

LVI

Site Name Lake Griffin Sample Date 5/8/19

WBID 2994 H WIN ID GZCE0207 RQ -2019-04-29-45

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	LMD 5/10/19	MKL 5/21/19
Create SBIO station visit <u>79455</u>	LMD 5/10/19	n/a
Vascular Entry (add LIMS ID)	LMD 5/10/19	MKL 5/22/19
Lake Observation Sheet Entry	LMD 5/10/19	MKL 5/22/19
Authorize SBIO data	MKL 5/22/19	n/a
Scan all sheets to 21FLCEN folder	LMD 5/10/19	n/a
LIMS/WIN migration	LMD 7/26/19	n/a
File in cabinet		n/a

Comments/notes:

WQ site (Bass) included w/ LVI



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Lake Griffin @ Center

Date: 05/08/2019

(mm/dd/yyyy)

WIN/ Field ID: G2CE0207

WBID: 2994H

Latitude: 28.679804

(Decimal Degrees)

County: Seminole

ORG ID: 21FLCEN

Longitude: -81.340989

(Decimal Degrees)

Receiving Body of Water: _____

RQ-2019- 04-29-45

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment				
Mike Linger										☒ Sample Container	☐ Van Dorn	☐ Pole		
										☐ Carboy	☒ Syringe			
										☐ Dipper	☐ Other			
										Depth Measured with <u>Secchi Disk Line / Meter</u>				
										Equipment ID <u>Leadfoot, Knothead, Crusty/ Bucket, Mucky/ Trap</u>				
Mike Drennan										Collection Method				
										☐ Wading	☒ Canoe/Kayak			
										☐ From Shore	☒ Electric Motor			
										☐ Other	☐ Gasoline Motor			
Water Level: Dry/ Pooled/ Low / <u>Normal</u> / High / Flooded					Motor ID# <u>Shrimp / Trap</u>					Matrix: <u>Fresh</u> / Marine / DI				
Photos: <u>Yes</u> / No					Flow: No Flow / Intestinal / Flowing <u>NA</u>					Tide: Rising/ Falling/ Slack <u>NA</u>				
Tide Times: High Low														
Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (µmhos/cm)	Temp. (C°)				
EST	1042		0.3		8.74	112.1	8.48	0.08	178.3	28.1				
CEN		5.8	5.3	2.5	0.21	2.1	7.06	0.11	230.1	19.6				
Biological Samples Collected: None HA SCI RPS Algae ID LVS <u>LVI</u> Other:														
SBIO ID Numbers: SBIO-ID: <u>79455</u> HA-ID: RPS-ID: Macrophyte-ID: LIMS#: <u>2085033</u>														
Parameter Suite		Parameter Methods					Preservation		Lot#	Expiration	pH Check			
Preserved Nutrients		☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP					☒ Ice ☒ H2SO4		<u>SA8344070</u>	<u>12/10/19</u>	☒ <2			
Metals		☐ W-ICPMS ☐ W-ICP					☐ Ice ☐ HNO3				☐ <2			
Filtered Nutrients		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter					☒ Ice		<u>13615055</u>					
Chlorophyll		☒ CHLSUITE-W					☒ Ice							
Physical/Aggregate (Fresh)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS					☒ Ice							
Physical/Aggregate (Marine)		☐ Alkalinity / W-F / W-TSS / TURBIDITY					☐ Ice							
Macroinvertebrates		☐ MI-FW-QLDC					☐ Formalin							
Periphyton		☐ ALGAE-ID					☐ Ice							
Microbiology		☐ E Coli ☐ F Coli ☐ Enterococci					☐ Ice							
Molecular		☐ PCR-FILTER ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD					☐ Ice							
Tracers		☐ W-E8321-DI ☐ W-E8321-MS					☐ Ice							
Pesticides		☐ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-E8321-DI ☐ W-PCL-SQ-R ☐ WE8321-MS ☐ W-CARB-AA					☐ Ice ☐ Other							
Phytoplankton		☐ DTY-QN-C ☐ PKD-QN-C					☐ Ice							

Notes:

Signature: M. L. K.

