

RR-2016-7-18-59

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: <u>Lake Otter</u>		County: <u>Wakulla</u>		Date: <u>7/21/16</u>							
Analyst: <u>O'Neal, Spencer, Panek</u>		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 <u>2, 5, 8, 11</u> 3, 6, 9, 12							
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
<i>Acer rubrum</i>						<i>Habenaria repens</i>					
<i>Alternanthera philoxeroides</i>						<i>Hydrilla verticillata</i>					
<i>Andropogon</i> sp.						<i>Hydrocotyle</i> sp.		✓	✓	✓	
<i>Azolla filiculoides</i> (A. caroliniana)						<i>Hygrophila polysperma</i>					
<i>Baccharis</i> sp.						* <i>Hypericum fasciculatum</i>					
<i>Bacopa caroliniana</i>						* <i>Hypericum hypericoides</i>					
<i>Bacopa monnieri</i>						* <i>Hypericum myrtifolium</i>					
<i>Bidens laevis</i>						<i>Ilex cassine myrtifolia</i>	✓		✓		
<i>Bidens mitis</i>						<i>Ipomoea aquatica</i> <i>Ilex cassia</i>					✓
<i>Blechnum serrulatum</i>						<i>Ipomoea sagittata</i>					
<i>Boehmeria cylindrica</i>						<i>Itea virginica</i>					
<i>Brasenia schreberi</i>						<i>Juncus effusus</i>					
<i>Cabomba caroliniana</i>						* <i>Juncus marginatus</i>					
<i>Casuarina equisetifolia</i>						* <i>Juncus megacephalus</i>					
<i>Centella asiatica</i>						<i>Juncus repens</i>					
<i>Cephalanthus occidentalis</i>	1	1	1	1		* <i>Juncus scirpoides</i>					
<i>Ceratophyllum demersum</i>	1	1	1	1		<i>Lachnanthes caroliniana</i>					
<i>Chara</i> sp.						<i>Leersia hexandra</i>					
<i>Cladium jamaicense</i>			1			<i>Landoltia punctata</i> (Spirodela punctata)					
<i>Cliftonia monophylla</i>						<i>Lemna</i> sp.	✓	✓	✓	1	
<i>Colocasia esculenta</i>						<i>Leucothoe racemosa</i> (Eubotrys racemosa)					
* <i>Commelina</i>						<i>Limnium spongia</i>					
<i>Crinum americanum</i>						<i>Limnophila sessiliflora</i>					
* <i>Cyperus alternifolius</i> (C. involucratus)						<i>Liquidambar styraciflua</i>					
<i>Cyperus articulatus</i>						* <i>Ludwigia arcuata</i>					
<i>Cyperus haspan</i>						* <i>Ludwigia leptocarpa</i>					
* <i>Cyperus lecontei</i>						* <i>Ludwigia linearis</i>					
* <i>Cyperus polystachyos</i>						* <i>Ludwigia octovalvis</i>					
* <i>Cyperus odoratus</i>						* <i>Ludwigia peruviana</i>					
* <i>Cyperus surinamensis</i>						* <i>Ludwigia repens</i>					
<i>Cyrtilla racemiflora</i>	1	1	1	1		* <i>Ludwigia lept/octovalvis</i>	✓	✓	✓		✓
<i>Decodon verticillatus</i>						<i>Luziola fluitans</i> (Hydrochloa carolinensis)					
<i>Diodia virginiana</i>						<i>Lyonia lucida</i>					
* <i>Echinochloa crus-galli</i>						<i>Magnolia virginiana</i>					
* <i>Echinochloa muricatum</i>						<i>Mayaca fluviatilis</i>					
<i>Echinochloa walteri</i>	1					<i>Melaleuca quinquenervia</i>					
<i>Eclipta prostrata</i> (E. alba)						<i>Micranthemum glomeratum</i>					
<i>Egeria densa</i>						<i>Micranthemum umbrosum</i>					
<i>Eichhornia crassipes</i>						<i>Mikania scandens</i>					✓
* <i>Eleocharis baldwinii</i> mats	1	1	1	1		<i>Mimosa pigra</i> AO					
* <i>Eleocharis submersa</i> vrp.		1	1	1		<i>Myrica cerifera</i>					✓
<i>Eleocharis cellulosa</i>						<i>Carex</i> sp. verrucosa	✓				✓
<i>Eleocharis equisetoides</i>						<i>Cyperus</i> soft stem					✓
<i>Eleocharis interstincta</i>						<i>haspan</i> strongly triangular					✓
* <i>Eriocaulon compressum</i>						AO					
* <i>Eriocaulon decangulare</i>						lots of displays					
<i>Eupatorium capillifolium</i>											
<i>Fuirena</i>											
<i>Fuirena scirpoidea</i>											
<i>Gordonia lasianthus</i>											

