Swamp Smartweed | 17 | 28% |
| <i>Potamogeton pulcher</i> | Spotted pondweed | 1 | 2% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 2 | 3% |
| <i>Sagittaria latifolia</i> | Broadleaf arrowhead | 1 | 2% |
| <i>Salix nigra</i> | Black willow | 4 | 7% |
| <i>Saururus cernuus</i> | Lizard's tail | 6 | 10% |
| <i>Taxodium distichum</i> | Bald Cypress | 58 | 95% |
| <i>Typha spp.</i> | Cattail | 2 | 3% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 54 | 89% |

Table 5. Macrophyte community of Choctaw Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Choctaw Lake | | | |
|------------------------------------|-------------------------------|-----------------------|---------------------|
| Littoral Depth | 6.0' | Date Surveyed | 10-Jun-22 |
| Species Richness | 20 | Total Pts. Sur | 30 |
| Native Species Richness | 18 | Total Pts. Veg | 30 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %- Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 25 | 83% |
| <i>Carex spp.</i> | Sedge | 23 | 77% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 11 | 37% |
| <i>Ceratophyllum demersum</i> | Coontail | 1 | 3% |
| <i>Eleocharis obtusa</i> | Blunt spikerush | 1 | 3% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 11 | 37% |
| <i>Hydrocotyle umbellata</i> | Manyflower marshpennywort | 2 | 7% |
| <i>Juncus effusus</i> | Common rush | 25 | 83% |
| <i>Justicia americana</i> | American water-willow | 1 | 3% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 19 | 63% |
| <i>Lysimachia nummularia</i> | Creeping Jenny | 2 | 7% |
| <i>Panicum repens</i> | Torpedo grass | 10 | 33% |
| <i>Paspalum notatum</i> | Bahiagrass | 12 | 40% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 3 | 10% |
| <i>Rhynchospora corniculata</i> | Shortbristle horned beaksedge | 4 | 13% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 3 | 10% |
| <i>Saururus cernuus</i> | Lizard's tail | 9 | 30% |
| <i>Taxodium distichum</i> | Bald cypress | 2 | 7% |
| <i>Typha spp.</i> | Cattail | 4 | 13% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 2 | 7% |

Table 6. Macrophyte community of Doyle Arm. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Doyle Arm | | | |
|------------------------------------|--------------------------|------------------------|---------------------|
| Littoral Depth | 5.2' | Date Surveyed | 24-Jun-22 |
| Species Richness | 28 | Total Pts. Sur | 25 |
| Native Speces Richness | 24 | Total Pts. Veg | 25 |
| | | %- Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %- Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 8 | 32% |
| <i>Bacopa caroliniana</i> | Blue waterhyssop | 1 | 4% |
| <i>Brasenia schreberi</i> | Watershield | 12 | 48% |
| <i>Carex spp.</i> | Sedge | 2 | 8% |
| <i>Cephalanthus occidentalis</i> | Common Buttonbush | 14 | 56% |
| <i>Ceratophyllum demersum</i> | Coontail | 17 | 68% |
| <i>Chara spp.</i> | Muskgrass | 19 | 76% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 11 | 44% |
| <i>Eleocharis vivipara</i> | Viviparous spikerush | 2 | 8% |
| <i>Filamentous algae</i> | Algae | 13 | 52% |
| <i>Hydrilla verticillata</i> | Hydrilla | 5 | 20% |
| <i>Juncus effusus</i> | Common rush | 5 | 20% |
| <i>Limnobium spongia</i> | American frogbit | 22 | 88% |
| <i>Myriophyllum spicatum</i> | Eurasian milfoil | 1 | 4% |
| <i>Nelumbo lutea</i> | American lotus | 18 | 72% |
| <i>Nymphaea odorata</i> | American white waterlily | 20 | 80% |
| <i>Oxycaryum cubense</i> | Cuban bulrush | 13 | 52% |
| <i>Persicaria hydropiperoides</i> | Swamp Smartweed | 11 | 44% |
| <i>Persicaria spp.</i> | Knotweed | 2 | 8% |
| <i>Potamogeton pulcher</i> | Spotted pondweed | 1 | 4% |
| <i>Ricciocarpos natans</i> | Liverwort | 1 | 4% |
| <i>Sagittaria latifolia</i> | Broadleaf arrowhead | 4 | 16% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 8 | 32% |
| <i>Salix nigra</i> | Black Willow | 6 | 24% |
| <i>Saururus cernuus</i> | Lizard's tail | 7 | 28% |
| <i>Taxodium distichum</i> | Bald Cypress | 24 | 96% |
| <i>Typha spp.</i> | Cattail | 1 | 4% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 16 | 64% |

Table 7. Macrophyte community of Kemper County Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Kemper County Lake | | | |
|------------------------------------|-----------------------------------|-----------------------|------------------------|
| Littoral Depth | 16.5' | Date Surveyed | 6/27/22-6/29/22 |
| Species Richness | 28 | Total Pts. Sur | 89 |
| Native Species Richness | 24 | Total Pts. Veg | 89 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 37 | 42% |
| <i>Betula nigra</i> | River birch | 1 | 1% |
| <i>Brasenia schreberi</i> | Watershield | 21 | 24% |
| <i>Carex spp.</i> | Sedge | 52 | 58% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 52 | 58% |
| <i>Ceratophyllum demersum</i> | Coontail | 5 | 6% |
| <i>Dulichium arundinaceum</i> | Three-way sedge | 34 | 38% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 15 | 17% |
| <i>Hydrilla verticillata</i> | Hydrilla | 2 | 2% |
| <i>Hydrocotyle spp.</i> | Pennywort | 18 | 20% |
| <i>Juncus effusus</i> | Common rush | 67 | 75% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 6 | 7% |
| <i>Ludwigia hexapetala</i> | Six-flower primrose-willow | 6 | 7% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 33 | 37% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 15 | 17% |
| <i>Lysimachia nummularia</i> | Creeping jenny | 2 | 2% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 61 | 69% |
| <i>Myriophyllum spicatum</i> | Eurasian Milfoil | 3 | 3% |
| <i>Nymphaea odorata</i> | American white waterlily | 20 | 22% |
| <i>Peltandra virginica</i> | Green arrow arum | 66 | 74% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 24 | 27% |
| <i>Potamogeton nodosus</i> | American pondweed | 17 | 19% |
| <i>Potamogeton pulcher</i> | Spotted pondweed | 16 | 18% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 11 | 12% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 17 | 19% |
| <i>Saururus cernuus</i> | Lizard's tail | 22 | 25% |
| <i>Typha spp.</i> | Cattail | 7 | 8% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 27 | 30% |

