

LVI

Site Name Lake Lindley Sample Date 10/22/19

WBID 2630 E WIN ID GZCE0220 RQ-2019-10-21-60

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	LMD 11/7/19	MKL 11/13/19
Create SBIO station visit 80460	LMD 11/8/19	n/a
Vascular Entry (add LIMS ID) 11541	LMD 11/8/19	MKL 11/13/19
Lake Observation Sheet Entry	LMD 11/8/19	MKL 11/13/19
Authorize SBIO data	MKL 11/13/19	n/a
Scan all sheets to 21FLCEN folder		n/a
LIMS/WIN migration		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: Lake Lindley @ Center of North Lobe

Date: 10/22/2019

WIN/ Field ID: G2CE0220

WBID: 2630E

Latitude: 29.051419

(mm/dd/yyyy)

County: Volusia

ORG ID: 21FLCEN

Longitude: -81.284629

(Decimal Degrees)

Receiving Body of Water: _____

RQ-2019- 10-21-60

(Decimal Degrees)

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: <u>Dry/ Pooled/ Low / Normal / <u>High</u> / Flooded</u>					Motor ID# <u>Shrimp / Trap</u>					Matrix: <u>Fresh</u> / Marine / DI									
Photos: <u>Yes</u> / No					Flow: <u>No Flow / Intestinal / Flowing / <u>NA</u></u>					Tide: <u>Rising/ Falling/ Slack/ <u>NA</u></u>					Tide Times: <u>High</u> / 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)	<u>1328</u>	<u>7.3</u>	<u>0.3</u>	<u>2.1</u>	<u>8.17</u>	<u>104.4</u>	<u>7.56</u>	<u>0.06</u>	<u>138.0</u>	<u>27.9</u>
GEN			<u>6.8</u>		<u>5.17</u>	<u>64.0</u>	<u>6.76</u>	<u>0.06</u>	<u>139.1</u>	<u>26.3</u>

Biological Samples Collected: <u>None</u> / <u>HA</u> / SCI / RPS / Algae ID / LVS / <u>LVI</u> / Other:				
SBIO ID Numbers: SBIO-ID: <u>80460</u> HA-ID: <u>16371</u> RPS-ID: _____ Macrophyte-ID: <u>1154</u> LIMS#: <u>2136754</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>SA7163030</u>	<u>10/30/19</u>	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	<u>16930280</u>		
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			

Notes:				
Signature: <u>[Signature]</u> Date: <u>10/22/19</u>				

WIN ID / Field ID →	
Lake Lindley @ Center of North Lobe	

Barcode	

G2CE0220

LIMS EVENT ID: CENT-DIST-2019- 10-23-01

Enter Field Parameters, Verify Station ID In LIMS DMT: MD 11/7/19

QC Station ID, Field Parameters In LIMS DMT: MAL 11/13/19

Scan/Save Field Sheets

Migrate Data to WIN:

Verify Data In WIN:

(Initials/Date)

(Initials/Date)

(Initials/Date)

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

STORET STATION NUMBER:	DATE (M/D/Y) 10/22/19		LAKE NAME Lake Lindlay		FIELD ID / NAME: GZCE0220	
ECO-REGION:	COUNTY: Volusia		SAMPLING LOCATION/DESCRIPTION: Center of North Lobe		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	☐		☒		☐	
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		Secchi(m)		0.5 0.4 0.3 0.2 0.1	
13	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	
10	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	
5	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	
12	20 19 18 17 16		15 14 13 12 11		10 9 8 7 6	
Lakeside Adverse Human Alternations	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	
5	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					
12	20 19 18 17 16		15 14 13 12 11		10 9 8 7 6	
TOTAL SCORE	61					
COMMENTS:						
ANALYSIS DATE: 10/22/19		ANALYST: Mike Linger		SIGNATURE: 		

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYTE ID: _____ LATITUDE: 29.051419
COUNTY: Volusia STORET #: GZCE0220 LONGITUDE: -81.284629
DATE: 10/22/19 TIME: 1328 SAMPLING AGENCY: FDEP CE. Roc
SITE NAME: Lake Lindley @ Center of North Lobe WBID: 2630 E
FIELD ID/NAME: _____ LAKE SIZE: Med RQ: -2019-10-21-60

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)														
<u>10</u>		<u>40</u>	<u>15</u>	<u>35</u>																	
Local Watershed Erosion (select one) : ☒ None ☐ Slight ☐ Moderate ☐ Heavy										Artificially Impounded											
Local Watershed NPS Pollution : ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy										☐ 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>5</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>5</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: <u>0.3</u> <u>27.9</u> <u>7.56</u> <u>8.17</u> <u>104.4</u> <u>138.0</u> <u>0.06</u> Mid-Depth: _____ Bottom: <u>6.8</u> <u>26.3</u> <u>7.6</u> <u>5.17</u> <u>64.0</u> <u>139.1</u> <u>0.06</u>										Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____									
Meter ID: <u>Craw Daddy</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>2.1</u> Total Station Depth (M) <u>7.3</u> VOB ☐									
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 ☒ ☐ ☐ ☐										Additional Notes:									
Weather Conditions : <u>80's clear</u>																			
SAMPLING TEAM: <u>Mike Linger / Mike Drennen</u>										SIGNATURE: <u>Mike Linger</u>					DATE: <u>10/22/19</u>				

