LVI

Site Name Lake Winnemissett Sample Date 9/19/18

WBID 2931 WIN ID G2LE0184 RQ 2018-09-17-64

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	KWM OCT 05 2018	MKL 10/11/18
Create SBIO station visit	KWM OCT 05 2018	n/a
Vascular Entry (add LIMS ID)	KWM OCT 05 2018	MKL 10/11/18
Lake Observation Sheet Entry	KWM OCT 05 2018	MKL 10/11/18
Authorize SBIO data	MKL 10/11/18	n/a
Scan all sheets to 21FLCEN folder		n/a
LIMS/WIN migration		n/a
File in cabinet		n/a

Comments/notes:

sending S. indica to Nia for verification ✓

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2018

Data Qualified? Yes / No

WIN Station Name: Lake Winnemissett @ Center **Date:** 9/19/18 (mm/dd/yyyy)

WIN/ Field ID: G2CE0184 **WBID:** 2931 **Latitude:** 29.022739 (Decimal Degrees)

County: Volusia **ORG ID:** 21 FL CEN **Longitude:** -81.249609 (Decimal Degrees)

Receiving Body of Water: **RQ-2018-** 09-17-64

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Lingen	✓		✓		
Katie Mynch		✓		✓	✓

Sampling Equipment
- ☑ Sample Container ☐ Van Dorn ☐ Pole
- ☐ Carboy ☑ Syringe
- ☐ Dipper ☐ Other
- Depth Measured with [Secchi Disk Line] / ~~Meter~~
- Equipment ID ~~KNOTHEAD (67)~~ / LEADFOOT (NON)]

Collection Method
- ☐ Wading ☑ Canoe/Kayak
- ☐ From Shore ☑ Electric Motor
- ☐ Other ☐ Gasoline Motor

Water Level: Dry/ Pooled/ Low / (Normal) / High / Flooded **Meter ID#** Boop-Non **Matrix:** (Fresh) / Marine / DI

Photos: Yes / (No) **Flow:** No Flow / Intestital / Flowing / (NA) **Tide:** Rising/ Falling/ Slack / (NA) **Tide Times:** High Low

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPTh)	Sp COND (µmhos/cm)	Temp. (C°)
(EST)	1130	2.9	0.3	2.9(S)	7.35	99.8	7.16	0.08	171	31.44
CEN			2.4		7.41	100.2	7.04	0.08	171	31.30

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

SBIO ID Numbers: SBIO-ID: 78911 HA-ID: RPS-ID: Macrophyte-ID: 11083 LIMS#: 20626829

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☑ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☑ Ice ☐ H_2SO_4	SA8101020	4/11/19	☑ <2
Metals	☑ W-ICPMS ☑ W-ICP	☑ Ice ☑ HNO_3	NA8080070	3/21/19	☐ <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-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-UHERB-AA ☐ W-AHERB-AA ☐ W-CARB-AA ☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

H2SO4 LOT# SA8101020 EXP: 04/11/2019

Place Preservative Sticker(s) Here (If Available)

HNO3 LOT# NA8080070 EXP: 03/21/19

Notes:

115 Lake Winnemissett Dr

WIN ID / Field ID → Lake Winnemissett @ Center (2931)

G2CE0184

Signature: KWMunch **Date:** 9/19/18

Enter Field Parameters, Verify Station ID in LIMS DMT: KWM OCT 05 2018 (Initials/Date) QC Station ID, Field Parameters in LIMS DMT: (Initials/Date)

Scan/Save Field Sheets (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data in WIN: (Initials/Date)

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 78911 MACROPHYTE ID: 11083 LATITUDE:
COUNTY: Volusia STORET #: G2CE0184 LONGITUDE:
DATE: 9/19/18 TIME: 1130 SAMPLING AGENCY:
SITE NAME: Lake Winnemissett WBID: 2931
FIELD ID/NAME: G2CE0184 LAKE SIZE: RQ: 2018-09-17-04

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
40				60			

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) 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 9	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
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
LAKESIDE ALTERATIONS 10	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)
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
BUFFER ZONE 10	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
	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 ☑ 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:	Depth (M) ↔	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat. (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top:	31.44	0.3	7.16	7.35	99.8	171	0.08
Mid-Depth:							
Bottom :	31.30	2.4	7.04	7.41	100.2	171	0.08

Meter ID: Boop-Non

Clarity: ☑ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid

Color: ☑ Clear ☐ Tannic ☐ Green

SECCHI (M) 2.9 VOB ☑

Total Station Depth (M) 2.9

Sediment Type: (may check more than one) Sample Taken? ☐ Yes ☑ No

☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☑ Vegetated

☑ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____

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 : very hot, sunny

SAMPLING TEAM: MKL, KWM **SIGNATURE:** KMarch **DATE:** 9/19/18

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Lake Winnemissett	County: Volusia	Date: 9/19/18
Analyst:	Signature:	STORET:

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
3, 6, 9, 12

SPECIES	2	5	8	11	Collected? (√)
Acer rubrum			/		
Alternanthera philoxeroides					
Amaranthus australis					
Andropogon sp.	/	/	/	/	
Azolla filiculoides (A. caroliniana)	/				
Baccharis sp.		/	/		
Bacopa caroliniana	/	/	/	/	
Bacopa monnieri					
Bidens alba		/	/		
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi					
Cabomba caroliniana					
Canna					
Centella asiatica					
Cephalanthus occidentalis			/		
Ceratophyllum demersum					
Chara sp.					
Cinnamomum campgora		/	/	/	
Cladium jamaicense					
Colocasia esculenta					
*Commelina _____					
Crinum americanum					
***Cyperus alternifolius (C. involucratus)**					
Cyperus articulatus					
Cyperus haspan	/				
*Cyperus lecontei				/	
*Cyperus polystachyos	/		/	/	
*Cyperus odoratus	/				
*Cyperus surinamensis	/		/		
Cyrilla racemiflora					
Decodon verticillatus					
Diodia virginiana					
*Echinochloa crus-galli					
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Eichhornia crassipes				/	
*Eleocharis _____					
Eleocharis cellulosa					
*Eleocharis elongata			/	/	
Eleocharis equisetoides					
Eleocharis interstincta					
Eleocharis submersed viviparous	/	/	/	/	
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium		/	/		
Fraxinus					

SPECIES					Collected? (√)
Fuirena scirpoides	/	/	/	/	
Gordonia lasianthus		/			
Habenaria repens					
Hibiscus coccineus					
Hibiscus grandiflora					
Hydrilla verticillata					
Hydrocotyle sp.			/	/	
Hygrophila polysperma					
Hymenocallis sp.					
*Hypericum fasciculatum	/	/	/		
*Hypericum hypericoides					
*Hypericum myrtifolium					
Ilex cassine		/			
Ipomoea aquatica					
Ipomoea sagittata					
Itea virginica					
Juncus effusus					
*Juncus marginatus	/		/		
*Juncus megacephalus					
Juncus repens					
*Juncus scirpoides	X	/	/		/ fem
Lachnanthes caroliniana			/		
Leersia hexandra	/				
Landoltia punctata (Spirodela punctata)					
Lemna sp.					
Leucothoe racemosa (Eubotrys racemosa)					
Limnobium spongia					
Limnophila sessiliflora					
Liquidamber styraciflua			/	/	
*Ludwigia arcuata					
Ludwigia hex-grand-uruguayensis complex**					
*Ludwigia leptocarpa					
Ludwigia (native)					
*Ludwigia octovalvis	/		/	/	
***Ludwigia peruviana**	/	/	/	/	
*Ludwigia repens					
Ludwigia suffruticosa	/	/	/		
Luziola fluitans (Hydrochloa carolinensis)				/	
Magnolia virginiana					
Mayaca fluviatilis		/	/	/	
Melaleuca quinquenervia					
Micranthemum glomeratum				/	
Micranthemum umbrosum					
Mikania scandens			/	/	
Mimosa pigra					
Myrica cerifera	/	/	/	/	
Magnolia grandiflora		/			

~~*Enter in SBIO as Ludwigia (unknown nativity) and note in comments that it was the hexapetala-grandiflora-uruguayensis complex~~

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: Date:

SPECIES					Collected? (√)	SPECIES					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.	D	D	D	D		Scirpus cubensis (Oxycaryon cubense)					
Nuphar sp.						Scirpus cyperinus					
Nymphaea mexicana						*Sesbania punicea					
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 elliottii						*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						Casuarina glauca					
*Potamogeton pectinatus (Stuckenia pectinatus)						~~Australian pine~~					MKL
Proserpinaca pectinata						Imperata cylindrica					
*Rhexia cubensis						Vigna luteola					
*Rhynchospora corniculata						Fuirena pumila?					Fem
*Rhynchospora inundata						Rhynchospora (Juncus = microcephala (control))					
Rhynochospora ~~nitens~~ scirpoides					Fem						Fem
Ricciocarpus natans						Nephrolepsis					
Sabal palmetto						~~grass~~ Is. indica					Pam
Sacciolepis striata											
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia											
Sagittaria latifolia											

LVI Map for LAKE WINNEMISSETT, WBID 2931