Table 8. 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.

| Lake Bill Waller | | | |
|------------------------------------|--------------------------|-----------------------|--------------------|
| Littoral Depth | 20.2' | Date Surveyed | 11-Jul-22 |
| Species Richness | 23 | Total Pts. Sur | 35 |
| Native Species Richness | 19 | Total Pts. Veg | 34 |
| | | %-Littoral Veg | 97.1 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 2 | 6% |
| <i>Brasenia schreberi</i> | Watershield | 33 | 97% |
| <i>Carex spp.</i> | Sedge | 18 | 53% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 29 | 85% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 20 | 59% |
| <i>Hydrocotyle spp.</i> | Pennywort | 17 | 50% |
| <i>Juncus effusus</i> | Common rush | 4 | 12% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 4 | 12% |
| <i>Lysimachia nummularia</i> | Creeping Jenny | 1 | 3% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 26 | 76% |
| <i>Myriophyllum spicatum</i> | Eurasian Milfoil | 34 | 100% |
| <i>Nelumbo lutea</i> | American lotus | 1 | 3% |
| <i>Nymphaea odorata</i> | American white waterlily | 34 | 100% |
| <i>Panicum repens</i> | Torpedo grass | 34 | 100% |
| <i>Phalaris arundinacea</i> | Reed canary grass | 1 | 3% |
| <i>Persicaria spp.</i> | Knotweed | 2 | 6% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 1 | 3% |
| <i>Sagittaria latifolia</i> | Broadleaf arrowhead | 1 | 3% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 2 | 6% |
| <i>Saururus cernuus</i> | Lizard's tail | 18 | 53% |
| <i>Scirpus cyperinus</i> | Woolgrass | 9 | 26% |
| <i>Typha spp.</i> | Cattail | 24 | 71% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 22 | 65% |

Table 9. 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.

| Lake Columbia | | | |
|------------------------------------|-------------------------------|-----------------------|--------------------|
| Littoral Depth | 23.5' | Date Surveyed | 12-Jul-22 |
| Species Richness | 24 | Total Pts. Sur | 27 |
| Native Species Richness | 21 | Total Pts. Veg | 26 |
| | | %-Littoral Veg | 96.3 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 7 | 27% |
| <i>Brasenia schreberi</i> | Watershield | 26 | 100% |
| <i>Carex spp.</i> | Sedge | 6 | 23% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 13 | 50% |
| <i>Colocasia esculenta</i> | Wild taro | 1 | 4% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 5 | 19% |
| <i>Filamentous algae</i> | Algae | 8 | 31% |
| <i>Juncus effusus</i> | Common rush | 1 | 4% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 3 | 12% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 2 | 8% |
| <i>Ludwigia repens</i> | Creeping primrose-willow | 4 | 15% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 10 | 38% |
| <i>Myriophyllum spicatum</i> | Eurasian milfoil | 25 | 96% |
| <i>Nelumbo lutea</i> | American lotus | 6 | 23% |
| <i>Nymphaea odorata</i> | American white waterlily | 23 | 88% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 8 | 31% |
| <i>Persicaria spp.</i> | Knotweed | 1 | 4% |
| <i>Rhynchospora corniculata</i> | Shortbristle Horned Beaksedge | 23 | 88% |
| <i>Sagittaria lancifolia</i> | Bulltongue Arrowhead | 1 | 4% |
| <i>Salix nigra</i> | Black Willow | 4 | 15% |
| <i>Saururus cernuus</i> | Lizard's tail | 13 | 50% |
| <i>Scirpus cyperinus</i> | Woolgrass | 7 | 27% |
| <i>Typha spp.</i> | Cattail | 24 | 92% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 5 | 19% |

Table 10. Macrophyte community of Loakfoma Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Loakfoma Lake | | | |
|------------------------------------|---------------------------|-----------------------|--------------------|
| Littoral Depth | 6.5' | Date Surveyed | 24-Jun-22 |
| Species Richness | 25 | Total Pts. Sur | 56 |
| Native Species Richness | 23 | Total Pts. Veg | 56 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 22 | 39% |
| <i>Brasenia schreberi</i> | Watershield | 34 | 61% |
| <i>Carex spp.</i> | Sedge | 1 | 2% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 46 | 82% |
| <i>Eleocharis tricostata</i> | Three-angled spikesedge | 4 | 7% |
| <i>Filamentous algae</i> | Algae | 19 | 34% |
| <i>Hydrilla verticillata</i> | Hydrilla | 4 | 7% |
| <i>Juncus effusus</i> | Common rush | 7 | 13% |
| <i>Lemna minor</i> | Common duckweed | 2 | 4% |
| <i>Limnobium spongia</i> | American frogbit | 49 | 88% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 1 | 2% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 2 | 4% |
| <i>Nelumbo lutea</i> | American lotus | 27 | 48% |
| <i>Nymphaea odorata</i> | American white water-lily | 46 | 82% |
| <i>Persicaria hydropiperoides</i> | Swamp Smartweed | 9 | 16% |
| <i>Persicaria spp.</i> | Knotweed | 4 | 7% |
| <i>Potamogeton foliosus</i> | Leafy pondweed | 2 | 4% |
| <i>Ricciocarpos natans</i> | Liverwort | 1 | 2% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 6 | 11% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 11 | 20% |
| <i>Salix nigra</i> | Black willow | 36 | 64% |
| <i>Saururus cernuus</i> | Lizard's tail | 5 | 9% |
| <i>Taxodium distichum</i> | Bald cypress | 39 | 70% |
| <i>Typha spp.</i> | Cattail | 10 | 18% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 56 | 100% |

