



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

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Data Qualified?

Yes / No

REF LVI March 2017

Location/STORET Station Name: Redwater Lake - Center of Lake Date: 10/11/2017

STORET # 20020460 WBID: 2775C Latitude: 29.2011

County: Marion RQ - 2017-09-25-45 ORG ID: 21FLCEN Longitude: -81.89028

Receiving Body of Water: _____ Field ID: 20020460

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

Sampling Equipment			
☐ Sample Container	☐ Van Dorn	☐ Pole	
☒ Carboy	☒ Syringe		
☐ Dipper	☐ Other		

Equipment ID: _____

Collection Method			
☐ Wading	☒ Via Boat		
☐ From Shore	☒ Canoe/Kayak		
☐ Other (note below)	☐ Electric Motor		
	☒ Gasoline Motor		

Water Level: Dry / Pooled / Low / Normal / High / Flooded

Meter ID# Bapp / Non Photos: Yes / No

Matrix: Fresh / Marine / DI

Tide Falling: Yes / No / NA

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (umhos/cm)	Temp. (C°)
<u>EST</u>	<u>1251</u>	<u>0.3</u>	<u>2.1</u>	<u>6.5</u>	<u>84</u>	<u>5.9</u>	<u>0.04</u>	<u>0.4</u>	<u>87</u>	<u>29.4</u>
<u>CEN</u>		<u>1.6</u>		<u>5.8</u>	<u>75</u>	<u>5.9</u>	<u>0.04</u>		<u>87</u>	<u>28.9</u>

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other _____

SBIO ID Numbers: SBIO-ID: 78057 RPS-ID: _____ Macrophyte-ID: 10750 LIMS#: 1936618

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4	<u>SA7163030</u>	<u>6/12/18</u>	☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO3	<u>NA 7086060</u>	<u>3/27/18</u>	☒ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☐ Ice			
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 ☐ qPCR	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R	☐ Ice			
	☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Other			

Contains 1:1 Sulfuric Acid Lot No.: SA7163030 Expires: 06/12/18 See Safety Data Sheet (SDS)

Contains 1:1 Nitric Acid Lot No.: NA-7086060 EXP: 03/27/18 Warning! See SDS

Notes: Road 29.1863 REF LVI
-81.9013

Redwater Lake -
Center of Lake

Date: 10/11/2017
RQ-2017-09-25-45

20020460
Field ID
STORET
20020460

Signature: [Signature] Date: 10/11/17

Field Parameters Entered into LIMS: LMD 10/19/17 Field Parameters QC in LIMS: MKL 10/23/17

Date Migrated to STORET: _____ Field Sheets Scanned/Saved: _____

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 78057 MACROPHYTE ID: 10750 LATITUDE: 29.20111
COUNTY: Marion STORET #: 20020460 LONGITUDE: -81.89028
DATE: 10/11/17 TIME: 1251 SAMPLING AGENCY: FDEP-CEP0C
SITE NAME: Redwater Lake - center of Lake WBID: 2775C
FIELD ID/NAME: 20020460 LAKE SIZE: 75.6 Ha RQ: 2017-09-25-45

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category - from GIS) : Forest/Natural <u>100</u> Silviculture <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>0</u> Commercial <u>0</u> Industrial <u>0</u> Other (Specify) <u>0</u>				LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) LDI: <u>1.000</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: <u>Run 53 (2017)</u>	
STORMWATER INPUTS <u>20</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		Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place 10 9 8 7 6
LAKESIDE ALTERATIONS <u>19</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		Many structures, roads or other human disturbance visible (50%-70% lakeside affected) 10 9 8 7 6
BUFFER ZONE <u>19</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		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 # <u>SA 7163030 / 7086060</u> Exp. Date: <u>6/4/18 / 3/27/18</u> 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: Depth (M) <u>0.3</u> Temp. (°C) <u>29.4</u> pH (SU) <u>5.9</u> D.O. (MG/L) <u>6.5</u> D.O. Sat. (%) <u>84</u> Cond. (UMHO/CM) <u>87</u> Salinity (PPT) <u>0.04</u> Mid-Depth: <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> Bottom: <u>1.6</u> <u>28.9</u> <u>5.9</u> <u>5.8</u> <u>75</u> <u>87</u> <u>0.04</u>						Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid Color: ☐ Clear ☒ Tannic ☐ Green SECCHI (M) <u>0.4</u> Total Station Depth (M) <u>2.1</u> VOB ☐					
Sediment Type: (may check more than one) ☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Vegetated ☒ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____						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 : <u>80's Sunny</u>											
SAMPLING TEAM: <u>Mike Linger / Mike Drennan</u>						SIGNATURE: <u>[Signature]</u>			DATE: <u>10/11/17</u>		

Waterbody: <u>Red water Lake</u>		County: <u>Marion</u>		Date: <u>10/11/17</u>							
Analyst: <u>Mike Linger / Mike Drennon</u>		Signature: <u>[Signature]</u>		STORET: <u>20020460</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 <u>2, 5, 8, 11</u> 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	/	/				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						Limnium 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						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											

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: Redwater Lake - Center of Lake

Date: 10/11/17

SPECIES	2	5	8	11	Collected? (v)	SPECIES	2	5	8	11	Collected? (v)
Myriophyllum aquaticum						<i>Salix caroliniana</i>	/	/	/		
* <i>Myriophyllum heterophyllum</i>						Salvinia minima	/	/	/	/	
* <i>Myriophyllum laxum</i>						<i>Sambucus canadensis</i>					
* <i>Myriophyllum pinnatum</i>						Sapium sebiferum					
Myriophyllum spicatum						<i>Saururus cernuus</i>					
* <i>Najas filifolia</i>						Schinus terebinthifolius					
* <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>)	/	/	/	C	
<i>Nuphar</i> sp.	/	D	C	/		<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>					
Panicum repens						<i>Thelypteris palustris</i>					
<i>Paspalidium geminatum</i>	/					<i>Triadenum virginicum</i>					
* <i>Paspalum repens</i>						<i>Typha</i> sp.	C	/	C	C	
<i>Paspalum urvillei</i>						Urochloa mutica (<i>Brachiaria mutica</i>)					
<i>Peltandra</i> sp.						* <i>Utricularia gibba</i> (<i>U. biflora</i>)					
<i>Persea</i> sp.						* <i>Utricularia foliosa</i>					
Pennisetum purpureum						* <i>Utricularia inflata</i>					
<i>Phragmites australis</i>						* <i>Utricularia purpurea</i>					
<i>Pinus elliotii</i>						* <i>Utricularia radiata</i>					
Pistia stratioides						* <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>						Wedelia trilobata (<i>Sphagneticola trilobata</i>)					
* <i>Polygonum punctatum</i>						<i>Wolffia</i> spp.	/				
* <i>Polygonum</i>						<i>Woodwardia virginica</i>					
<i>Pontederia cordata</i>	C	/	/			<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>Polygonum (Persicaria) punctatum</i>	/	/	/	/	✓ LMD
* <i>Potamogeton pectinatus</i> (<i>Stuckenia pectinatus</i>)						<i>Serrated Pic 1 (B. dens laevis)</i>	/	/	/	/	✓ LMD
<i>Proserpinaca pectinata</i>						<i>Spider lily (Hymenocallis sp.)</i>	/	/	/	/	✓ LMD
* <i>Rhexia</i>						<i>Wolffia</i> sp.	/				
* <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>											

lmd

✓ LMD

✓ LMD

✓ LMD

Redwater Lake - REF LVI



180 90 0 180 Meters

