data entry 9/14/18 SEP
scanned 1/29/2019 SEP

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 78757 MACROPHYTE ID: 11057 LATITUDE: 30.02397
COUNTY: Wakulla STORET #: 22020090 LONGITUDE: -84.42161
DATE: 6/26/18 TIME: 1220 SAMPLING AGENCY: FDEP/AEQA
SITE NAME: Otter Lake WBID: 1165A
FIELD ID/NAME: Otter Ref LAKE SIZE: 138 acres RQ: 2018-06-25-17

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)
100%							

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) LDI: 1.17

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: 2016

STORMWATER INPUTS 18	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 18	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 18	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 see water QA form
Water Level ☑ Low ☑ Normal ☐ High A little low

Water Odors: ☑ Normal NKA
☐ Sewage ☐ Petroleum ☐ Other Anaerobic Sediment

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:	0.1	31.8	4.88	5.12	69.8	189	
Mid-Depth:	1.5	30.3	4.81	3.9	51.4	190	
Bottom:	2.7	27.9	5.14	0.42	6.0	197	

Meter ID: 154185 AEQAS new sonde

Clarity: ☑ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid
Color: ☐ Clear ☑ Tannic ☐ Green

SECCHI (M): 0.6 VOB ☐
Total Station Depth (M): 2.8

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	☑	☐	☐	☐

Additional Notes: Reference LVI

Weather Conditions: Sunny, 2 visitors from Cardno for LVI training - Brandon Wanner, John

SAMPLING TEAM: Wellendorf, Parek, Jackson **SIGNATURE:** Nyki Wellendorf **DATE:** 6/26/18

LIMS 2003336

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Otter Lake	County: Wakulla	Date: 6/26/2018
Analyst: Wellendurf Parker Jackson	Signature: Nicole Wellendurf	STORET: 22020090

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	1	4	7	10	Collected? (√)
Acer rubrum					
Alternanthera philoxeroides	1	1	1	1	
Andropogon sp.					
Azolla filiculoides (A. caroliniana)					
Baccharis sp.					
Bacopa caroliniana					
Bacopa monnieri					
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi					
Cabomba caroliniana					
Casuarina equisitifolia					
Centella asiatica					
Cephalanthus occidentalis	1	1	1	1	
Ceratophyllum demersum					
Chara sp.					
Cladium jamaicense					
Cliftonia monophylla					
Colocasia esculenta					
*Commelina					
Crinum americanum					
***Cyperus alternifolius** (C. involucratus)					
Cyperus articulatus					
Cyperus haspan					
*Cyperus lecontei					
*Cyperus polystachyos					
*Cyperus odoratus					
*Cyperus surinamensis					
Cyrilla racemiflora	1	1	1	1	
Decodon verticillatus		1			
Diodia virginiana walteri					
*Echinochloa ~~crus-galli~~ ? Need to collect	1	1			√ NV
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Egeria densa					
Eichhornia crassipes					
*Eleocharis baldwinii					
*Eleocharis ~~submersed~~ Vivipara	1	1		1	
Eleocharis cellulosa					
Eleocharis equisetoides					
Eleocharis interstincta					
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium					
*Fuirena					
Fuirena scirpoidea					
Gordonia lasianthus					

SPECIES	1	4	7	10	Collected? (√)
Habenaria repens			1		
Hydrilla verticillata					
Hydrocotyle sp.	1	1	1	1	
Hygrophila polysperma					
*Hypericum fasciculatum					
*Hypericum hypericoides					
*Hypericum myrtifolium					
Ilex ~~coccine~~ myrtifolia	1	1	1	1	
Ipomoea aquatica					
Ipomoea sagittata					
Itea virginica					
Juncus effusus					
*Juncus marginatus					
*Juncus megacephalus					
Juncus repens					
*Juncus scirpoides					
Lachnanthes caroliniana					
Leersia hexandra					
Landoltia punctata (Spirodela punctata)			1	1	
Lemna sp.	1	1	1	1	
Leucothoe racemosa (Eubotrys racemosa)					
Limnobium spongia					
Limnophila sessiliflora					
Liquidamber styraciflua					
*Ludwigia arcuata					
*Ludwigia leptocarpa					
*Ludwigia linearis					
*Ludwigia octovalvis					
***Ludwigia peruviana**					
*Ludwigia repens					
*Ludwigia sp. NO flowers			1		✓
Luziola fluitans (Hydrochloa carolinensis)					
Lyonia lucida					
Magnolia virginiana					
Mayaca fluviatilis					
Melaleuca quinquenervia					
Micranthemum glomeratum					
Micranthemum umbrosum					
Mikania scandens					
Mimosa pigra					
Myrica cerifera					
Carex sp. glaucescens	1				✓ AO

