

LVI

Site Name Banana Lake Sample Date 5/7/19

WBID 2961A1 WIN ID G2CE0206 RQ 2019-05-06-51

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	LMD 5/10/19	MKL 5/21/19
Create SBIO station visit 79454	LMD 5/10/19	n/a
Vascular Entry (add LIMS ID) 11282	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 06/27/19	n/a
File in cabinet		n/a

Comments/notes:



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Banana Lake @ Center

Date: 05/07/2019
(mm/dd/yyyy)

WIN/ Field ID: G2CE0206

WBID: 2961A1

Latitude: 28.77886

County: Seminole

ORG ID: 21FLCEN

Longitude: -81.36456

Receiving Body of Water: _____

RQ-2019- 05-06-51

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Linger									
Mike Drennan									

Sampling Equipment				
☒ 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>				

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	1038	4.2	0.3	2.8	5.93	75.3	<u>7.11</u> 6.80	0.12	260.4	27.6
CEN			3.7		0.21	2.5	<u>6.32</u> 6.80	0.12	<u>260.5</u> 258.1	27.7

Biological Samples Collected: None HA SCI RPS Algae ID LVS <u>LVI</u> Other:									
SBIO ID Numbers: SBIO-ID: <u>79454</u> HA-ID: <u>15778</u> RPS-ID: _____ Macrophyte-ID: <u>11282</u> LIMS#: <u>2084386</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	SA8344070	12/10/19	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	13615055		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-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			

H2504
LOT# SA8344070
EXP: 12/10/2019

Place Preservative Sticker(s) Here
(If Available)

Notes:

WIN ID / Field ID →

Lake Banana @ Center



G2CE0206

Signature: _____

Date: 5/7/19

LIMS EVENT ID: CENT-DIST-2019-05-08-01

Enter Field Parameters, Verify Station ID In UMS DMT: LMD 5/10/19

QC Station ID, Field Parameters In UMS DMT: MKL 5/21/19

Scan/Save Field Sheets LMD 5/10/19
(Initials/Date)

Migrate Data to WIN: LMD 6/27/19
(Initials/Date)

Verify Data In WIN: _____
(Initials/Date)

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

STORET STATION NUMBER: G2CE0206	DATE (M/D/Y) 05/01/2019	LAKE NAME Banana Lake		FIELD ID / NAME:	
ECO-REGION:	COUNTY: Seminole	SAMPLING LOCATION/DESCRIPTION: C 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 ☐	
HYDROLOGY				Impounded, hydrology of system artificially controlled ☐	
Color	Very clear, uncolored water (benthic sampling appropriate) ☒	Water somewhat tannin stained (benthic sampling appropriate) ☐		Dark, discolored water (water color 20 PCU or higher) ☐	
	Optimal	Suboptimal		Marginal	
Secchi ☐	Secchi >3 m Or VOB	Secchi(m)		Secchi(m)	
15	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
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	
9	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
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	
8	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
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	
16	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
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	
4	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
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	
4	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
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				
7	20 19 18 17 16	15 14 13 12 11		10 9 8 7 6	
TOTAL SCORE	63				
COMMENTS:					
ANALYSIS DATE: 5/7/19	ANALYST: Mike Linger		SIGNATURE: Mike Linger		

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 79454 MACROPHYTE ID: 11282 LATITUDE: 28.77886
COUNTY: Seminole STORET #: G2CE0206 LONGITUDE: -81.36456
DATE: 5/7/19 TIME: 1038 SAMPLING AGENCY: FDEP CF. Roc
SITE NAME: Banana Lake @ Center WBID: 2961A1
FIELD ID/NAME: _____ LAKE SIZE: med RQ: -2019-05-06-51

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)							
☐	☐	☐	☐	☒	☐	☐	☐							
Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy										Artificially Impounded ☐ Yes ☒ No				
Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy										Land Use Source & Year:				
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>8</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>4</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>4</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

