

# DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

**SAMPLE ID:** 82387      **MACROPHYTE ID:** 82387      **LATITUDE:** N 30.38873  
**COUNTY:** Bay (Vicksburg)      **STORET #:** G3NW0201      **LONGITUDE:** W 85.67649  
**DATE:** 06/19/2021      **TIME:** 1225      **SAMPLING AGENCY:** FL DEP - NWROC  
**SITE NAME:** Merial Lake, Center      **WBID:** 966  
**FIELD ID/NAME:** G3NW0201      **LAKE SIZE:** 225      **RQ:** 2021-05-31-25  
**WATERSHED / LAKESIDE FEATURES**      **LIMS ID:** 2254251

| PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS ):                                                                                                 |                                     |                                                                                                           |                          |                                                                                                    | LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) |                                                                                                            |                                                                     |                                                                                                                   |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--|
| Forest/Natural                                                                                                                                                                             | Silviculture                        | Field/Pasture                                                                                             | Agricultural             | Residential                                                                                        | Commercial                                     | Industrial                                                                                                 | Other (Specify)                                                     | LDI: <u>N/A</u>                                                                                                   |  |
| <input checked="" type="checkbox"/>                                                                                                                                                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>                                                                       | <input type="checkbox"/> | <input checked="" type="checkbox"/>                                                                | <input type="checkbox"/>                       | <input checked="" type="checkbox"/>                                                                        | <input type="checkbox"/>                                            | Land Use Source & Year:                                                                                           |  |
| Local Watershed Erosion (select one): <input checked="" type="checkbox"/> None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Heavy |                                     |                                                                                                           |                          |                                                                                                    |                                                |                                                                                                            | Artificially Impounded                                              |                                                                                                                   |  |
| Local Watershed NPS Pollution: <input type="checkbox"/> No evidence <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy            |                                     |                                                                                                           |                          |                                                                                                    |                                                |                                                                                                            | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                                                                                                   |  |
| STORMWATER INPUTS                                                                                                                                                                          |                                     | Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation                     |                          | Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place |                                                | Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place |                                                                     | Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place |  |
| <u>11</u>                                                                                                                                                                                  |                                     | 20 19 18 17 16                                                                                            |                          | 15 14 13 12 11                                                                                     |                                                | 10 9 8 7 6                                                                                                 |                                                                     | 5 4 3 2 1                                                                                                         |  |
| LAKESIDE ALTERATIONS                                                                                                                                                                       |                                     | Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected)       |                          | Moderate disturbance visible - structures, roads or other (10%-49% lakeside affected)              |                                                | Many structures, roads or other human disturbance visible (50%-70% lakeside affected)                      |                                                                     | Highly developed or disturbed (>70% of lakeside affected)                                                         |  |
| <u>16</u>                                                                                                                                                                                  |                                     | 20 19 18 17 16                                                                                            |                          | 15 14 13 12 11                                                                                     |                                                | 10 9 8 7 6                                                                                                 |                                                                     | 5 4 3 2 1                                                                                                         |  |
| BUFFER ZONE                                                                                                                                                                                |                                     | Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer |                          | 89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer                               |                                                | 50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer                                    |                                                                     | < 29% of shoreline with >18m buffer                                                                               |  |
| <u>16</u>                                                                                                                                                                                  |                                     | 20 19 18 17 16                                                                                            |                          | 15 14 13 12 11                                                                                     |                                                | 10 9 8 7 6                                                                                                 |                                                                     | 5 4 3 2 1                                                                                                         |  |

## WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                      |  |  |  |                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------|--|--|--|--------------------------------|--|
| <b>Water:</b><br>Nutrient Sample Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Preserved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      pH<2 <input type="checkbox"/> No<br>Color Sample Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Lot # _____      Exp. Date: _____<br>Alkalinity Sample Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Water Level <input type="checkbox"/> Low <input type="checkbox"/> Normal <input checked="" type="checkbox"/> High |  |  |  |  |  |  |  | <b>Water Odors:</b> <input checked="" type="checkbox"/> Normal<br><input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Other _____                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                      |  |  |  |                                |  |
| <b>Meter Readings:</b><br>Top: <u>0.3</u> <u>29.4</u> <u>5.21</u> <u>7.80</u> <u>101.6</u> <u>18.9</u> <u>0.01</u><br>Mid-Depth: <u>2.0</u> <u>29.7</u> <u>5.22</u> <u>7.77</u> <u>100.5</u> <u>18.9</u> <u>0.01</u><br>Bottom: <u>5.0</u> <u>28.6</u> <u>5.00</u> <u>7.20</u> <u>92.2</u> <u>19.1</u> <u>0.01</u>                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  | <b>Water Surface Oils:</b> <input checked="" type="checkbox"/> None<br><input type="checkbox"/> Sheen/Slick <input type="checkbox"/> Glob <input type="checkbox"/> Other _____                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                      |  |  |  |                                |  |
| <b>Meter ID:</b> <u>155077</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |  | <b>Clarity:</b> <input checked="" type="checkbox"/> Clear<br><input type="checkbox"/> Opaque <input type="checkbox"/> Turbid<br><input type="checkbox"/> Slightly Turbid                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                      |  |  |  |                                |  |
| <b>Sediment Type:</b> (may check more than one)<br><input type="checkbox"/> Sandy <input type="checkbox"/> Organic fibrous (peaty, CPOM) <input type="checkbox"/> Vegetated<br><input checked="" type="checkbox"/> Sand/Silt <input type="checkbox"/> Organic smooth (muck) <input type="checkbox"/> Other (Specify): _____                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  | <b>Color:</b> <input type="checkbox"/> Clear<br><input type="checkbox"/> Tannic <input checked="" type="checkbox"/> Green                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                      |  |  |  |                                |  |
| <b>Biological Communities:</b><br>LVI Conducted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Phytoplankton Sample Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Sample Preserved? <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Lot #: _____      Exp Date: _____<br>Algal Bloom/Algal ID Sample Taken? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Active Vegetation Mgmt? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Don't Know      |  |  |  |  |  |  |  | <b>Abundance:</b><br>Absent      Rare      Common      Abundant<br>Periphyton <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/><br>Nuisance Plants <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/><br>Submersed Plants <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/><br>Exotic Apple Snails <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |  |                                      |  |  |  |                                |  |
| <b>Sediment Odors:</b><br><input checked="" type="checkbox"/> Normal <input type="checkbox"/> Other (Specify): _____<br><input type="checkbox"/> Anaerobic                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  | <b>Additional Notes:</b><br><u>Increased land clearing for new houses on water's edge. Insufficient silt fences</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                      |  |  |  |                                |  |
| <b>Weather Conditions:</b> <u>Sunny, Hot</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                      |  |  |  |                                |  |
| <b>SAMPLING TEAM:</b> Frank Butera, <u>Heather Schunke</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | <b>SIGNATURE:</b> <u>[Signature]</u> |  |  |  | <b>DATE:</b> <u>06/19/2021</u> |  |