Waterbody: <u>Lake Lindley</u>		County: <u>Volusia</u>		Date: <u>10/22/19</u>							
Analyst: <u>Mike Linger, Mike Drenan</u>		Signature: <u>[Signature]</u>		STORET: <u>G2CE0220</u>							
Except where noted as "sp." species level identification required. *Genera that may require lab verification*				Lake units sampled (circle one group):							
Plants in bold = FLEPPC invasive exotic.				1, 4, 7, 10 <u>2, 5, 8, 11</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.				3, 6, 9, 12							
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	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 <u>diffusa</u>						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					
Cyrtilla 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 <u>viv</u>						Mayaca fluviatilis					
Eleocharis cellulosa						Melaleuca quinquenervia					
*Eleocharis elongata						Micranthemum glomeratum					
Eleocharis equisetoides						Micranthemum umbrosum					
Eleocharis interstincta						Mikania scandens					
Eleocharis submersed viviparous						Mimosa pigra					
*Eriocaulon compressum						Myrica cerifera					
*Eriocaulon decangulare											
Eupatorium capillifolium											

No Dom: 11

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: <u>Lake Lindley</u>						Date: <u>10/22/17</u>					
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
Myriophyllum aquaticum						Salix caroliniana					
*Myriophyllum heterophyllum						Salvinia minima					
*Myriophyllum laxum						Sambucus canadensis					
*Myriophyllum pinnatum						Sapium sebiferum					
Myriophyllum spicatum						Saururus cernuus					
*Najas filifolia						Schinus terebinthifolius					
*Najas guadalupensis						*Schoenoplectus californicus					
*Najas minor						*Schoenoplectus pungens					
Nelumbo lutea						*Schoenoplectus tabernaemontani (Scirpus validus)					
Nitella spp.						Scirpus cubensis (Oxycaryon cubense)					
Nuphar sp.						Scirpus cyperinus					
Nymphaea mexicana						*Sesbania					
Nymphaea odorata						Solidago sp.					
Nymphoides aquatica						Sparganium americanum					
Nyssa sylvatica var. biflora						Spartina bakeri					
Orontium aquaticum						Spirodela polyrhiza					
Osmunda cinnamomea						Taxodium sp.					
Osmunda regalis						Thalia geniculata					
Panicum hemitomon	/	/	/	/		Thelypteris interrupta					
Panicum repens	/	/	/	/		Thelypteris palustris					
Paspalidium geminatum						Triadenum virginicum					
*Paspalum repens						Typha sp.	/	/	/	/	
Paspalum urvillei						Urochloa mutica (Brachiaria mutica)	/	/	/	/	
Peltandra sp.						*Utricularia gibba (U. biflora)					
Persea sp.						*Utricularia foliosa					
Pennisetum purpureum						*Utricularia inflata					
Phragmites australis						*Utricularia purpurea					
Pinus elliotii						*Utricularia radiata					
Pistia stratioides						*Utricularia resupinata					
Pluchea sp.						Vallisneria americana					
*Polygonum glabrum (densiflorum)						Vitis sp.	/	/	/	/	
Polygonum hirsutum	/	/	/	/		*Websteria confervoides					
*Polygonum hydropiperoides						Wedelia trilobata (Sphagneticola trilobata)					
*Polygonum punctatum						Wolffiella spp.					
*Polygonum						Woodwardia virginica					
Pontederia cordata						Xyris sp.	/	/	/	/	
*Potamogeton diversifolius						Zizania aquatica					
*Potamogeton illinoensis						Zizaniopsis milacea					
*Potamogeton pusillus						<i>Ludwigia erecta</i>	/	/	/	/	
*Potamogeton pectinatus (Stuckenia pectinatus)						<i>Utricularia luteola</i>	/	/	/	/	
Proserpinaca pectinata						<i>Utricularia lobata</i>	/	/	/	/	
*Rhexia						<i>R. megacephala</i> <i>microcephala</i>	/	/	/	/	
*Rhynchospora corniculata											
*Rhynchospora inundata											
Rhynchospora nitens											
Ricciocarpus natans											
Sabal palmetto											
Sacciolepis striata	/	/	/	/							
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis	/	/	/	/							
Sagittaria lancifolia											
Sagittaria latifolia											

-Terete leaves

2

Knock on Door @ 1050 Lindy Blvd (Charles & Sue)

G2

Ramp 29.04 7215, -81.284152
Site 29.051419, -81.284629

LVI Map for Lindley Lake, WBID 2630E