Table 11. Macrophyte community of Lake Lowndes. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Lake Lowndes | | | |
|------------------------------------|-----------------------------------|-----------------------|--------------------|
| Littoral Depth | 5.2' | Date Surveyed | 9-Jun-22 |
| Species Richness | 24 | Total Pts. Sur | 40 |
| Native Species Richness | 21 | Total Pts. Veg | 40 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 12 | 30% |
| <i>Carex spp.</i> | Sedge | 15 | 38% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 20 | 50% |
| <i>Chara spp.</i> | Muskgrass | 1 | 3% |
| <i>Cladium mariscus</i> | Saw-grass | 2 | 5% |
| <i>Eleocharis elongata</i> | Slim spikerush | 2 | 5% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 1 | 3% |
| <i>Filamentous algae</i> | Algae | 15 | 38% |
| <i>Hydrocotyle spp.</i> | Pennywort | 26 | 65% |
| <i>Iris spp.</i> | Iris | 1 | 3% |
| <i>Juncus effusus</i> | Common Rush | 28 | 70% |
| <i>Ludwigia hexapetala</i> | Six-flower primrose-willow | 28 | 70% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 9 | 23% |
| <i>Lysimachia nummularia</i> | Creeping jenny | 28 | 70% |
| <i>Mimulus rigens</i> | Allegheny monkeyflower | 2 | 5% |
| <i>Myriophyllum aquaticum</i> | Parrotfeather | 7 | 18% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 6 | 15% |
| <i>Persicaria pennsylvanicum</i> | Pennsylvania smartweed | 2 | 5% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 4 | 10% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 1 | 3% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 1 | 3% |
| <i>Salix nigra</i> | Black willow | 3 | 8% |
| <i>Saururus cernuus</i> | Lizard's tail | 4 | 10% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 1 | 3% |

Table 12. 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.

| Lake Mary Crawford | | | |
|------------------------------------|--------------------------|-----------------------|--------------------|
| Littoral Depth | 9.3' | Date Surveyed | 11-Jul-22 |
| Species Richness | 24 | Total Pts. Sur | 24 |
| Native Species Richness | 22 | Total Pts. Veg | 24 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 16 | 67% |
| <i>Carex spp.</i> | Sedge | 7 | 29% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 20 | 83% |
| <i>Chara spp.</i> | Muskgrass | 2 | 8% |
| <i>Diodia virginiana</i> | Virginia Buttonweed | 2 | 8% |
| <i>Eichhornia crassipes</i> | Water hyacinth | 4 | 17% |
| <i>Eleocharis compressa</i> | Flatstem Spikerush | 2 | 8% |
| <i>Filamentous algae</i> | Algae | 1 | 4% |
| <i>Hydrocotyle spp.</i> | Pennywort | 1 | 4% |
| <i>Juncus effusus</i> | Common rush | 13 | 54% |
| <i>Lemna minor</i> | Common duckweed | 1 | 4% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 7 | 29% |
| <i>Myrica cerifera</i> | Southern Wax myrtle | 5 | 21% |
| <i>Nelumbo lutea</i> | American lotus | 12 | 50% |
| <i>Nymphaea odorata</i> | American white waterlily | 5 | 21% |
| <i>Panicum repens</i> | Torpedo grass | 13 | 54% |
| <i>Persicaria pennsylvanicum</i> | Pennsylvania smartweed | 11 | 46% |
| <i>Potamogeton pulcher</i> | spotted pondweed | 1 | 4% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 5 | 21% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 2 | 8% |
| <i>Salix nigra</i> | Black willow | 9 | 38% |
| <i>Saururus cernuus</i> | Lizard's tail | 9 | 38% |
| <i>Typha spp.</i> | Cattail | 7 | 29% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 5 | 21% |

Table 13. 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.

| Lake Perry | | | |
|------------------------------------|---------------------------|-----------------------|--------------------|
| Littoral Depth | 20.5' | Date Surveyed | 19-Jul-22 |
| Species Richness | 21 | Total Pts. Sur | 20 |
| Native Species Richness | 19 | Total Pts. Veg | 20 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 7 | 35% |
| <i>Brasenia schreberi</i> | Watershield | 10 | 50% |
| <i>Carex spp.</i> | Sedge | 6 | 30% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 8 | 40% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 2 | 10% |
| <i>Eleocharis tricostata</i> | Three-angled spikesedge | 1 | 5% |
| <i>Filamentous algae</i> | Algae | 2 | 10% |
| <i>Hydrocotyle spp.</i> | Pennywort | 8 | 40% |
| <i>Juncus effusus</i> | Common rush | 1 | 5% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 6 | 30% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 5 | 25% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 15 | 75% |
| <i>Nymphaea odorata</i> | American white waterlily | 5 | 25% |
| <i>Panicum repens</i> | Torpedo grass | 6 | 30% |
| <i>Peltandra virginica</i> | Green arrow arum | 4 | 20% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 2 | 10% |
| <i>Persicaria spp.</i> | Knotweed | 1 | 5% |
| <i>Potamogeton nodosus</i> | American pondweed | 2 | 10% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 2 | 10% |
| <i>Saururus cernuus</i> | Lizard's tail | 1 | 5% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 3 | 15% |

Table 14. 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.

| Maynor Creek Lake | | | |
|------------------------------------|-----------------------------------|-----------------------|--------------------|
| Littoral Depth | 15.2' | Date Surveyed | 13-Jul-22 |
| Species Richness | 26 | Total Pts. Sur | 54 |
| Native Species Richness | 22 | Total Pts. Veg | 54 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 2 | 4% |
| <i>Bacopa caroliniana</i> | Blue waterhyssop | 17 | 31% |
| <i>Brasenia schreberi</i> | Watershield | 38 | 70% |
| <i>Carex spp.</i> | Sedge | 18 | 33% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 25 | 46% |
| <i>Dulichium arundinaceum</i> | Three-way sedge | 2 | 4% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 6 | 11% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 1 | 2% |
| <i>Juncus effusus</i> | Common rush | 1 | 2% |
| <i>Ludwigia hexapetala</i> | Six-flower primrose-willow | 18 | 33% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 8 | 15% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 23 | 43% |
| <i>Lysimachia nummularia</i> | Creeping Jenny | 1 | 2% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 23 | 43% |
| <i>Myriophyllum spicatum</i> | Eurasian milfoil | 11 | 20% |
| <i>Nelumbo lutea</i> | American lotus | 2 | 4% |
| <i>Nymphaea odorata</i> | American white waterlily | 41 | 76% |
| <i>Panicum repens</i> | Torpedo grass | 44 | 81% |
| <i>Persicaria hydropiperoides</i> | Swamp Smartweed | 6 | 11% |
| <i>Potamogeton nodosus</i> | American pondweed | 1 | 2% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 1 | 2% |
| <i>Salix nigra</i> | Black willow | 1 | 2% |
| <i>Saururus cernuus</i> | Lizard's tail | 8 | 15% |
| <i>Scirpus Cyperinus</i> | Woolgrass | 10 | 19% |
| <i>Taxodium distichum</i> | Bald cypress | 1 | 2% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 19 | 35% |