DEP Form FD 9000-6: Lake Habitat Assessment Field Sheet

|                                           |                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                            |    |                                                                                                                     |    |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------|----|
| STORET STATION NUMBER:<br>G3NW0201        | DATE (M/D/Y)<br>06/09/2021                                                                                                                                                                                                                                                                                                           | LAKE NAME<br>MERIAL LAKE, CENTER                                                                                                           |    | FIELD ID / NAME<br>G3NW0201                                                                                         |    |
| WBID: 966                                 | COUNTY:<br>BAY                                                                                                                                                                                                                                                                                                                       | SAMPLING LOCATION/DESCRIPTION:<br>VICKSBURG / REFERENCE LAKES                                                                              |    | LAKE SIZE:<br>255                                                                                                   |    |
| <b>PARAMETER</b>                          | No surface inflow or outflow present, very long water residence time, groundwater seepage dominates                                                                                                                                                                                                                                  | Surface water inflow present, but flow is rare, moderate to long water residence time                                                      |    | Surface water inflow and outflow present (or outflow only), sometimes with visible flow, short water residence time |    |
| <b>HYDROLOGY</b>                          | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/>                                                                                                                   |    | <input type="checkbox"/>                                                                                            |    |
| <b>Color</b>                              | Very clear, uncolored water (benthic sampling appropriate) <input checked="" type="checkbox"/>                                                                                                                                                                                                                                       | Water somewhat tannin stained (benthic sampling appropriate) <input type="checkbox"/>                                                      |    | Dark, discolored water (water color 20 PCU or higher) <input type="checkbox"/>                                      |    |
|                                           | <b>Optimal</b>                                                                                                                                                                                                                                                                                                                       | <b>Suboptimal</b>                                                                                                                          |    | <b>Marginal</b>                                                                                                     |    |
| <b>Secchi</b>                             | Secchi >3 m                                                                                                                                                                                                                                                                                                                          | Secchi(m)                                                                                                                                  |    | Poor                                                                                                                |    |
| 20                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |
| <b>Vegetation Quality</b>                 | Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa                                                                                                                                                                                                                                              | Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants |    | Large masses (21%- 40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth; cattail, etc.) or algal mats             |    |
| 18                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |
| <b>Stormwater Inputs</b>                  | Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation                                                                                                                                                                                                                                                | Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place                                         |    | Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place          |    |
| 11                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |
| <b>Bottom Substrate Quality</b>           | Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present                                                                                                                                                                                                                                           | Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present                                               |    | Moderate layer of CPOM/ mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom       |    |
| 18                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |
| <b>Lakeside Adverse Human Alterations</b> | Very few man-made structures, roads, or other disturbance adjacent to lake (<10%)                                                                                                                                                                                                                                                    | Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected                                                       |    | Many structures, roads or other human disturbance visible (50%-70%) lakeside affected                               |    |
| 16                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |
| <b>Upland Buffer Zone</b>                 | Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer                                                                                                                                                                                                                            | 89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer                                                                       |    | 50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer                                             |    |
| 16                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |
| <b>Adverse Watershed Land Use</b>         | Score the potential effects from adverse human land uses, based on a continuum of amount and type, with least to most adverse as follows: Native vegetation, Silviculture, Pasture or Citrus, Low Density Residential, Row Crops, Commercial, High Density Residential, Urban, Industrial, Sand mine, Petroleum storage, Containment |                                                                                                                                            |    |                                                                                                                     |    |
| 12                                        | 20                                                                                                                                                                                                                                                                                                                                   | 19                                                                                                                                         | 18 | 17                                                                                                                  | 16 |
|                                           | 15                                                                                                                                                                                                                                                                                                                                   | 14                                                                                                                                         | 13 | 12                                                                                                                  | 11 |
|                                           | 10                                                                                                                                                                                                                                                                                                                                   | 9                                                                                                                                          | 8  | 7                                                                                                                   | 6  |
|                                           | 5                                                                                                                                                                                                                                                                                                                                    | 4                                                                                                                                          | 3  | 2                                                                                                                   | 1  |

|             |     |                                                          |
|-------------|-----|----------------------------------------------------------|
| TOTAL SCORE | 111 | COMMENTS: Increased clearing along water edge since 2019 |
|-------------|-----|----------------------------------------------------------|

|                         |                    |                                                                                                  |
|-------------------------|--------------------|--------------------------------------------------------------------------------------------------|
| ANALYSIS DATE: 06/09/21 | ANALYST: F. BUTERA | SIGNATURE:  |
|-------------------------|--------------------|--------------------------------------------------------------------------------------------------|

