



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

STRATEGIC MONITORING PLAN Field Sheet

July 2022

Meter
Passed End
of Day CCV

Yes / No

WIN Station Name:		GEORGES LAKE CENTER				Sample Date:		9/14/2023	
WIN / Field ID:	20030417	ORG ID:	21FLA	ENR:	-	Latitude:	29.79324		
County:	PUTNAM	WBID:	2541	LAKE		Longitude:	-81.8489		
Receiving Body of Water:						-	RQ-	2023-08-28-31	

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Jeremy Parrish	x		x		
Katrin Villinger		x			
Katherine Halbert				x	x

Sampling Equipment			
x	Sample Container		Carboy
	Dipper		Van Dorn
	Syringe		Pole
Syringe Lot#		Filter Lot#	1755133
Secchi Equipment ID:		Disco	
Collection Method			
	Wading		Canoe/Kayak
	From Shore		Electric Motor
		x	Gasoline Motor
Depth Measured With		Meter	

Water Level:	Normal
Flow:	NA
Matrix:	Fresh
Tide Stage:	
High Tide:	
Low Tide:	
Photos:	No
Meter ID:	Bruce
Depth Gauge ID:	depth_gauge

Time Zone	Time	Total Depth (m)	Sample Depth (m)	DO (mg/L)	DO (%SAT)	Temp. (°C)	pH	Secchi Disk (m)	Sp COND (µmhos/cm)	Salinity (PPTth)
EST	1150	5.85-3 JP 10.16.23	0.3	7.75	102	30.6	6.58	1.6	54	0.02
	1155		2	7.37	95.3	29.5	6.43		54	0.02
	1158		5.3	3.93	51.6	28.7	5.83		55	0.02

Biological Samples Collected:		None		
SBIO Visit ID:	HA ID:	RPS ID:	Macrophyte ID:	LIMS Sample ID
In The Macrophyte Module:				

Parameter Suite	Parameter Methods (LIMS Test Codes)	Preservation						
		Type	Lot#	Expiration Date	pH Check			
Microbiology								
Chlorophyll	CHLSUITE-W	ICE						
Physical/Aggregate	ALKALINITY, TURBIDITY, W-F, W-TSS	ICE						
Nutrients	W-CL-IC, W-COLOR, W-SO4-IC, W-TDS	ICE						
Filtered Nutrients	W-PO4-F	Field Filtered 0.45 µm Filter	ICE	Syringe Lot#; Filter Lot#:1755133				
Acid Preserved Nutrients	W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	ICE	H2SO4*	Sa3193140	07/31/2024	H2SO4 pH<2		
Metals	W-ICPMS	W-ICP	W-HARD	ICE	HNO3**	Na3123030	05/10/2024	HNO3 pH<2
Organics (LC)	W-E8321-DI	W-E8321-MS						
Macroinvertebrates								
Organics (GC)	W-PSNP-TQ	W-TR-SQ-R		Ice	*2.0 ml of H2SO4 Used Unless Noted Otherwise **2.0 ml of HNO3 Used Unless Noted Otherwise			
Molecular								
Periphyton								
Phytoplankton								
BOD								
DOC					SyringeLot#		FilterLot#	
Other(s)								
Field Comments:								
Comments on COC:								
Relinquish Date:	09/14/2023	Signature:						

LIMS EVENT ID: _____ WIN Import ID: _____

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ QC Station ID, Field Parameters In LIMS DMT: _____

Save Field Sheets on Network: KH 09/14/2023 (Initials/Date) Migrate Data to WIN: _____ (Initials/Date)

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ **MACROPHYTE ID:** _____ **LATITUDE:** _____
COUNTY: Purnam **STORET #:** 20030417 **LONGITUDE:** _____
DATE: 9/14/23 **TIME:** 1150 **SAMPLING AGENCY:** _____
SITE NAME: George Lake Center **WBID:** 2541
FIELD ID/NAME: _____ **LAKE SIZE:** _____ **RQ:** _____

WATERSHED / LAKESIDE FEATURES

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: _____ Land Use Source & Year: _____													
☐	☐	☐	☐	☐	☐	☐	☐														
Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution : ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy Artificially Impounded ☐ Yes ☒ 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>13</u>		20	19	18	17	16	15	14	<u>13</u>	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>11</u>		20	19	18	17	16	15	14	13	12	<u>11</u>	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>9</u>		20	19	18	17	16	15	14	13	12	11	10	<u>9</u>	8	7	6	5	4	3	2	1

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water: Nutrient Sample Taken? ☒ Yes ☐ No Preserved? ☐ Yes ☐ 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 _____ Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____									
Meter Readings: Top: <u>0.3</u> <u>30.6</u> <u>0.3</u> <u>7.75</u> <u>102</u> <u>54</u> <u>0.02</u> Mid-Depth: <u>2</u> <u>24.5</u> <u>2</u> <u>7.37</u> <u>95.3</u> <u>54</u> <u>0.02</u> Bottom: <u>9.3</u> <u>28.7</u> <u>5.3</u> <u>3.93</u> <u>57.6</u> <u>55</u> <u>0.02</u> Meter ID: _____										Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☒ Slightly Turbid Color: ☐ Clear ☒ Tannic ☐ Green SECCHI (M) <u>1.6</u> Total Station Depth (M) <u>5.8</u> VOB ☐									
Sediment Type: (may check more than one) ☒ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Vegetated ☐ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____ Sample Taken? ☐ Yes ☒ No										Sediment Odors: ☒ Normal ☐ Other (Specify): _____ ☐ Anaerobic									
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										Abundance: Absent Rare Common Abundant Periphyton ☐ ☒ ☐ ☐ Nuisance Plants ☐ ☐ ☒ ☐ Submersed Plants ☐ ☒ ☐ ☐ Exotic Apple Snails ☒ ☐ ☐ ☐									
Weather Conditions: <u>At boat ramp</u>																			
SAMPLING TEAM: <u>Glenn K. Hallock Kullig</u>										SIGNATURE: <u>Farhan</u>					DATE: <u>9/14/23</u>				