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: Top: Depth (M) <u>0.3</u> Temp. (°C) <u>27.6</u> pH (SU) <u>6.80</u> D.O. (MG/L) <u>5.93</u> D.O. Sat. (%) <u>75.3</u> Cond. (UMHO/CM) <u>260.4</u> Salinity (PPT) <u>0.12</u> Mid-Depth: _____ Bottom: <u>3.7</u> <u>23.9</u> <u>6.32</u> <u>0.21</u> <u>2.5</u> <u>258.1</u> <u>0.12</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>2.8</u> Total Station Depth (M) <u>4.2</u> VOB ☐							
Sediment Odors: ☒ Normal ☐ Anaerobic ☐ Other (Specify): _____								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 ☒ ☐ ☐ ☐								Additional Notes:							

Weather Conditions :

80's partly cloudy

SAMPLING TEAM: Mike Linger / Mike Drannan

SIGNATURE: [Signature]

DATE: 5/7/19

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site:						Date:					
SPECIES	3	6	9	12	Collected? (✓)	SPECIES	3	6	9	12	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>Oxycaryon cubense</i>)	/	/		/	
<i>Nuphar</i> sp.	/	/	/	/		<i>Scirpus cyperinus</i>					
<i>Nymphaea mexicana</i>						* <i>Sesbania</i>					
<i>Nymphaea odorata</i>	/	D	/	D		<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.	D	/	D		
<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>Sagittaria isoetiformis</i>	/			/	✓
* <i>Potamogeton pectinatus</i> (<i>Stuckenia pectinatus</i>)											
<i>Proserpinaca pectinata</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: <u>Banana Lake</u>		County: <u>Seminole</u>		Date: <u>5/7/19</u>							
Analyst: <u>Mike Linger, Mike Drennan</u>		Signature: <u>[Signature]</u>		STORET: <u>6260206</u>							
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 <u>3, 6, 9, 12</u>							
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	3	6	9	12	Collected? (✓)	SPECIES	3	6	9	12	Collected? (✓)
Acer rubrum						Fraxinus					
Alternanthera philoxeroides						Fuirena scirpoides					
Amaranthus australis						Gordonia lasianthus					
Andropogon sp.						Habenaria repens					
Azolla filiculoides (A. caroliniana)						Hibiscus coccineus					
Baccharis sp.						Hibiscus grandiflora					
Bacopa caroliniana						Hydrilla verticillata					
Bacopa monnieri						Hydrocotyle sp.					
Bidens alba						Hygrophila polysperma					
Bidens laevis						Hymenocallis sp.					
Bidens mitis						*Hypericum fasciculatum					
Blechnum serrulatum						*Hypericum hypericoides					
Boehmeria cylindrica						*Hypericum myrtifolium					
Brasenia schreberi						Ilex cassine					
Cabomba caroliniana						Ipomoea aquatica					
Canna						Ipomoea sagittata					
Centella asiatica						Itea virginica					
Cephalanthus occidentalis						Juncus effusus					
Ceratophyllum demersum						*Juncus marginatus					
Chara sp.						*Juncus megacephalus					
Cicuta maculata						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						Limnobia spongia					
Cyperus haspan						Limnophila sessiliflora					
*Cyperus lecontei						Liquidambar styraciflua					
*Cyperus polystachyos						*Ludwigia arcuata					
*Cyperus odoratus						*Ludwigia grandiflora					
*Cyperus surinamensis						*Ludwigia hexapetala					
Cynilla racemiflora						*Ludwigia leptocarpa					
Decodon verticillatus						Ludwigia (native)					
Diodia virginiana						*Ludwigia octovalvis					
*Echinochloa crus-galli						*Ludwigia peruviana					
*Echinochloa muricatum						*Ludwigia repens					
Echinochloa walteri						Ludwigia suffruticosa					
Eclipta prostrata (E. alba)						Luziola fluitans (Hydrochloa carolinensis)					
Eichhornia crassipes						Magnolia virginiana					
*Eleocharis						Mayaca fluviatilis					
Eleocharis cellulosa						Melaleuca quinquenervia					
*Eleocharis elongata						Micranthemum glomeratum					
Eleocharis equisetoides						Micranthemum umbrosum					
Eleocharis interstincta						Mikania scandens					
Eleocharis submersa viviparous						Mimosa pigra					
*Eriocaulon compressum						Myrica cerifera					
*Eriocaulon decangulare											
Eupatorium capillifolium											