SBIO Sample ID: 82307 MacroID: 16908

QC✓: \_\_\_\_\_

## DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

|                                                                                                                                                            |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|----|-------------------------------|--------------------------------------------------|---|---|---|-----------------------------------------------------------------------------------------|-----------------|--|--|--|
| Waterbody: Merial Lake, Center                                                                                                                             |   |   |   |    | County: Bay                   |                                                  |   |   |   | Date: 06/09/2021                                                                        |                 |  |  |  |
| Analyst: F. Butera                                                                                                                                         |   |   |   |    | Signature: <i>[Signature]</i> |                                                  |   |   |   | STORET: G3NW0201                                                                        |                 |  |  |  |
| Except where noted as "sp." species level identification required. *Genera that may require lab verification*<br>Plants in bold = FLEPPC invasive exotic.  |   |   |   |    |                               |                                                  |   |   |   | Lake units sampled (circle one group):<br>1, 4, 7, 10 <b>2, 5, 8, 11</b><br>3, 6, 9, 12 |                 |  |  |  |
| It is important to note dominant or co-dominant taxa (by areal extent) for each unit. Use "D" to denote dominant taxon, or "C" for the 2 co-dominant taxa. |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| SBIO ID <u>82387</u>                                                                                                                                       | 2 | 5 | 8 | 11 | Collect ed? (✓)               | Macro ID <u>11385</u>                            | 2 | 5 | 8 | 11                                                                                      | Collect ed? (✓) |  |  |  |
| <b>SPECIES</b>                                                                                                                                             |   |   |   |    |                               | <b>SPECIES</b>                                   |   |   |   |                                                                                         |                 |  |  |  |
| Acer rubrum                                                                                                                                                |   |   |   |    |                               | Habenaria repens                                 |   |   |   |                                                                                         |                 |  |  |  |
| <b>Alternanthera philoxeroides</b>                                                                                                                         |   |   |   |    |                               | <b>Hydrilla verticillata</b>                     |   |   |   |                                                                                         |                 |  |  |  |
| Andropogon sp.                                                                                                                                             |   |   |   |    |                               | Hydrocotyle sp.                                  |   |   |   |                                                                                         |                 |  |  |  |
| Azolla filiculoides (A. caroliniana)                                                                                                                       |   |   |   |    |                               | <b>Hygrophila polysperma</b>                     |   |   |   |                                                                                         |                 |  |  |  |
| Baccharis sp.                                                                                                                                              |   |   |   |    |                               | *Hypericum fasciculatum                          |   |   |   |                                                                                         |                 |  |  |  |
| Bacopa caroliniana                                                                                                                                         |   |   |   |    |                               | *Hypericum hypericoides                          |   |   |   |                                                                                         |                 |  |  |  |
| Bacopa monnieri                                                                                                                                            |   |   |   |    |                               | *Hypericum myrtifolium                           |   |   |   |                                                                                         |                 |  |  |  |
| Bidens laevis                                                                                                                                              |   |   |   |    |                               | Ilex cassine                                     |   |   |   |                                                                                         |                 |  |  |  |
| Bidens mitis                                                                                                                                               |   |   |   |    |                               | <b>Ipomoea aquatica</b>                          |   |   |   |                                                                                         |                 |  |  |  |
| Blechnum serrulatum                                                                                                                                        |   |   |   |    |                               | Ipomoea sagittata                                |   |   |   |                                                                                         |                 |  |  |  |
| Boehmeria cylindrica                                                                                                                                       |   |   |   |    |                               | Itea virginica                                   |   |   |   |                                                                                         |                 |  |  |  |
| Brasenia schreberi                                                                                                                                         |   |   |   |    |                               | Juncus effusus                                   |   |   |   |                                                                                         |                 |  |  |  |
| Cabomba caroliniana                                                                                                                                        |   |   |   |    |                               | *Juncus marginatus                               |   |   |   |                                                                                         |                 |  |  |  |
| <b>Casuarina equisetifolia</b>                                                                                                                             |   |   |   |    |                               | *Juncus megacephalus                             |   |   |   |                                                                                         |                 |  |  |  |
| Centella asiatica                                                                                                                                          |   |   |   |    |                               | Juncus repens                                    |   |   |   |                                                                                         |                 |  |  |  |
| Cephalanthus occidentalis                                                                                                                                  |   |   |   |    |                               | *Juncus scirpoides                               |   |   |   |                                                                                         |                 |  |  |  |
| Ceratophyllum demersum                                                                                                                                     |   |   |   |    |                               | Lachnanthes caroliniana                          |   |   |   |                                                                                         |                 |  |  |  |
| Chara sp.                                                                                                                                                  |   |   |   |    |                               | Leersia hexandra                                 |   |   |   |                                                                                         |                 |  |  |  |
| Cladium jamaicense                                                                                                                                         |   |   |   |    |                               | <b>Landoltia punctata</b> (Spiro. punctata)      |   |   |   |                                                                                         |                 |  |  |  |
| Cliftonia monophylla                                                                                                                                       |   |   |   |    |                               | Lemna sp.                                        |   |   |   |                                                                                         |                 |  |  |  |
| <b>Colocasia esculenta</b>                                                                                                                                 |   |   |   |    |                               | Leucothoe racemosa (E. racemosa)                 |   |   |   |                                                                                         |                 |  |  |  |