Table 15. Macrophyte community of Okatibbee Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Okatibbee Lake | | | |
|------------------------------------|--------------------------|-----------------------|--------------------|
| Littoral Depth | 7.0' | Date Surveyed | 14-Jul-22 |
| Species Richness | 27 | Total Pts. Sur | 70 |
| Native Species Richness | 24 | Total Pts. Veg | 69 |
| | | %-Littoral Veg | 98.6 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 29 | 42% |
| <i>Betula nigra</i> | River Birch | 2 | 3% |
| <i>Brasenia schreberi</i> | Watershield | 5 | 7% |
| <i>Carex spp.</i> | Sedge | 9 | 13% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 45 | 65% |
| <i>Chara spp.</i> | Muskgrass | 7 | 10% |
| <i>Filamentous algae</i> | Algae | 4 | 6% |
| <i>Hibiscus lasiocarpus</i> | Woolly rose-mallow | 1 | 1% |
| <i>Hydrocotyle spp.</i> | Pennywort | 10 | 14% |
| <i>Juncus effusus</i> | Common rush | 4 | 6% |
| <i>Juncus pelocarpus</i> | Brown-fruited rush | 2 | 3% |
| <i>Justicia americana</i> | American water-willow | 1 | 1% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 4 | 6% |
| <i>Myriophyllum spicatum</i> | Eurasian milfoil | 7 | 10% |
| <i>Nelumbo lutea</i> | American lotus | 6 | 9% |
| <i>Nymphaea odorata</i> | American white waterlily | 25 | 36% |
| <i>Oxycaryum cubense</i> | Cuban bulrush | 1 | 1% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 4 | 6% |
| <i>Persicaria spp.</i> | Knotweed | 1 | 1% |
| <i>Potamogeton nodosus</i> | American pondweed | 5 | 7% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 3 | 4% |
| <i>Salix nigra</i> | Black willow | 22 | 32% |
| <i>Saururus cernuus</i> | Lizard's tail | 4 | 6% |
| <i>Scirpus cyperinus</i> | Woolgrass | 11 | 16% |
| <i>Taxodium distichum</i> | Bald cypress | 36 | 52% |
| <i>Typha spp.</i> | Cattail | 1 | 1% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 57 | 83% |

Table 16. 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.

| Prentiss Walker Lake | | | |
|------------------------------------|--------------------------|-----------------------|--------------------|
| Littoral Depth | 16' | Date Surveyed | 21-Jul-22 |
| Species Richness | 22 | Total Pts. Sur | 21 |
| Native Species Richness | 20 | Total Pts. Veg | 21 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 14 | 67% |
| <i>Carex spp.</i> | Sedge | 6 | 29% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 9 | 43% |
| <i>Diodia virginiana</i> | Virginia buttonweed | 1 | 5% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 1 | 5% |
| <i>Filamentous algae</i> | Algae | 4 | 19% |
| <i>Hydrocotyle spp.</i> | Pennywort | 6 | 29% |
| <i>Hydrolea quadrivalvis</i> | Waterpod | 10 | 48% |
| <i>Juncus effusus</i> | Common rush | 4 | 19% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 3 | 14% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 2 | 10% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 2 | 10% |
| <i>Panicum repens</i> | Torpedo grass | 1 | 5% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 11 | 52% |
| <i>Rhynchospora chalarocephala</i> | Loosehead beaksedge | 2 | 10% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 1 | 5% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 2 | 10% |
| <i>Salix nigra</i> | Black willow | 1 | 5% |
| <i>Saururus cernuus</i> | Lizard's tail | 8 | 38% |
| <i>Scirpus cyperinus</i> | Woolgrass | 2 | 10% |
| <i>Sparganium americanum</i> | American bur-reed | 6 | 29% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 5 | 24% |

Table 17. Macrophyte community of Ross Branch Reservoir. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Ross Branch Reservoir | | | |
|------------------------------------|----------------------------|------------------------|--------------------|
| Littoral Depth | 11.1' | Date Surveyed | 27-Jun-22 |
| Species Richness | 21 | Total Pts. Sur. | 25 |
| Native Species Richness | 19 | Total Pts. Veg | 24 |
| | | %-Littoral Veg | 96 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 19 | 79% |
| <i>Brasenia schreberi</i> | Watershield | 23 | 96% |
| <i>Carex spp.</i> | Sedge | 16 | 67% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 21 | 88% |
| <i>Chara spp.</i> | Muskgrass | 17 | 71% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 2 | 8% |
| <i>Filamentous algae</i> | Algae | 3 | 13% |
| <i>Juncus effusus</i> | Common rush | 9 | 38% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 9 | 38% |
| <i>Ludwigia hexapetala</i> | Six-flower primrose-willow | 4 | 17% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 8 | 33% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 5 | 21% |
| <i>Nelumbo lutea</i> | American lotus | 3 | 13% |
| <i>Nymphaea odorata</i> | American white waterlily | 22 | 92% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 4 | 17% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 1 | 4% |
| <i>Potamogeton nodosus</i> | American pondweed | 4 | 17% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 1 | 4% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 20 | 83% |
| <i>Salix nigra</i> | Black willow | 6 | 25% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 13 | 54% |

Table 18. Macrophyte community of Spring Lake – Wall Doxey. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Spring Lake - Wall Doxey | | | |
|------------------------------------|------------------------|-----------------------|---------------------|
| Littoral Depth | 6.6' | Date Surveyed | 6-Jul-22 |
| Species Richness | 20 | Total Pts. Sur | 20 |
| Native Species Richness | 18 | Total Pts. Veg | 20 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | # Pts. Present | %- Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 4 | 20% |
| <i>Azolla caroliniana</i> | Carolina mosquitofern | 2 | 10% |
| <i>Carex spp.</i> | Sedge | 5 | 25% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 20 | 100% |
| <i>Dulichium arundinaceum</i> | Three-way sedge | 2 | 10% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 2 | 10% |
| <i>Filamentous algae</i> | Algae | 8 | 40% |
| <i>Hydrocotyle spp.</i> | Pennywort | 2 | 10% |
| <i>Iris spp.</i> | Iris | 1 | 5% |
| <i>Juncus effusus</i> | Common rush | 4 | 20% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 4 | 20% |
| <i>Lemna minor</i> | Common duckweed | 9 | 45% |
| <i>Myriophyllum spicatum</i> | Eurasian watermilfoil | 19 | 95% |
| <i>Persicaria pennsylvanicum</i> | Pennsylvania smartweed | 1 | 5% |
| <i>Ricciocarpos natans</i> | Liverwort | 1 | 5% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 2 | 10% |
| <i>Saururus cernuus</i> | Lizard's tail | 1 | 5% |
| <i>Taxodium distichum</i> | Bald cypress | 19 | 95% |
| <i>Typha spp.</i> | Cattail | 2 | 10% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 1 | 5% |