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site:						Date:					
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
Myriophyllum aquaticum						Salix caroliniana					
*Myriophyllum heterophyllum						Salvinia minima	1	1	1	1	
*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.	1	1	1	1		Scirpus cyperinus					
Nymphaea odorata						*Sesbania					
Nymphoides aquatica						Solidago sp.					
Nyssa sylvatica var. biflora						Sparganium americanum					
Orontium aquaticum						Spartina bakeri		1			
Osmunda cinnamomea						Spirodela polyrhiza					
Osmunda regalis	1	1	1	1		Taxodium sp.	1	1	1	1	
Panicum hemitomon <i>SAG?</i>	1	1	1	1		Thalia geniculata					
Panicum repens						Thelypteris palustris					
Paspalidium geminatum						Triadenum virginicum	1	1	1	1	
*Paspalum repens						Typha sp.		1	1	1	
Paspalum urvillei						Urochloa mutica (Brachiaria mutica)					
Peltandra sp.						*Utricularia gibba (U. biflora)	1				✓ AO
Persea sp.						*Utricularia floridana <i>radiata</i>					✓ AO
Pennisetum purpureum						*Utricularia foliosa					
Phragmites australis						*Utricularia inflata					
Pinus elliotii						*Utricularia purpurea					
Pistia stratioides						*Utricularia comuta					
Pluchea sp.						*Utricularia radiata					
*Polygonum glabrum (densiflorum)						Vallisneria americana					
*Polygonum hydropiperoides						*Websteria confervoides					
*Polygonum punctatum <i>AO</i>					✓	Wedelia trilobata (Sphagneticola trilobata)					
*Polygonum <i>sp. punctatum</i>	1	1	1	1	✓	Wolffiella spp.					
Pontederia cordata	1	1	1	1		Woodwardia virginica	✓	✓			
*Potamogeton diversifolius						Xyris sp.					
*Potamogeton illinoensis						Zizania aquatica					
*Potamogeton pusillus						Zizaniopsis milacea					
*Potamogeton pectinatus (Stuckenia pectinatus)						<i>Rhynchospora alians</i>		✓		✓	AO
Proserpinaca pectinata											
*Rhexia											
*Rhynchospora comiculata <i>5 AO</i>			1	1	✓						
*Rhynchospora inundata											
Rhynchospora tracyi											
Ricciocarpus natans											
Sabal palmetto											
Sacciolepis striata	1	1	1	1							
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia	1	1	1	1							
Sagittaria latifolia											

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: Lake Otter MACROPHYTE ID: _____ LATITUDE: 30.02397
 COUNTY: Wakulla STORET #: 22020090 LONGITUDE: -84.42161
 DATE: 7/21/2016 TIME: 12:15 SAMPLING AGENCY: FDEP
 SITE NAME: Lake Otter WBID: 1165A
 FIELD ID/NAME: Otter Ref LAKE SIZE: Large lake RQ: 2016-07-18-59