| *Commelina                                                                                                                                                 |   |   |   |    |                               | Limnium spongia                                  |   |   |   |                                                                                         |                 |  |  |  |
| Crinum americanum                                                                                                                                          |   |   |   |    |                               | <b>Limnophila sessiliflora</b>                   |   |   |   |                                                                                         |                 |  |  |  |
| *Cyperus alternifolius (C. involucratus)                                                                                                                   |   |   |   |    |                               | Liquidambar styraciflua                          |   |   |   |                                                                                         |                 |  |  |  |
| Cyperus articulatus                                                                                                                                        |   |   |   |    |                               | *Ludwigia arcuata                                |   |   |   |                                                                                         |                 |  |  |  |
| Cyperus haspan                                                                                                                                             |   |   |   |    |                               | *Ludwigia leptocarpa                             |   |   |   |                                                                                         |                 |  |  |  |
| *Cyperus lecontei                                                                                                                                          |   |   |   |    |                               | *Ludwigia linearis                               |   |   |   |                                                                                         |                 |  |  |  |
| *Cyperus polystachyos                                                                                                                                      |   |   |   |    |                               | *Ludwigia octovalvis                             |   |   |   |                                                                                         |                 |  |  |  |
| *Cyperus odoratus                                                                                                                                          |   |   |   |    |                               | *Ludwigia peruviana                              |   |   |   |                                                                                         |                 |  |  |  |
| *Cyperus surinamensis                                                                                                                                      |   |   |   |    |                               | *Ludwigia repens                                 |   |   |   |                                                                                         |                 |  |  |  |
| Cyrtilla racemiflora                                                                                                                                       |   |   |   |    |                               | *Ludwigia <u>cult. leaf</u>                      |   |   |   |                                                                                         |                 |  |  |  |
| Decodon verticillatus                                                                                                                                      |   |   |   |    |                               | Luziola fluitans (H. carolinensis)               |   |   |   |                                                                                         |                 |  |  |  |
| Diodia virginiana                                                                                                                                          |   |   |   |    |                               | Lyonia lucida                                    |   |   |   |                                                                                         |                 |  |  |  |
| *Echinochloa crus-galli                                                                                                                                    |   |   |   |    |                               | Magnolia virginiana                              |   |   |   |                                                                                         |                 |  |  |  |
| *Echinochloa muricatum                                                                                                                                     |   |   |   |    |                               | Mayaca fluviatilis                               |   |   |   |                                                                                         |                 |  |  |  |
| Echinochloa walteri                                                                                                                                        |   |   |   |    |                               | <b>Melaleuca quinquenervia</b>                   |   |   |   |                                                                                         |                 |  |  |  |
| Eclipta prostrata (E. alba)                                                                                                                                |   |   |   |    |                               | Micranthemum glomeratum                          |   |   |   |                                                                                         |                 |  |  |  |
| <b>Egeria densa</b>                                                                                                                                        |   |   |   |    |                               | Micranthemum umbrosum                            |   |   |   |                                                                                         |                 |  |  |  |
| <b>Eichhornia crassipes</b>                                                                                                                                |   |   |   |    |                               | Mikania scandens                                 |   |   |   |                                                                                         |                 |  |  |  |
| *Eleocharis baldwinii                                                                                                                                      |   |   |   |    |                               | <b>Mimosa pigra</b>                              |   |   |   |                                                                                         |                 |  |  |  |
| *Eleocharis                                                                                                                                                |   |   |   |    |                               | Myrica cerifera                                  |   |   |   |                                                                                         |                 |  |  |  |
| Eleocharis cellulosa                                                                                                                                       |   |   |   |    |                               | <i>Hypericum</i> <i>trissophyllum</i> <i>etc</i> |   |   |   |                                                                                         |                 |  |  |  |
| Eleocharis equisetoides                                                                                                                                    |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| Eleocharis interstincta                                                                                                                                    |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| *Eriocaulon compressum                                                                                                                                     |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| *Eriocaulon decangulare                                                                                                                                    |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| Eupatorium capillifolium                                                                                                                                   |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| *Fuirena                                                                                                                                                   |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| Fuirena scirpoidea                                                                                                                                         |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| Gordonia lasianthus                                                                                                                                        |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
| <i>Eriocaulon</i> <i>sp.</i>                                                                                                                               |   |   |   |    |                               |                                                  |   |   |   |                                                                                         |                 |  |  |  |
|                                                                                                                                                            |   |   |   |    |                               | LIMS ID <u>2254251</u>                           |   |   |   |                                                                                         |                 |  |  |  |

**FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET**

Waterbody: Merial Lake, Center Storet: G3NW0201

Date: 06/19/2021 SBIO ID 82387 Macro ID 11885

| SPECIES                                     | 2 | 5 | 8 | 11 | Collect ed? (✓) | SPECIES                                           | 2 | 5 | 8 | 11 | Collect ed? (✓) |
|---------------------------------------------|---|---|---|----|-----------------|---------------------------------------------------|---|---|---|----|-----------------|
| Myriophyllum aquaticum                      |   |   |   |    |                 | Salix caroliniana                                 |   |   |   |    |                 |
| *Myriophyllum heterophyllum                 |   |   |   |    |                 | Salvinia minima                                   |   |   |   |    |                 |
| *Myriophyllum laxum                         |   |   |   |    |                 | Sambucus canadensis                               |   |   |   |    |                 |
| *Myriophyllum pinnatum                      |   |   |   |    |                 | Sapium sebiferum                                  |   |   |   |    |                 |
| <b>Myriophyllum spicatum</b>                |   |   |   |    |                 | Saururus cernuus                                  |   |   |   |    |                 |
| *Najas filifolia                            |   |   |   |    |                 | Schinus terebinthifolius                          |   |   |   |    |                 |
| *Najas guadalupensis                        |   |   |   |    |                 | *Schoenoplectus californicus                      |   |   |   |    |                 |
| *Najas minor                                |   |   |   |    |                 | *Schoenoplectus pungens                           |   |   |   |    |                 |
| Nelumbo lutea                               |   |   |   |    |                 | *Schoenoplectus tabernaemontani                   |   |   |   |    |                 |
| Nitella spp.                                |   |   |   |    |                 | Scirpus cubensis (Oxycaryon cubense)              |   |   |   |    |                 |
| Nuphar sp.                                  |   |   |   |    |                 | Scirpus cyperinus                                 |   |   |   |    |                 |
| Nymphaea odorata                            |   |   | 1 | 1  |                 | *Sesbania                                         |   |   |   |    |                 |
| Nymphoides aquatica                         |   |   |   |    |                 | Solidago sp.                                      |   |   |   |    |                 |
| Nyssa sylvatica var. biflora                |   |   |   |    |                 | Sparganium americanum                             |   |   |   |    |                 |
| Orontium aquaticum                          |   |   |   |    |                 | Spartina bakeri                                   |   |   |   |    |                 |
| Osmunda cinnamomea                          |   |   |   |    |                 | Spirodela polyrhiza                               |   |   |   |    |                 |
| Osmunda regalis                             |   |   |   |    |                 | Taxodium sp.                                      |   |   | 1 |    |                 |
| Panicum hemitomon                           |   | 5 | 1 | 0  | C               | Thalia geniculata                                 |   |   |   |    |                 |
| <b>Panicum repens</b>                       |   |   |   |    |                 | Thelypteris palustris                             |   |   |   |    |                 |
| Paspalidium geminatum                       |   |   |   |    |                 | Triadenum virginicum                              |   |   |   |    |                 |
| *Paspalum repens                            |   |   |   |    |                 | Typha sp.                                         |   |   |   |    |                 |
| Paspalum urvillei                           |   |   |   |    |                 | <b>Urochloa mutica (Brachiaria mutica)</b>        |   |   |   |    |                 |
| Peltandra sp.                               |   |   |   |    |                 | *Utricularia gibba (U. biflora)                   |   |   |   |    |                 |
| Persea sp.                                  |   |   |   |    |                 | *Utricularia floridana                            | 1 | 5 | 1 | 1  |                 |
| <b>Pennisetum purpureum</b>                 |   |   |   |    |                 | *Utricularia foliosa                              |   |   |   |    |                 |
| Phragmites australis                        |   |   |   |    |                 | *Utricularia inflata                              |   |   |   |    |                 |
| Pinus elliotii                              |   |   |   |    |                 | *Utricularia purpurea                             |   |   |   |    |                 |
| <b>Pistia stratioides</b>                   |   |   |   |    |                 | *Utricularia cornuta                              |   |   |   |    |                 |
| Pluchea sp.                                 |   |   |   |    |                 | *Utricularia radiata                              |   |   |   |    |                 |
| *Polygonum glabrum (densiflorum)            |   |   |   |    |                 | Vallisneria americana                             |   |   |   |    |                 |
| *Polygonum hydropiperoides                  |   |   |   |    |                 | *Websteria confervoides                           |   |   |   |    |                 |
| *Polygonum punctatum                        |   |   |   |    |                 | <b>Wedelia trilobata (Sphag. trilobata)</b>       |   |   |   |    |                 |
| *Polygonum                                  |   |   |   |    |                 | Wolffiella spp.                                   |   |   |   |    |                 |
| Pontederia cordata                          |   |   |   |    |                 | Woodwardia virginica                              |   |   |   |    |                 |
| *Potamogeton diversifolius                  |   |   |   |    |                 | Xyris sp.                                         |   | 1 | 1 | 1  |                 |
| *Potamogeton illinoensis                    |   |   |   |    |                 | Zizania aquatica                                  |   |   |   |    |                 |
| *Potamogeton pusillus                       |   |   |   |    |                 | Zizaniopsis milacea                               |   |   |   |    |                 |
| *Potamogeton pectinatus (Stuck. pectinatus) |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Proserpinaca pectinata                      |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| *Rhexia                                     |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| *Rhynchospora corniculata                   |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| *Rhynchospora inundata                      |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Rhynchospora tracyi                         |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Ricciocarpus natans                         |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Sabal palmetto                              |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Sacciolepis striata                         |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| *Sagittaria filiformis                      |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| *Sagittaria graminea                        |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| *Sagittaria isoetiformis                    |   |   | 1 | 1  |                 |                                                   |   |   |   |    |                 |
| Sagittaria lancifolia                       |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Sagittaria latifolia                        |   |   |   |    |                 |                                                   |   |   |   |    |                 |
| Nymphaea cordata                            |   |   | 1 |    |                 |                                                   |   |   |   |    |                 |
|                                             |   |   |   |    |                 |                                                   |   |   |   |    |                 |
|                                             |   |   |   |    |                 | *Schoenoplectus tabernaemontani = Scirpus validus |   |   |   |    |                 |