Date: 5/8/19

WIN ID / Field ID →

Lake Griffin @ Center



G2CE0207

LIMS EVENT ID: CENT-DIST-2019-05-09-01

Enter Field Parameters, Verify Station ID in LIMS DMT: LMD 5/10/19

QC Station ID, Field Parameters in LIMS DMT: MKL 5/21/19

Scan/Save Field Sheets LMD 5/10/19

Migrate Data to WIN: LMD 7/26/19

Verify Data in WIN: _____

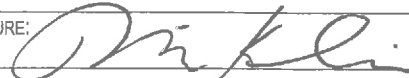
(Initials/Date)

(Initials/Date)

(Initials/Date)

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

STORET STATION NUMBER: GZCE0207	DATE (M/D/Y) 05/08/2019	LAKE NAME Lake Griffin		FIELD ID / NAME:												
ECO-REGION:	COUNTY: Seminole	SAMPLING LOCATION/DESCRIPTION: @ Center		LAKE SIZE: Medium												
PARAMETER	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 ☐	Impounded, hydrology of system artificially controlled ☐												
HYDROLOGY																
Color	Very clear, uncolored water (benthic sampling appropriate) ☐	Water somewhat tannin stained (benthic sampling appropriate) ☒	Dark, discolored water (water color 20 PCU or higher) ☐	Visibility extremely reduced due to high color ☐												
	Optimal	Suboptimal	Marginal	Poor												
Secchi	Secchi >3 m Or VOB	3	2.6	2.2	1.8	1.4	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1
Vegetation Quality	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa 6	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		Lake choked (>40%) with nuisance macrophytes (duckweed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed)											
Stormwater Inputs	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation 3	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											
Bottom Substrate Quality	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present 11	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		Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom											
Lakeside Adverse Human Alterations	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%) 3	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)											
Upland Buffer Zone	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer 4	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											
Adverse Watershed Land Use	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 5															
TOTAL SCORE	46	COMMENTS:														

ANALYSIS DATE: 5/8/19	ANALYST: Mike Linger	SIGNATURE: 
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DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 79455 MACROPHYTE ID: 11283 LATITUDE: 28.679804
 COUNTY: Seminole STORET #: G2CE0207 LONGITUDE: -81.340989
 DATE: 5/8/19 TIME: 1042 SAMPLING AGENCY: FDEP CE-Roc
 SITE NAME: Lake Griffin WBID: 2994H
 FIELD ID/NAME: G2CE0207 LAKE SIZE: Med RQ: 2019-04-29-45

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS) : Forest/Natural <u>5</u> Silviculture <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>95</u> Commercial <u>0</u> Industrial <u>0</u> Other (Specify) <u>0</u>				LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) LDI: <u>0</u>	
Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy				Artificially Impounded ☐ Yes ☒ No Land Use Source & Year:	
STORMWATER INPUTS <u>3</u>		Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation 20 19 18 17 16		Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place 15 14 13 12 11	
LAKESIDE ALTERATIONS <u>3</u>		Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected) 20 19 18 17 16		Moderate disturbance visible - structures, roads or other (10%-49% lakeside affected) 15 14 13 12 11	
BUFFER ZONE <u>4</u>		Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer 20 19 18 17 16		89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer 15 14 13 12 11	
				Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place 10 9 8 7 6	
				Many structures, roads or other human disturbance visible (50%-70% lakeside affected) 10 9 8 7 6	
				Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place 5 4 3 2 1	
				Highly developed or disturbed (>70% of lakeside affected) 5 4 3 2 1	
				50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer 10 9 8 7 6	
				< 29% of shoreline with >18m buffer 5 4 3 2 1	

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water: Nutrient Sample Taken? ☒ Yes ☐ No Preserved? ☐ Yes ☐ No pH < 2 ☐ No Color Sample Taken? ☒ Yes ☐ No Lot # _____ Exp. Date: _____ Alkalinity Sample Taken? ☒ Yes ☐ No Water Level ☐ Low ☒ Normal ☐ High						Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other _____					
Meter Readings: Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat. (%) Cond. (UMHO/CM) Salinity (PPT) Top: <u>0.3</u> <u>28.1</u> <u>8.48</u> <u>8.74</u> <u>112.1</u> <u>178.3</u> <u>0.08</u> Mid-Depth: _____ Bottom: <u>5.3</u> <u>19.6</u> <u>7.06</u> <u>0.21</u> <u>2.1</u> <u>230.1</u> <u>190.11</u>						Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____					
Meter ID: <u>Shrimp Trap</u>						Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid Color: ☒ Clear ☐ Tannic ☐ Green					
Sediment Type: (may check more than one) ☒ Sandy ☒ Organic fibrous (peaty, CPOM) ☒ Vegetated ☐ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____						SECCHI (M) <u>2.5</u> Total Station Depth (M) <u>5.8</u> VOB ☐					
Biological Communities: LVI Conducted? ☒ Yes ☐ No Phytoplankton Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot #: _____ Exp. Date: _____ Algal Bloom/Algal ID Sample Taken? ☐ Yes ☐ No Active Vegetation Mgmt? ☐ Yes ☐ No ☒ Don't Know						Sediment Odors: ☒ Normal ☐ Other (Specify): _____ ☐ Anaerobic					
Abundance: Absent Rare Common Abundant Periphyton ☐ ☐ ☒ ☐ Nuisance Plants ☐ ☐ ☐ ☒ Submersed Plants ☐ ☐ ☐ ☒ Exotic Apple Snails ☒ ☐ ☐ ☐						Additional Notes:					
Weather Conditions : <u>80's clear</u>											
SAMPLING TEAM: <u>Mike Linger / Mike Drennan</u>						SIGNATURE: <u>[Signature]</u>			DATE: <u>5/8/19</u>		