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) ☒						LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) LDI: <u>1.36</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:			
STORMWATER INPUTS <u>19</u>		Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation 20 <u>19</u> 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		Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place 5 4 3 2 1	
LAKESIDE ALTERATIONS <u>19</u>		Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected) 20 <u>19</u> 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		Highly developed or disturbed (>70% of lakeside affected) 5 4 3 2 1	
BUFFER ZONE <u>20</u>		Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer 20 <u>19</u> 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 6168040</u> Exp. Date: <u>6/16/17</u> Alkalinity Sample Taken? ☒ Yes ☐ No Water Level ☐ Low ☒ Normal ☐ High				Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other _____			
Meter Readings: Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat. (%) Cond. (UMHO/CM) Salinity (PPT) Top: <u>0.1</u> <u>32.8</u> <u>4.87</u> <u>4.92</u> <u>68.1</u> <u>35.1</u> Mid-Depth: _____ Bottom: _____				Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____			
Meter ID: <u>1483 (check this AFAA meter)</u>				Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid Color: ☐ Clear ☒ Tannic ☐ Green <u>very tannic</u>			
SECCHI (M) <u>0.5</u>				Total Station Depth (M) <u>2.6</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 ☐ Other (Specify): _____ ☐ Anaerobic			
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Biological Communities: LVI Conducted? ☒ Yes ☐ No Phytoplankton Sample Taken? ☒ Yes ☐ No Sample Preserved? <u>Lugols</u> ☒ Yes ☐ No Lot #: <u>73367</u> 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: <u>tannic, very little submersed multiple nesting ospreys (~5 nests)</u>			
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Weather Conditions: <u>hot, sunny, humid</u>				SAMPLING TEAM: <u>O'Neal, Spencer, Panek</u>				SIGNATURE: <u>[Signature]</u>				DATE: <u>7/21/16</u>			
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SITE NAME: Lake Otter DATE: 7/21/16 TIME: 1215 (military) EST CST DEPTH: 1 ft (m) FIELD ID: _____

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
B. Spencer			X	X	
A. O'Neal	X				
S. Panek					X

SAMPLING EQUIPMENT	
☒ Sample Container	☐ Tubing type: _____
☐ Pole	☐ Other: _____
☐ Pump ID#: _____	☐ Other: _____
WATER QUALITY MEASUREMENTS	
Instrument ID: _____	
COLLECTION MODE	
☐ Wading	☐ Via Boat
☐ Diving	☐ Canoe
☐ From Shore	☐ Electric Motor
☐ Other: _____	☒ Gasoline Motor
whaler	

Parameter Suite	Parameter(s)/Method	Matrix Code*	Preservation**	Preservative Lot #	pH Check	# Bottles ***
Preserved Nutrients	☒ TN ☒ TP ☒ NOx ☒ NH3 ☐ TOC ☐ Total N ☐ Other: _____	S W	☒ Ice ☒ H ₂ SO ₄	SA-6168040	☒ <2	1
Filtered Nutrients	☐ OP ☐ Other: _____	W	☐ Ice ☐ .45 um Filter			
Unpreserved Nutrients	☐ NO ₂ ☐ NO ₃ ☐ SO ₄ ☐ Other: _____	W	☐ Ice			
Physical/Aggregate Properties	☐ TDS ☐ TSS ☐ TS ☒ Turbidity ☒ Alk ☒ Color ☐ Other: _____	S W	☒ Ice			
Chlorophyll	☒ CHL-PPTN-W	S W	☒ Ice			
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			
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-5259030	☒ <2	1
Filtered Metals	☐ W-ICP-F ☐ W-FIAS-F ☐ W-ICPMS-F ☐ W-ICP-Tr-F	W	☐ HNO ₃ ☐ .45 um Filter			
Mercury	☐ W-HG-AF	W				
Base/Neutral / Acid Extractable	☐ W-BNA ☐ W-AE ☐ W-BN ☐ W-PAH ☐ W-FL-PRO ☐ W ☐ Other: _____	W	☐ Ice			
Pesticides	☐ W-PEST-CL ☐ W-PCB ☐ W-PEST-NP ☐ W-PSCL-PCB ☐ W-NP-AA-SF ☐ W-PC-AA-SF ☐ W-PSHRB-NP ☐ W-SLFN-UREA ☐ W-SULFN-LC ☐ Other: _____ ☐ W-ACIDHERB ☐ W-CARB	W	☐ Ice ☐ H ₂ SO ₄		☐ <2	
Purgeables	☐ W-VOC-MS ☐ W-VOC-MS-A	W	☐ Ice ☐ MCAA			
Bioassay	Specify Test: _____	W	☐ Ice ☐ HCl			
OTHER		W	☐ Other: _____			