Station: Merial Lake, Center  
 GPS Dec. 30.38873 x -85.67649  
 Storet: G3NW0201 \_ WBID 966  
 Sample ID: 82387 Macro ID: 11885  
 RQ-2021-05-31-25

Sampled : 06/09/2021  
 Sampled By. F.Butera, H. Schmuki  
 Location. Santa Rosa Beach, Walton.  
 Receiving Waters: St. Andrews's Bay  
 LIMS ID: 2254251

|    | Taxa                                | 2  | 5                        | 8  | 11 | Coll.       | Verified |
|----|-------------------------------------|----|--------------------------|----|----|-------------|----------|
| 1  | <i>Eriocaulon</i> sp.               |    | 1                        | 1  |    |             |          |
| 2  | <i>Fuirena scirpoidea</i>           |    | 1                        | 1  | 1  |             |          |
| 3  | <i>Leersia hexandra</i>             |    | 1                        | 1  | 1  |             |          |
| 4  | <i>Panicum hemitomon</i>            | C  | 1                        | D  | C  |             |          |
| 5  | <i>Sagittaria isoetiformis</i>      |    | 1                        | 1  |    |             |          |
| 6  | <i>Xyris</i> sp.                    |    | 1                        | 1  | 1  |             |          |
| 7  | <i>Bacopa caroliniana</i>           |    | 1                        | 1  | 1  |             |          |
| 8  | <i>Centella asiatica</i>            |    | 1                        |    |    |             |          |
| 9  | <i>Eupatorium capillifolium</i>     |    |                          | 1  |    |             |          |
| 10 | <i>Hypericum lissophloeus</i>       | C  | C                        | 1  | C  |             |          |
| 11 | <i>Ludwigia</i> (Unknown Nativity)* |    | 1                        | 1  |    |             |          |
| 12 | <i>Nymphaea odorata</i>             |    | 1                        | 1  | 1  |             |          |
| 13 | <i>Nymphoides cordata</i>           |    | 1                        |    |    |             |          |
| 14 | <i>Utricularia floridana</i>        | 1  | C                        | 1  | 1  |             |          |
| 15 | <i>Cephalanthus occidentalis</i>    |    |                          | 1  |    |             |          |
| 16 | <i>Taxodium</i> sp.                 |    |                          | 1  |    |             |          |
|    | Taxa per section                    | 3  | 13                       | 14 | 8  | Herb. Taxa  | 14       |
|    | Exotic Present                      | 0  | 0                        | 0  | 0  | Woody Taxa  | 2        |
|    | Avg. taxa per section               | 10 |                          |    |    | Ferns       | 0        |
|    | sections with exotics               | 0  |                          |    |    | Macro Algae | 0        |
|    | Exotic Taxa                         | 0  | Exotics per Section: 0.0 |    |    | Total Taxa  | 16       |