Table 19. Macrophyte community of Trace State Park Lake. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Trace State Park Lake | | | |
|------------------------------------|-------------------------------|-----------------------|--------------------|
| Littoral Depth | 25.0' | Date Surveyed | 6-Jul-22 |
| Species Richness | 29 | Total Pts. Sur | 52 |
| Native Species Richness | 28 | Total Pts. Veg | 50 |
| | | %-Littoral Veg | 96.2 |
| Scientific Name | Common Name | # Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 7 | 14% |
| <i>Brasenia schreberi</i> | Watershield | 1 | 2% |
| <i>Carex spp.</i> | Sedge | 13 | 26% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 24 | 48% |
| <i>Ceratophyllum demersum</i> | Coontail | 35 | 70% |
| <i>Chara spp.</i> | Muskgrass | 9 | 18% |
| <i>Diodia virginiana</i> | Virginia buttonweed | 1 | 2% |
| <i>Dulichium arundinaceum</i> | Three-way sedge | 1 | 2% |
| <i>Eleocharis obtusa</i> | Blunt Spikerush | 3 | 6% |
| <i>Eleocharis quadrangulata</i> | Squarestem spikerush | 11 | 22% |
| <i>Filamentous algae</i> | Algae | 41 | 82% |
| <i>Juncus effusus</i> | Common rush | 46 | 92% |
| <i>Juncus pelocarpus</i> | Brown-fruited rush | 4 | 8% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 27 | 54% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 1 | 2% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 1 | 2% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 1 | 2% |
| <i>Najas guadalupensis</i> | Southern naiad | 39 | 78% |
| <i>Nelumbo lutea</i> | American lotus | 2 | 4% |
| <i>Persicaria pennsylvanicum</i> | Pennsylvania smartweed | 6 | 12% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 1 | 2% |
| <i>Potamogeton nodosus</i> | American pondweed | 42 | 84% |
| <i>Rhynchospora corniculata</i> | Shortbristle horned beaksedge | 7 | 14% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 1 | 2% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 2 | 4% |
| <i>Salix nigra</i> | Black willow | 8 | 16% |
| <i>Saururus cernuus</i> | Lizard's tail | 9 | 18% |
| <i>Taxodium distichum</i> | Bald cypress | 3 | 6% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 37 | 74% |

Table 20. Macrophyte community of Turkey Creek Reservoir. Species in red are non-native and species in bold font are listed as federal and/or Mississippi state noxious weeds.

| Turkey Creek Reservoir | | | |
|------------------------------------|---------------------------|-----------------------|--------------------|
| Littoral Depth | 8.2' | Date Surveyed | 18-Jul-22 |
| Species Richness | 23 | Total Pts. Sur | 30 |
| Native Species Richness | 22 | Total Pts. Veg | 30 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 11 | 37% |
| <i>Brasenia schreberi</i> | Watershield | 28 | 93% |
| <i>Carex spp.</i> | Sedge | 12 | 40% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 13 | 43% |
| <i>Chara spp.</i> | Muskgrass | 5 | 17% |
| <i>Diodia virginiana</i> | Virginia buttonweed | 1 | 3% |
| <i>Filamentous algae</i> | Algae | 20 | 67% |
| <i>Hydrocotyle spp.</i> | Pennywort | 1 | 3% |
| <i>Juncus effusus</i> | Common rush | 21 | 70% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 8 | 27% |
| <i>Ludwigia leptocarpa</i> | Anglestem primrose-willow | 2 | 7% |
| <i>Ludwigia peploides</i> | Floating primrose-willow | 1 | 3% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 22 | 73% |
| <i>Myriophyllum aquaticum</i> | Parrotfeather | 2 | 7% |
| <i>Nelumbo lutea</i> | American lotus | 1 | 3% |
| <i>Nymphaea odorata</i> | American white waterlily | 30 | 100% |
| <i>Persicaria hydropiperoides</i> | Swamp smartweed | 3 | 10% |
| <i>Potamogeton nodosus</i> | American pondweed | 13 | 43% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 1 | 3% |
| <i>Sagittaria platyphylla</i> | Delta arrowhead | 1 | 3% |
| <i>Salix nigra</i> | Black willow | 1 | 3% |
| <i>Saururus cernuus</i> | Lizard's tail | 22 | 73% |
| <i>Zizaniopsis miliacea</i> | Gaint cutgrass | 11 | 37% |

Table 21. 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.