 Notes: Hot 1st ref lake
sampling event
no filter for doing ortho-P

 Contains
 1:1
 Sulfuric Acid
 SA-6168040
 EXP: 06/16/17
 Warning!
 See SDS

 Contains
 1:1
 Nitric Acid
 NA-5259030
 EXP: 09/16/16
 Warning!
 See MSDS

Use one line for each set of sample (as supplied by the laboratory) containers. Use separate sheet for field or laboratory duplicate or blank or different water 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)

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Customer: BSSP

Project ID: SCIREF

Requester: Sarah Panek

Collected By: Blake Spencer, Ashley O'Neal

Field Report Prepared By: Ashley O'Neal (55071)

Sampling Agency: FDEP

Location	Field ID	STORET #	Latitude	Longitude	Comp	Grab	Collection (comp begin or grab)	Date	Time	Eastern	Central	Composite end	Date	Time	Bottle Group(s)
Otter Lake					☒	☐	Matrix (type, e.g., Salt, Fresh, etc)			☒	☐	mg/L		Total Res. Chlorine (mg/L)	
22020090					Temp (C)		pH	4.87				ft		Sp. Conductance (umho/cm)	
30.02397					Salinity (ppt)		Comments								
					☒	☐	Matrix (type, e.g., Salt, Fresh, etc)			☒	☐	mg/L		Total Res. Chlorine (mg/L)	
					Temp (C)		pH					ft		Sp. Conductance (umho/cm)	
					Salinity (ppt)		Comments								
					☐	☐	Matrix (type, e.g., Salt, Fresh, etc)			☐	☐	mg/L		Total Res. Chlorine (mg/L)	
					Temp (C)		pH					ft		Sp. Conductance (umho/cm)	
					Salinity (ppt)		Comments								
					☐	☐	Matrix (type, e.g., Salt, Fresh, etc)			☐	☐	mg/L		Total Res. Chlorine (mg/L)	
					Temp (C)		pH					ft		Sp. Conductance (umho/cm)	
					Salinity (ppt)		Comments								
					☐	☐	Matrix (type, e.g., Salt, Fresh, etc)			☐	☐	mg/L		Total Res. Chlorine (mg/L)	
					Temp (C)		pH					ft		Sp. Conductance (umho/cm)	
					Salinity (ppt)		Comments								
					☐	☐	Matrix (type, e.g., Salt, Fresh, etc)			☐	☐	mg/L		Total Res. Chlorine (mg/L)	
					Temp (C)		pH					ft		Sp. Conductance (umho/cm)	
					Salinity (ppt)		Comments								
					☐	☐	Matrix (type, e.g., Salt, Fresh, etc)			☐	☐	mg/L		Total Res. Chlorine (mg/L)	
					Temp (C)		pH					ft		Sp. Conductance (umho/cm)	
					Salinity (ppt)		Comments								

Relinquished By: Ashley O'Neal	Date/Time: 7/21/16 4pm	Shipping Method: hand delivery	Number of Coolers Shipped:	Received By: SK	Date/Time: 7-21-16/4:00
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