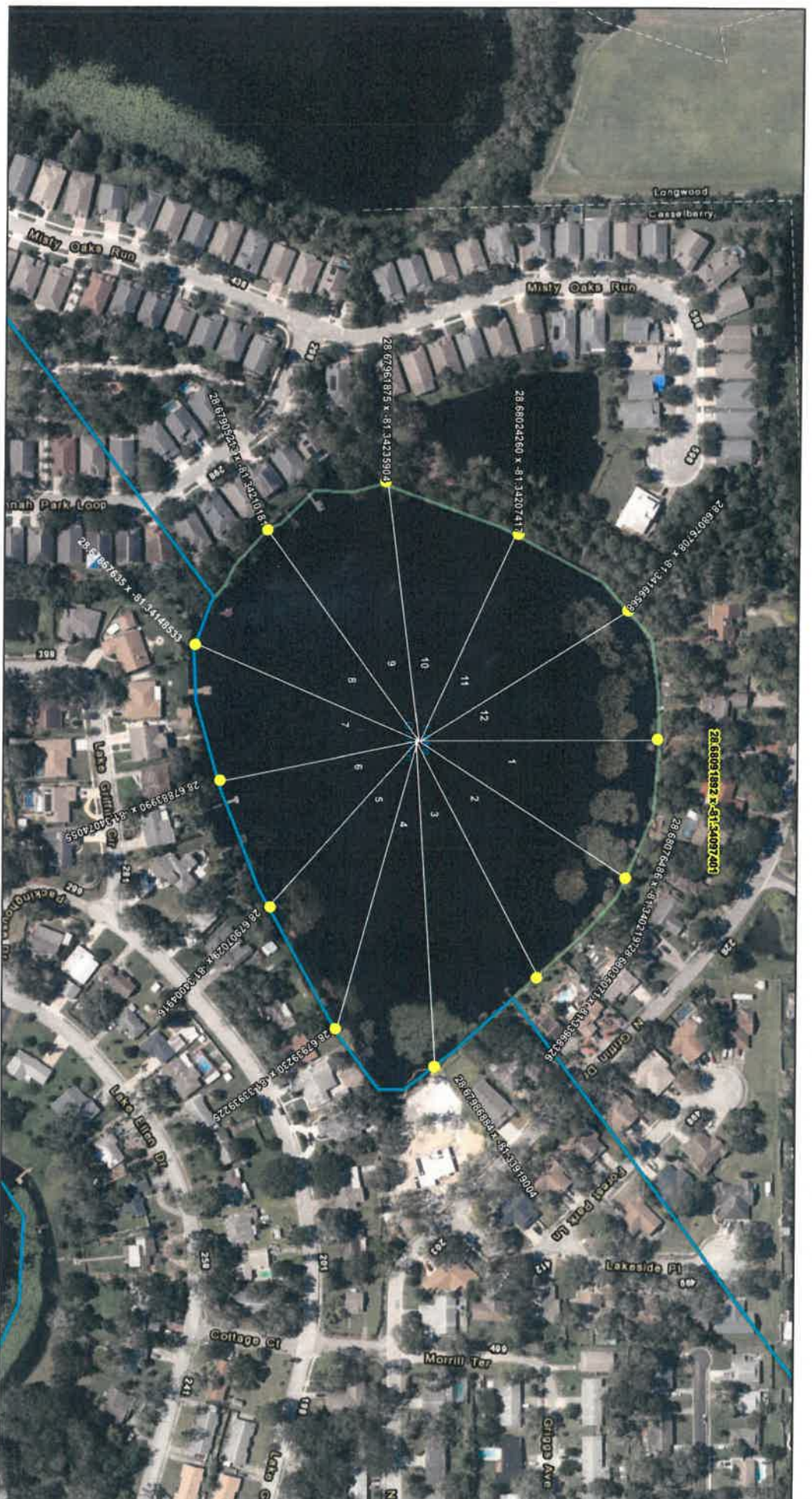
FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