| Turkey Fork Reservoir | | | |
|------------------------------------|--------------------------|-----------------------|--------------------|
| Littoral Depth | 24.3' | Date Surveyed | 20-Jul-22 |
| Species Richness | 31 | Total Pts. Sur | 41 |
| Native Species Richness | 28 | Total Pts. Veg | 41 |
| | | %-Littoral Veg | 100 |
| Scientific Name | Common Name | #-Pts. Present | %-Frequency |
| <i>Alternanthera philoxeroides</i> | Alligatorweed | 7 | 17% |
| <i>Brasenia schreberi</i> | Watershield | 5 | 12% |
| <i>Carex spp.</i> | Sedge | 24 | 59% |
| <i>Cephalanthus occidentalis</i> | Common buttonbush | 8 | 20% |
| <i>Diodia virginiana</i> | Virginia buttonweed | 2 | 5% |
| <i>Eichhornia crassipes</i> | Water hyacinth | 5 | 12% |
| <i>Eleocharis compressa</i> | Flatstem spikerush | 20 | 49% |
| <i>Eleocharis palustris</i> | Common spikerush | 6 | 15% |
| <i>Filamentous algae</i> | Algae | 15 | 37% |
| <i>Hydrocotyle spp.</i> | Pennywort | 24 | 59% |
| <i>Juncus acuminatus</i> | Tapertip rush | 2 | 5% |
| <i>Juncus dudleyi</i> | Dudley's rush | 6 | 15% |
| <i>Juncus effusus</i> | Common rush | 2 | 5% |
| <i>Juncus marginatus</i> | Grassleaf rush | 13 | 32% |
| <i>Leersia oryzoides</i> | Rice cutgrass | 18 | 44% |
| <i>Lysimachia nummularia</i> | Creeping Jenny | 1 | 2% |
| <i>Myrica cerifera</i> | Southern wax myrtle | 9 | 22% |
| <i>Myriophyllum spicatum</i> | Eurasian milfoil | 2 | 5% |
| <i>Nymphaea odorata</i> | American white waterlily | 11 | 27% |
| <i>Panicum repens</i> | Torpedo grass | 37 | 90% |
| <i>Paspalum distichum</i> | Knotgrass | 4 | 10% |
| <i>Peltandra virginica</i> | Green arrow arum | 2 | 5% |
| <i>Persicaria spp.</i> | Knotweed | 14 | 34% |
| <i>Potamogeton diversifolius</i> | waterthread pondweed | 4 | 10% |
| <i>Rhynchospora chalarocephala</i> | Loosehead beaksedge | 24 | 59% |
| <i>Sagittaria lancifolia</i> | Bulltongue arrowhead | 2 | 5% |
| <i>Salix nigra</i> | Black willow | 2 | 5% |
| <i>Saururus cernuus</i> | Lizard's tail | 3 | 7% |
| <i>Scirpus cyperinus</i> | Woolgrass | 11 | 27% |
| <i>Taxodium distichum</i> | Bald cypress | 5 | 12% |
| <i>Zizaniopsis miliacea</i> | Giant cutgrass | 11 | 27% |

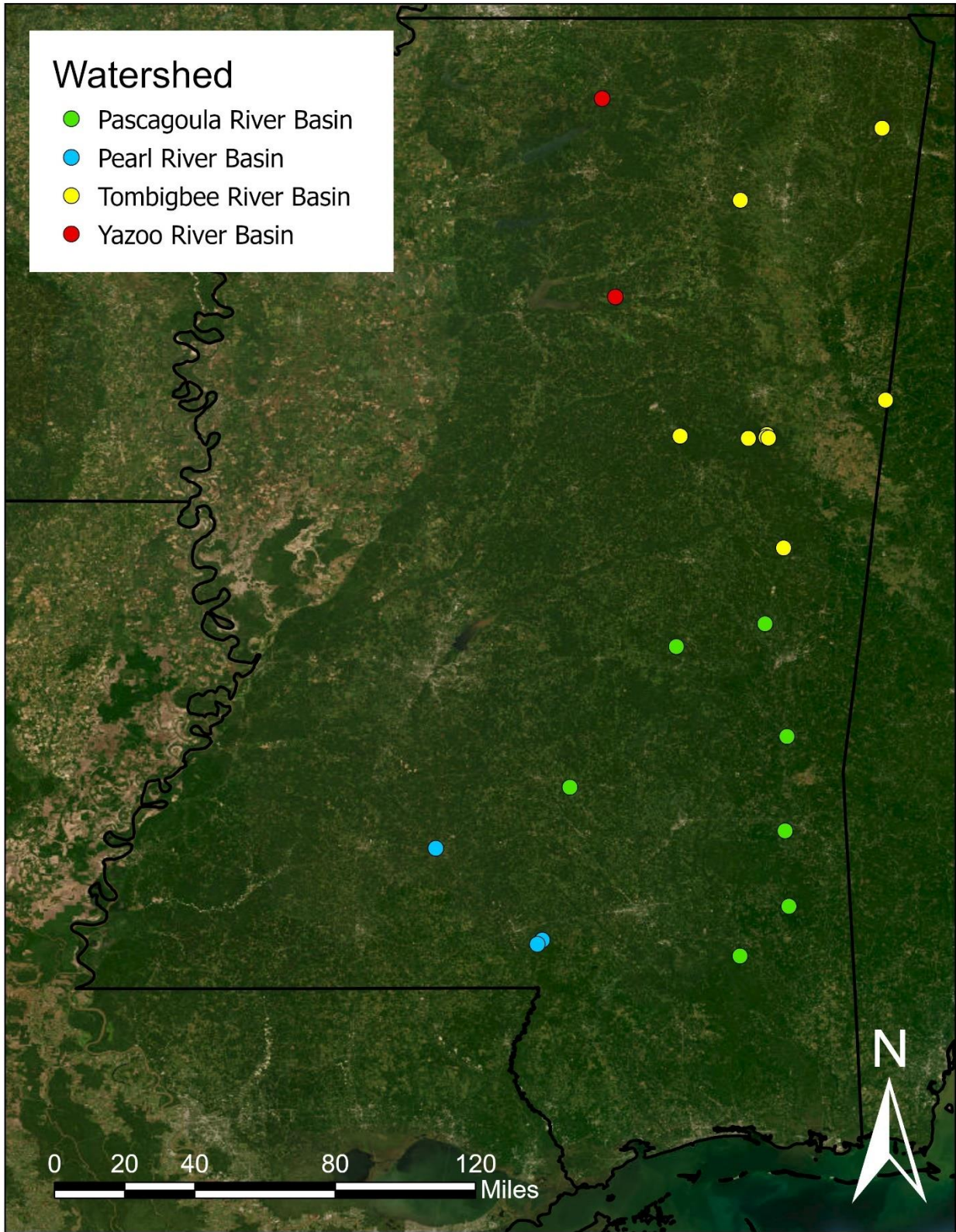


Fig 1. Locations of Mississippi waterbodies surveyed during 2022. Sites belonging to different river/stream basins indicated by different color codes.

Appendices

App. 1. Lakes surveyed in 2017, 2019, 2020, and 2022. 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) was observed are in **bold**.