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

STORET STATION NUMBER:	DATE (M/D/Y) 9/14/23	LAKE NAME George Lake Center		FIELD ID / NAME:
ECO-REGION:	COUNTY: Putnam	SAMPLING LOCATION/DESCRIPTION:		LAKE SIZE:
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 20 19 18 17 16	3 2.6 2.2 1.8 1.4 15 14 13 12 11	1.0 0.9 0.8 0.7 0.6 10 9 8 7 6	0.5 0.4 0.3 0.2 0.1 5 4 3 2 1
Vegetation Quality	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 ☒	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 ☒	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 ☒	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%) ☒	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 ☒	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 ☒			
TOTAL SCORE	84			
COMMENTS:				

ANALYSIS DATE: 9/14/23	ANALYST: J. B. [Signature]	SIGNATURE: [Signature]
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DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: <u>Georges Lake</u>		County: <u>Putnam</u>		Date: <u>9/14/23</u>							
Analyst: <u>Jerry Parr</u>		Signature: <u>[Signature]</u>		STORET: <u>2003C414</u>							
Except where noted as "sp." species level identification required. *Genera that may require lab verification* Plants in bold = FLEPPC invasive exotic. 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.				Lake units sampled (circle one group): 1, 4, 7, 10 2, 5, 8, 11 <u>3, 6, 9, 12</u>							
SPECIES	3	6	9	12	Collected? (✓)	SPECIES	3	6	9	12	Collected? (✓)
Acer rubrum	✓			✓		Habenaria repens					
Alternanthera philoxeroides						Hydrilla verticillata					
Andropogon sp.	✓		✓			Hydrocotyle sp.	✓		✓	✓	
Azolla filliculoides (A. caroliniana)						Hygrophila polysperma					
Baccharis sp.			✓			*Hypericum fasciculatum					
Bacopa caroliniana						*Hypericum hypericoides					
Bacopa monnieri						*Hypericum myrtifolium					
Bidens laevis						Ilex cassine	✓				
Bidens mitis			✓			Ipomoea aquatica					
Blechnum serrulatum						Ipomoea sagittata					
Boehmeria cylindrica						Itea virginica					
Brasenia schreberi						Juncus effusus					
Cabomba caroliniana						*Juncus marginatus					
Casuarina equisetifolia						*Juncus megacephalus					
Centella asiatica						Juncus repens					
Cephalanthus occidentalis	✓	✓		✓		*Juncus scirpoides					
Ceratophyllum demersum						Lachnanthes caroliniana				✓	
Chara sp.						Leersia hexandra				✓	
Cladium jamaicense X				✓		Landoltia punctata (Spirodela punctata)					
Cliftonia monophylla						Lemna sp.					
Colocasia esculenta	✓		✓	✓		Leucothoe racemosa (Eubotrys racemosa)					
*Commelina						Limnium spongiosa					
Crinum americanum						Limnophila sessiliflora					
*Cyperus alternifolius (C. involutus)						Liquidambar styraciflua			✓		
Cyperus articulatus						*Ludwigia arcuata					
Cyperus haspan						*Ludwigia leptocarpa	✓	✓	✓		
*Cyperus lecontei						*Ludwigia linearis					
*Cyperus polystachyos						*Ludwigia octovalvis				✓	
*Cyperus odoratus X	✓			✓		*Ludwigia peruviana	✓	✓	✓	✓	
*Cyperus surinamensis						*Ludwigia repens					
Cyrtilla racemiflora						*Ludwigia					
Decodon verticillatus	✓		✓			Luziola fluitans (Hydrochloa carolinensis)					
Diodia virginiana						Lyonia lucida	✓			✓	
*Echinochloa crus-galli						Magnolia virginiana	✓				
*Echinochloa muricatum						Mayaca fluviatilis					
Echinochloa walteri						Melaleuca quinquenervia					
Eclipta prostrata (E. alba)						Micranthemum glomeratum					
Egeria densa						Micranthemum umbrosum					
Elchhornia crassipes				✓		Mikania scandens					
*Eleocharis baldwinii						Mimosa pigra					
*Eleocharis submersa viviparous	✓	✓	✓	✓		Myrica cerifera	✓	✓	✓		
Eleocharis cellulosa											
Eleocharis equisetoides											
Eleocharis interstincta											
*Eriocaulon compressum											
*Eriocaulon decangulare											
Eupatorium capillifolium	✓		✓	✓							
*Fuirena											
Fuirena scirpoides	✓		✓	✓							
Gordonia lasianthus		✓	✓								

[illegible]