Section 4 - Typha & Sagittaria lancifolia both abundant

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: Otter Lake

Date: 6/26/2018

SPECIES	1	4	7	10	Collected? (√)
Myriophyllum aquaticum					
*Myriophyllum heterophyllum					
*Myriophyllum laxum					
*Myriophyllum pinnatum					
Myriophyllum spicatum					
*Najas filifolia					
*Najas guadalupensis		/		/	
*Najas minor					
Nelumbo lutea					
Nitella spp.					
Nuphar sp.	/	/	/	/	
Nymphaea odorata					
Nymphoides aquatica					
Nyssa sylvatica var. biflora					
Orontium aquaticum					
Osmunda cinnamomea					
Osmunda regalis	/				
Panicum hemitomon					
Panicum repens					
Paspalidium geminatum					
*Paspalum repens					
Paspalum urvillei					
Peltandra sp.					
Persea sp.					
Pennisetum purpureum					
Phragmites australis					
Pinus elliottii					
Pistia stratioides					
Pluchea sp.					
*Polygonum glabrum (densiflorum)					
*Polygonum hydropiperoides					
*Polygonum punctatum	/	/	/	/	
*Polygonum					
Pontederia cordata	/	/	/	/	
*Potamogeton diversifolius					
*Potamogeton illinoensis					
*Potamogeton pusillus					
*Potamogeton pectinatus (Stuckenia pectinatus)					
Proserpinaca pectinata					
*Rhexia					
*Rhynchospora corniculata					
*Rhynchospora inundata					
Rhynochospora tracyi					
Ricciocarpus natans					
Sabal palmetto					
Sacciolepis striata	/	/	/	/	
*Sagittaria filiformis					
*Sagittaria graminea					
*Sagittaria isoetiformis					
Sagittaria lancifolia	/	/	C	C	
Sagittaria latifolia					

SPECIES	1	4	7	10	Collected? (√)
Salix caroliniana					
Salvinia minima	/	/	/	/	
Sambucus canadensis					
Sapium sebiferum					
Saururus cernuus					
Schinus terebinthifolius					
*Schoenoplectus californicus					
*Schoenoplectus pungens					
*Schoenoplectus tabernaemontani (Scirpus validus)					
Scirpus cubensis (Oxycaryon cubense)					
Scirpus cyperinus					
*Sesbania					
Solidago sp.					
Sparganium americanum					
Spartina bakeri	/	/	/	/	
Spirodela polyrhiza					
Taxodium sp.	D	C	C	C	
Thalia geniculata					
Thelypteris palustris					
Triadenum virginicum					
Typha sp.	/	C	/	/	
Urochloa mutica (Brachiaria mutica)					
*Utricularia gibba (U. biflora)					
*Utricularia floridana					
*Utricularia foliosa					
*Utricularia inflata only little bit				/	
*Utricularia purpurea					
*Utricularia cornuta					
*Utricularia radiata					
Vallisneria americana					
*Websteria confervoides					
Wedelia trilobata (Sphagneticola trilobata)					
Wolffiella spp.					
Woodwardia virginica					
Xyris sp.					
Zizania aquatica					
Zizaniopsis milacea					

Yes Typha in 7. (NKw)

BLAB Water Field Form 031306.doc

SITE NAME: Otter Lake Center DATE: 6/26/18 TIME 1220 (military) (EST) CST DEPTH^: 0.1 ft (m) FIELD ID: _____

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
Sarah Parker	✓			✓	✓
Jay Jackson			✓		
NIA Wellendorf		✓			

SAMPLING EQUIPMENT

☑ Sample Container ☐ Tubing type: _____
☐ Pole ☐ Other _____
☐ Pump ID#: _____ ☐ Other _____