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

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

App. 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 Native | Status | 2017 | 2019 | 2020 | 2022 |
|------------------------------------|-------------------------|---------|------|------|------|------|
| <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 | - |
| <i>Alnus sp.</i> | alder | Nat | - | 9 | 1 | - |
| <i>Alternanthera philoxeroides</i> | alligator weed | Non-nat | 30 | 7 | 14 | 21 |
| <i>Amaranthus tubercuatus</i> | roughfruit waterhemp | Nat | - | - | 2 | - |
| <i>Apocynum cannabinum</i> | hemp dogbane | | - | - | 2 | - |
| <i>Arundinaria gigantea</i> | giant cane | Nat | 2 | 3 | - | - |
| <i>Azolla caroliniana</i> | Carolina mosquitofern | Nat | 1 | - | 2 | 1 |
| <i>Baccharis halimifolia</i> | eastern baccharis | Nat | 5 | 5 | 7 | - |
| <i>Bacopa caroliniana</i> | blue waterhyssop | Nat | 4 | 1 | 1 | 2 |
| <i>Bacopa monnieri</i> | herb-of-grace | Nat | - | - | 1 | - |
| <i>Bacopa sp.</i> | waterhyssop | - | 2 | - | - | - |
| <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>Brasenia schreberi</i> | watershield | Nat | 16 | 3 | 2 | - |
| <i>Brunnichia ovata</i> | redvine | Nat | - | - | 2 | - |
| <i>Cabomba caroliniana</i> | fanwort | Nat | - | - | 2 | - |
| <i>Callicarpa americana</i> | American beautyberry | Nat | 1 | - | - | - |
| <i>Carex sp.</i> | sedge | - | 1 | 2 | 9 | 21 |
| <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 |
| <i>Ceratophyllum demersum</i> | coontail | Nat | 10 | 8 | 7 | 5 |
| <i>Cercis canadensis</i> | eastern redbud | Nat | - | - | 1 | - |
| <i>Chara sp.</i> | muskgrass | Nat | 11 | 5 | 7 | 11 |
| <i>Chasmanthium sessiflorum</i> | longleaf woodoats | Nat | - | - | 1 | - |
| <i>Cinnamomun camphora</i> | camphortree | Non-nat | - | - | 1 | - |
| <i>Cladium mariscus</i> | sawgrass | Nat | - | - | 4 | 1 |
| <i>Clethra alnifolia</i> | coastal pepperbush | Nat | - | - | 1 | - |
| <i>Colocasia esculenta</i> | wild taro | Non-nat | 8 | 5 | 2 | 2 |

| | | | | | | |
|----------------------------------|----------------------------|---------|----|---|----|----|
| <i>Commelina virginica</i> | Virginia dayflower | Nat | - | - | 11 | - |
| <i>Crataegus sp.</i> | hawthorn | Nat | 1 | - | - | - |
| <i>Crinum americanum</i> | southern swamp crinum | Nat | - | - | 3 | - |
| <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 | - | - | - |
| <i>Cyperus virens</i> | green flatsedge | Nat | - | - | 2 | - |
| <i>Cyrilla racemiflora</i> | swamp titi | Nat | - | - | 1 | - |
| <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 |
| <i>Echinochloa crus-galli</i> | barnyard grass | Non-nat | - | - | 1 | - |
| <i>Echinodorus cordifolius</i> | creeping burhead | Nat | 5 | - | 1 | - |
| <i>Eichhornia crassipes</i> | water hyacinth | Non-nat | 8 | 5 | 7 | 2 |
| <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 |
| <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 |
| <i>Eleocharis sp.</i> | spikerush | - | 1 | - | 1 | - |
| <i>Eleocharis vivipara</i> | viviparous spikerush | Nat | 14 | 2 | 1 | 1 |
| <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 | - |
| <i>Hydrilla verticillata</i> | hydrilla | Non-nat | 5 | 9 | 1 | 5 |
| <i>Hydrocotyle ranunculoides</i> | floating marshpennywort | Nat | 2 | 5 | 2 | - |
| <i>Hydrocotyle sp.</i> | pennywort | - | 4 | - | - | 13 |

| | | | | | | |
|-----------------------------------|-----------------------------|---------|----|----|----|----|
| <i>Hydrocotyle umbellata</i> | manyflower marshpennywort | Nat | 12 | 7 | 7 | 1 |
| <i>Hydrolea quadrivalvis</i> | waterpod | Nat | 6 | 2 | - | 2 |
| <i>Hypericum walteri</i> | greater marsh st. johnswort | Nat | 2 | - | 4 | - |
| <i>Ilex aquifolium</i> | English holly | Non-nat | - | - | 1 | - |
| <i>Ilex decidua</i> | possumhaw | Nat | - | - | 4 | - |
| <i>Iris sp.</i> | iris | - | - | - | - | 2 |
| <i>Juncus acuminatus</i> | tapertip rush | Nat | - | - | 6 | 1 |
| <i>Juncus dudleyi</i> | Dudley's rush | Nat | - | - | - | 1 |
| <i>Juncus effusus</i> | common rush | Nat | 15 | 12 | 7 | 19 |
| <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 | - | - | - |
| <i>Juncus roemerianus</i> | black needlerush | Nat | - | - | 5 | - |
| <i>Juncus sp.</i> | rush | - | 3 | - | - | - |
| <i>Justicia americana</i> | American water-willow | Nat | 6 | 11 | 22 | 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 |
| <i>Lemna sp.</i> | duckweed | - | 3 | - | - | - |
| <i>Leptochloa panicoides</i> | Amazon sprangletop | Nat | - | - | 1 | - |
| <i>Ligustrum sinense</i> | Chinese privet | Non-nat | - | - | 1 | - |
| <i>Limnobium spongia</i> | American frogbit | Nat | 3 | 4 | 2 | 3 |
| <i>Lindera benzoin</i> | northern spicebush | Nat | 4 | - | - | - |
| <i>Liquidambar styraciflua</i> | sweetgum | Nat | 4 | - | 4 | - |
| <i>Ludwigia arcuata</i> | Piedmont primrose-willow | Nat | 2 | - | - | - |
| <i>Ludwigia hexapetala</i> | six-petal primrose-willow | Nat | - | - | - | 5 |
| <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 |
| <i>Ludwigia sp.</i> | primrose | Nat | 2 | - | - | - |
| <i>Lythrum lineare</i> | saltmarsh loosestrife | Nat | - | - | 5 | - |
| <i>Magnolia grandiflora</i> | souther magnolia | Nat | - | - | 1 | - |
| <i>Magnolia virginiana</i> | sweetbay | Nat | - | - | 1 | - |
| <i>Mayaca fluviatilis</i> | stream bogmoss | 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 |
| <i>Myriophyllum heterophyllum</i> | variableleaf watermilfoil | Nat | 1 | - | - | - |
| <i>Myriophyllum spicatum</i> | Eurasian watermilfoil | Non-nat | 3 | 4 | 2 | 9 |
| <i>Najas guadalupensis</i> | southern naiad | Nat | 10 | - | 1 | 1 |