| Metric              | Rep. 1                    | Rep. 2                       | Rep. 3               | Rep. 4                    | LVI Average                    |
|---------------------|---------------------------|------------------------------|----------------------|---------------------------|--------------------------------|
| LVI 2012            | 98                        | 83                           | 83                   | 85                        | 87                             |
| Native Percentage   | 100                       | 92.31                        | 92.86                | 100                       | 96.29                          |
| FLEPPC Pct (Exotic) | 0                         | 0                            | 0                    | 0                         | 0.00                           |
| Total Taxa          | 3                         | 13                           | 14                   | 8                         | 9.50                           |
| C of C over 7.0     | 33.33                     | 15.38                        | 21.43                | 12.5                      | 20.66                          |
| Dominant Taxa       | Pan. Hemi /<br>Hyp lisso. | U. floridana /<br>Hyp lisso. | Panicum<br>hemitomen | Pan. Hemi /<br>Hyp lisso. | P. Hemi, U. fl.,<br>Hyp. Lisso |
| C of C Dominant     | 7.41                      | 7.67                         | 5.82                 | 7.41                      | 7.08                           |

DEP-SOP-001/01  
FS 7000 General Biological Community Sampling

**Form FD 9000-2: COMPOSITE LAKE SAMPLING SHEET (< 1000 ACRES)**

| Date: <u>06/19/2004</u> |           | Name of Lake:<br>Merial Lake, Center  |        | Gear used: <u>PONAR</u> |                                            | EKMAN | OTHER |
|-------------------------|-----------|---------------------------------------|--------|-------------------------|--------------------------------------------|-------|-------|
| Comments:               |           |                                       |        |                         |                                            |       |       |
| Drop #                  | Depth (m) | Sediment Type (circle all that apply) | Drop # | Depth (m)               | Sediment Type (circle all that apply)      |       |       |
| 1                       |           | sand, silt/clay, CPOM, muck, SAV      | 7      | 5.5                     | <del>sand, silt/clay</del> CPOM, muck, SAV |       |       |
| 2                       |           | sand, silt/clay, CPOM, muck, SAV      | 8      |                         | sand, silt/clay, CPOM, muck, SAV           |       |       |
| 3                       |           | sand, silt/clay, CPOM, muck, SAV      | 9      |                         | sand, silt/clay, CPOM, muck, SAV           |       |       |
| 4                       |           | sand, silt/clay, CPOM, muck, SAV      | 10     |                         | sand, silt/clay, CPOM, muck, SAV           |       |       |
| 5                       |           | sand, silt/clay, CPOM, muck, SAV      | 11     |                         | sand, silt/clay, CPOM, muck, SAV           |       |       |
| 6                       |           | sand, silt/clay, CPOM, muck, SAV      | 12     |                         | sand, silt/clay, CPOM, muck, SAV           |       |       |

CPOM = coarse particulate organic matter; SAV = submerged aquatic vegetation

Storet G3NW0201  
WBID 996

Field ID G3NW0201

Project. Reference Lakes

SBIO ID: 82387

Paste map here and show location of each dredge drop and where water chemistry parameters were collected.

Revision Date: February 1, 2004

**Merial Lake, Center**

WIN ID G3NW0201  
Receiving Water Floridian Aquifer  
Basin / WBID St. Andrew's Bay/ 966  
City, County Vicksburg, Bay  
Lake Acreage 225  
Circumference (M) 6074  
Seg. Length (M) 506.166667

|          | Location | Dec. Latt. | Dec. Long. |
|----------|----------|------------|------------|
| Quadrant | Storet   | 30.388714  | 85.67649   |
|          | A        | 30.39144   | 85.67602   |
| 2        | B        | 30.38970   | 85.67192   |
|          | C        | 30.39019   | 85.66939   |
|          | D        | 30.38810   | 85.66552   |
| 5        | E        | 30.38503   | 85.66748   |
|          | F        | 30.38481   | 85.67160   |
|          | G        | 30.38641   | 85.67349   |
| 8        | H        | 30.38679   | 85.67885   |
|          | I        | 30.38310   | 85.68068   |
|          | J        | 30.38564   | 85.68155   |
| 11       | K        | 30.38970   | 85.68184   |
|          | L        | 30.39293   | 85.68062   |

|           |           |             |
|-----------|-----------|-------------|
| Boat Ramp | 30.392859 | 85.68199639 |
|-----------|-----------|-------------|

Merial Lake, Center  
G3NW0201, WBID 966  
30.38873 x -85.67649  
Ref Lakes 2020