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

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody:		County:		Date:									
Analyst:		Signature:		STORET:									
Except where noted as "sp." species level identification required. *Genera that may require lab verification* Plants in bold= FLEPPC invasive exotic.				Lake units sampled (circle one group): 1, 4, 7, 10 2, 5, 8, 11 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.													
SPECIES		2	5	8	11	Collected? (✓)	SPECIES		2	5	8	11	Collected? (✓)
Acer rubrum		/					Fuirena scirpoides						
Alternanthera philoxeroides				/	/		Gordonia lasianthus						
Amaranthus australis							Habenaria repens						
Andropogon sp.							Hibiscus coccineus						
Azolla filiculoides (A. caroliniana)							Hibiscus grandiflora						
Baccharis sp.							Hydrilla verticillata		/	/	/	/	/
Bacopa caroliniana							Hydrocotyle sp.		/	/	/	/	/
Bacopa monnieri				/			Hygrophila polysperma						
Bidens alba							Hymenocallis sp.						
Bidens laevis							*Hypericum fasciculatum						
Bidens mitis							*Hypericum hypericoides						
Blechnum serrulatum							*Hypericum myrtifolium						
Boehmeria cylindrica							Ilex cassine						
Brasenia schreberi							Ipomoea aquatica						
Cabomba caroliniana							Ipomoea sagittata						
Canna							Itea virginica						
Centella asiatica				/			Juncus effusus						
Cephalanthus occidentalis				/			*Juncus marginatus						
Ceratophyllum demersum							*Juncus megacephalus						
Chara sp.		/	/	/	/		Juncus repens						
Cinnamomum camphora		/	/	/	/		*Juncus scirpoides						
Cladium jamaicense		/	/	/	/		Lachnanthes caroliniana						
Colocasia esculenta		/	/	/	/		Leersia hexandra						
*Commelina							Landoltia punctata (Spirodela punctata)						
Crinum americanum		/	/	/	/		Lemna sp.						
*Cyperus alternifolius (C. involucratus)							Leucothoe racemosa (Eubotrys racemosa)						
Cyperus articulatus				/			Limnium spongia						
Cyperus haspan				/			Limnophila sessiliflora						
*Cyperus lecontei							Liquidambar styraciflua						
*Cyperus polystachyos							*Ludwigia arcuata						
*Cyperus odoratus		/					Ludwigia hex-grand-uruguayensis complex**						
*Cyperus surinamensis							*Ludwigia leptocarpa				/		
Cyrilla racemiflora							Ludwigia (native)				/		
Decodon verticillatus							*Ludwigia octovalvis				/	/	
Diodia virginiana							*Ludwigia peruviana		/			/	
*Echinochloa crus-galli							*Ludwigia repens						
*Echinochloa muricatum							Ludwigia suffruticosa						
Echinochloa walteri							Luziola fluitans (Hydrochloa carolinensis)						
Eclipta prostrata (E. alba)							Magnolia virginiana				/		
Eichhornia crassipes				/			Mayaca fluviatilis						
*Eleocharis <u>balduani</u>				/			Melaleuca quinquenervia						
Eleocharis cellulosa							Micranthemum glomeratum						
*Eleocharis elongata							Micranthemum umbrosum						
Eleocharis equisetoides							Mikania scandens			/		/	
Eleocharis interstincta							Mimosa pigra			/		/	
Eleocharis submersed viviparus				/			Myrica cerifera		/			/	
*Eriocaulon compressum													
*Eriocaulon decangulare		/											
Eupatorium capillifolium		/											
Fraxinus													

Lake Griffin 2994H



May 7, 2019

Waterbody IDs (WBIDs)

Group 1

Group 2

Group 3

Group 4

Group 5

1:2,257

0 0.03 0.05 0.1 miles

0 0.04 0.07 0.15 km

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