| | | | | | | |
|------------------------------------|--------------------------|---------|----|---|----|----|
| <i>Najas minor</i> | brittle naiad | Non-nat | 12 | 2 | 3 | - |
| <i>Nekemias arborea</i> | peppervine | Nat | - | - | 6 | - |
| <i>Nelumbo lutea</i> | American lotus | Nat | 11 | 6 | 4 | 11 |
| <i>Nitella sp.</i> | stonewort | - | 7 | - | - | - |
| <i>Nuphar advena</i> | spatterdock | Nat | 4 | - | 3 | - |
| <i>Nymphaea odorata</i> | American white waterlily | Nat | 20 | 3 | 2 | 14 |
| <i>Nyssa aquatica</i> | water tupelo | Nat | 4 | - | 3 | - |
| <i>Oxycaryum cubense</i> | cuban bulrush | Non-nat | 7 | 3 | 4 | 3 |
| <i>Panicum hemitomom</i> | maidencane | Nat | 1 | - | - | - |
| <i>Panicum repens</i> | torpedo grass | Non-nat | 15 | 4 | 3 | 7 |
| <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 |
| <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 |
| <i>Phalaris arundinacea</i> | reed canary grass | Non-nat | - | - | - | 1 |
| <i>Phragmites australis</i> | common reed | Non-nat | 1 | - | 5 | - |
| <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 | - |
| <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 |
| <i>Potamogeton foliosus</i> | leafy pondweed | Nat | 10 | - | - | 1 |
| <i>Potamogeton illinoensis</i> | Illinois pondweed | Nat | 2 | - | - | - |
| <i>Potamogeton nodosus</i> | longleaf pondweed | Nat | 6 | 9 | 3 | 9 |
| <i>Potamogeton pulcher</i> | spotted pondweed | Nat | - | - | - | 4 |
| <i>Ptilium capillaceum</i> | eastern bishopweed | Nat | - | - | 1 | - |
| <i>Quercus alba</i> | white oak | Nat | - | - | 2 | - |
| <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>Rhynchospora chalarocephala</i> | loosehead_beaksedge | Nat | - | - | - | 3 |
| <i>Rhynchospora corniculata</i> | shortbristle horned beaksedge | Nat | 5 | - | - | 4 |
| <i>Ricciocarpos natans</i> | liverwort | Nat | - | - | 1 | 3 |
| <i>Rubus sp.</i> | blackberry | Nat | - | - | 3 | - |
| <i>Sabal minor</i> | dwarf palmetto | Nat | - | - | 7 | - |
| <i>Sabatia calycina</i> | coastal rose gentian | Nat | - | - | 1 | - |
| <i>Saccharum giganteum</i> | sugarcane plumegrass | Nat | 6 | - | - | - |
| <i>Sacciolepis striata</i> | American cupscale | Nat | 5 | 1 | 2 | - |
| <i>Sagittaria graminea</i> | grassy arrowhead | Nat | 3 | 3 | - | - |
| <i>Sagittaria lancifolia</i> | bulltongue arrowhead | Nat | 11 | 5 | 6 | 15 |
| <i>Sagittaria latifolia</i> | broadleaf arrowhead | Nat | 9 | 10 | 4 | 4 |
| <i>Sagittaria montevidensis</i> | giant arrowhead | Non-nat | 2 | - | - | - |
| <i>Sagittaria platyphylla</i> | delta arrowhead | Nat | - | - | - | 15 |
| <i>Salix nigra</i> | black willow | Nat | 12 | 3 | 28 | 15 |
| <i>Salvinia minima</i> | common salvinia | Non-nat | 3 | 2 | 3 | - |
| <i>Salvinia molesta</i> | giant salvinia | Non-nat | - | 2 | 2 | - |
| <i>Saururus cernuus</i> | lizard's tail | Nat | 17 | 9 | 5 | 20 |
| <i>Schoenoplectus americanus</i> | three-square bulrush | Nat | - | - | 3 | - |
| <i>Schoenoplectus tabernaemontani</i> | softstem bulrush | Nat | - | - | 6 | - |
| <i>Scirpus cyperinus</i> | woolgrass | Nat | 9 | 7 | - | 7 |
| <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 |
| <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>Stuckenia pectinata</i> | sago pondweed | Nat | 4 | - | 1 | - |
| <i>Symphotrichum divaricatum</i> | southern annual saltmarsh aster | Nat | - | - | 2 | - |
| <i>Symphotrichum lanceolatum</i> | lance-leafed aster | Nat | - | - | 1 | - |

| | | | | | | |
|----------------------------------|--------------------------------|---------|----|----|----|----|
| <i>Symphytotrichum subulatum</i> | eastern annual saltmarsh aster | Nat | - | - | 6 | - |
| <i>Taxodium distichum</i> | bald cypress | Nat | 19 | 12 | 17 | 12 |
| <i>Tillandsia usneoides</i> | Spanish moss | Nat | 1 | - | 1 | - |
| <i>Triadica sebifera</i> | Chinese tallow | Non-nat | 1 | 3 | 11 | - |
| <i>Toxicodendron radicans</i> | poison ivy | Nat | - | - | 1 | - |
| <i>Typha latifolia</i> | broadleaf cattail | Nat | - | 8 | 5 | - |
| <i>Typha sp.</i> | cattail | - | 23 | - | - | 12 |
| <i>Ulmus alata</i> | winged elm | Nat | - | - | 2 | - |
| <i>Ulmus americana</i> | American elm | Nat | - | - | 1 | - |
| <i>Ulmus sp.</i> | elm | Nat | - | - | 14 | - |
| <i>Utricularia macrorhiza</i> | common bladderwort | Nat | - | 2 | 8 | - |
| <i>Utricularia sp.</i> | bladderwort | - | 16 | - | 4 | - |
| <i>Vallisneria americana</i> | American eelgrass | Nat | - | 2 | 6 | - |
| <i>Vitis sp.</i> | grape | - | - | - | 3 | - |
| <i>Vitis vulpina</i> | frost grape | Nat | - | - | 3 | - |
| <i>Woodwardia areolata</i> | netted chainfern | Nat | - | - | 3 | - |
| <i>Zizaniopsis miliacea</i> | giant cutgrass | Nat | 7 | 8 | 8 | 20 |