

Scan/Save Field Sheets _____ Migrate Data to WIN: _____ Verify Data In WIN: _____

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: <u>Lake Estella</u>		County: <u>Putnam</u>		Date: <u>8-8-2019</u>							
Analyst: <u>J. Parrish / A. Kalmbacher</u>		Signature: <u>[Signature]</u>		STORET: <u>G2NE1203</u>							
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? (✓)
Acer rubrum	P	P		P		Habenaria repens					
Alternanthera philoxeroides	P	P				Hydrilla verticillata					
Andropogon sp.						Hydrocotyle sp.	P	P	P	P	
Azolla filiculoides (A. caroliniana)						Hygrophila polysperma					
Baccharis sp.						*Hypericum fasciculatum		P			
Bacopa caroliniana						*Hypericum hypericoides					
Bacopa monnieri						*Hypericum myrtifolium					
Bidens laevis						Ilex cassine					
Bidens mitis						Ipomoea aquatica					
Blechnum serrulatum						Ipomoea sagittata					
Boehmeria cylindrica						Itea virginica					
Brasenia schreberi		P	P	C		Juncus effusus					
Cabomba caroliniana						*Juncus marginatus					
Casuarina equisetifolia						*Juncus megacephalus					
Centella asiatica						Juncus repens					
Cephalanthus occidentalis		P	P	P		*Juncus scirpoides					
Ceratophyllum demersum						Lachnanthes caroliniana			P		
Chara sp.						Leersia hexandra		P	P	P	
Cladium jamaicense						Landoltia punctata (Spirodela punctata)					
Cliftonia monophylla						Lemna sp.					
Colocasia esculenta						Leucothoe racemosa (Eubotrys racemosa)					
*Commelina						Limnium spongia					
Crinum americanum						Limnophila sessiliflora					
*Cyperus alternifolius (C. involucratus)						Liquidambar styraciflua	P				
Cyperus articulatus						*Ludwigia arcuata					
Cyperus haspan						*Ludwigia leptocarpa					
*Cyperus lecontei						*Ludwigia linearis					
*Cyperus polystachyos						*Ludwigia octovalvis	P				
*Cyperus odoratus	P		P			*Ludwigia peruviana	P	P		P	
*Cyperus surinamensis						*Ludwigia repens					
Cyrilla racemiflora						*Ludwigia suffruticosa	P	P	P	P	
Decodon verticillatus						Luziola fluitans (Hydrochloa carolinensis)	P				
Diodia virginiana						Lyonia lucida					
*Echinochloa crus-galli						Magnolia virginiana				P	
*Echinochloa muricatum						Mayaca fluviatilis					
Echinochloa walteri						Melaleuca quinquenervia					
Eclipta prostrata (E. alba)						Micranthemum glomeratum					
Egeria densa						Micranthemum umbrosum					
Eichhornia crassipes			P			Mikania scandens	P	P			
*Eleocharis baldwinii						Mimosa pigra				P	
*Eleocharis elongatus		P	P	P		Myrica cerifera					
Eleocharis cellulosa											
Eleocharis equisetoides						Oldenlandia uniflora	P				
Eleocharis interstincta											
*Eriocaulon compressum											
*Eriocaulon decangulare											
Eupatorium capillifolium	P			P							
*Fuirena											
Fuirena scirpoidea	P	P	P	P							
Gordonia lasianthus			P	P							

[illegible]

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYTE ID: _____ LATITUDE: _____
 COUNTY: Potnam STORET #: G2NE1203 LONGITUDE: _____
 DATE: 8-8-2019 TIME: 1040 SAMPLING AGENCY: _____
 SITE NAME: Lake Estrella WBID: 2892C
 FIELD ID/NAME: _____ LAKE SIZE: _____ RQ: 2019-07-22-09

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:											
Local Watershed Erosion (select one) : ☐ None ☐ Slight ☐ Moderate ☐ Heavy										Artificially Impounded ☐ Yes ☒ No					Land Use Source & Year:						
Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☐ Moderate ☐ Heavy																					
STORMWATER INPUTS <u>10</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 <u>10</u> 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>10</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					Highly developed or disturbed (>70% of lakeside affected) 5 4 3 2 1				
BUFFER ZONE <u>13</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 # _____ Exp. Date: _____ 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>0.3</u> <u>29.7</u> <u>6.36</u> <u>6.3</u> <u>83</u> <u>90.5</u> <u>0.04</u> Mid-Depth: _____ Bottom: <u>5.1</u>										Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____									
Meter ID: <u>YSI Pro DSS Stich</u>										Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid									
Sediment Type: (may check more than one) ☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Vegetated ☒ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____										Color: ☒ Clear ☐ Tannic ☐ Green									
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 ☐ ☐ ☐ ☒									
Sediment Odors: ☒ Normal ☐ Other (Specify): _____ ☐ Anaerobic										SECCHI (M) <u>2.0</u> Total Station Depth (M) <u>5.1</u> VOB ☐									
Weather Conditions: <u>Hot, overcast, humid</u>																			
SAMPLING TEAM: <u>J. Parrish / A. Kalmbacher</u>										SIGNATURE: <u>[Signature]</u>									
DATE: <u>8-8-2019</u>																			

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

STORET STATION NUMBER: G2N21203	DATE (M/D/Y) 8-8-2019	LAKE NAME Lake Estella		FIELD ID / NAME:	
ECO-REGION:	COUNTY: Putnam	SAMPLING LOCATION/DESCRIPTION:		LAKE SIZE:	
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 ☐	Impounded, hydrology of system artificially controlled ☐	
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) ☐	Visibility extremely reduced due to high color ☐	
	Optimal	Suboptimal	Marginal	Poor	
Secchi 13	Secchi >3 m Or VOB 20 19 18 17 16	3 2.6 2.2 1.8 1.4 15 14 13 12 11	1.0 0.9 0.8 0.7 0.6 10 9 8 7 6	0.5 0.4 0.3 0.2 0.1 5 4 3 2 1	
Vegetation Quality 15	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa 20 19 18 17 16	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants 15 14 13 12 11	Large masses (21%-40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats 10 9 8 7 6	Lake choked (>40%) with nuisance macrophytes (duckweed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed) 5 4 3 2 1	
Stormwater Inputs 10	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	Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place 5 4 3 2 1	
Bottom Substrate Quality 17	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present 20 19 18 17 16	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present 15 14 13 12 11	Moderate layer of CPOM/mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom 10 9 8 7 6	Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom 5 4 3 2 1	
Lakeside Adverse Human Alterations 10	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%) 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	Highly developed or disturbed (>70% of lakeside affected) 5 4 3 2 1	
Upland Buffer Zone 13	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	
Adverse Watershed Land Use 14	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 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1				
TOTAL SCORE 92	COMMENTS:				
ANALYSIS DATE: 8-8-2019	ANALYST: <i>J. Parrish</i>		SIGNATURE: <i>J. Parrish</i>		