WATER QUALITY MEASUREMENTS

Instrument ID: 154185

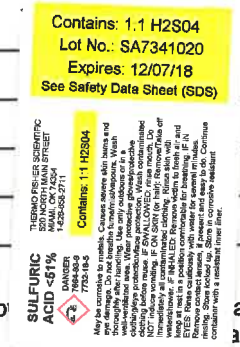
COLLECTION MODE

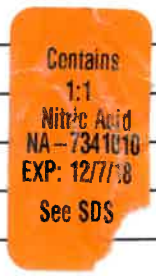
☐ Wading ☐ Diving ☐ From Shore ☐ Other _____

Via Boat: ☐ Canoe ☐ Electric Motor ☑ Gasoline Motor

Parameter Suite	Parameter(s)/Method	Matrix Code*	Preservation**	Preservative Lot #	pH Check	# Bottles ***
Preserved Nutrients	☑TKN ☑TP ☑NOx ☑NH3 ☐TOC ☐Total N ☐Other:	S W	☑Ice ☑H_2SO_4	SA 7341020 exp 12/18	☑<2	1
Filtered Nutrients	☑oP ☐Other:	S W	☑Ice ☑.45 um Filter			1
Unpreserved Nutrients	☐NO_2 ☐NO_3 ☐SO4 ☐Other:	W	☐ Ice			
Physical/Aggregate Properties	☐TDS ☐TSS ☐TS ☑Turbidity ☑Alk ☐Color ☐Other:	S W	☑ Ice			1
Chlorophyll	☑CHL-PPTN-W	S W	☑Ice			1
BOD	☐BOD-INHB ☐BOD-UNIN	W	☐ Ice			
Microbiology	MF: ☐ E coli ☐ T Coli ☐ F Coli ☐ Entero ☐ F Strep	W	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC ☐ MI-FW-QLBR ☐ MI-FW-QNNC ☐ MI-MN-QNNC	W	☐Formalin			
Phytoplankton	☑PKD-QN-C ☐DTY-QN-C	S W	☐Lugol's ICE			1
Periphyton	☐PRN-QL-C ☐DTM-QL-C ☐PRN-QN-C ☐DTM-QN-C	W	☐Formalin			
AGP	☐AA-AGP ☐AA-LIM-NUT	W	☐ Ice			
Metals	☑W-ICP ☐W-FIAS ☐W-ICPMS ☐W-ICP-Tr	S W	☑HNO_3	NA 7341010	☑<2	1
Filtered Metals	☐W-ICP-F ☐W-FIAS-F ☐W-ICPMS-F ☐W-ICP-Tr-F	W	☐HNO_3 ☐.45 um Filter	exp 12/18	☐<2	
Mercury	☐W-HG-AF	W				
BaseNeutral / Acid Extractable	☐W-BNA ☐W-AE ☐W-BN ☐W-PAH	W	☐ Ice			
	☐W-FL-PRO ☐W ☐Other: _____	W	☐ Ice ☐ H_2SO_4		☐<2	
Pesticides	☐W-PEST-CL ☐W-PCB ☐W PEST-NP ☐W-PSCL-PCB	W	☐ Ice			
	☐W-NP-AA-SF ☐W-PC-AA-SF ☐W-PSHRB-NP ☐W-SLFN-UREA ☐ W-SULFN-LC ☐Other: _____	W	☐ Ice			
	☐W-ACIDHERB	W	☐ Ice ☐ H_2SO_4			
	☐ W-CARB	W	☐ Ice ☐MCAA			
Purgeables	☐ W-VOC-MS	W	☐ Ice			
	☐W-VOC-MS-A	W	☐ Ice ☐ HCl			
Bioassay	Specify Test: _____	W	☐ Ice			
OTHER		W	☐ Other: _____			

Notes: _____





Use one line for each set of sample (as supplied b ainers. Use separate sheet for field or laboratory duplicate or blank or ater depth

Enter "S" for surface if collected at a depth less than or equal to 1 foot

Matrix Codes (Insert prefix): **SW** = Surface Water **GW** = Groundwater **DW** = Drinking Water **WW** = Wastewater **O** = Other: _____

***PRESERVATIVES: 1 ml added unless otherwise noted**

****Enter number of containers supplied by the laboratory for the test (e.g., 3 for volatile organics, etc.)**

DEP Bureau of Laboratories Water Sample Collection Record

(Use with FDEP SOP-001/01 Form FD 9000-3 Physical/Chemical Characterization Field Sheet)