

Site Name Z1-LL-13017 (Pate Lake)

Date: 07/31/2019

Field ID Z1LL13017 Storet

Project: Ambient Status Monitoring

Visit ID

RQ: 2019-04-29-13

VPDB ID

LIMS ID:

HA ID

WBID: 239A

☒ LVI

☐ RPS/LVS Only

☐ Sample Site Created in SBIO

☐ Phys/Chem entered in SBIO

☐ HA entered in SBIO Initial

☐ Date and Initial QA:

☐ LVI entered in SBIO Initial

☐ Date and Initial QA:

☐ < 2 m² vegetation

☐ Plants getting verified

Date submitted:

☐ Plants verified

Date returned:

☐ Macro authorized in SBIO

☐ Date and Initial:

☐ Macro score:

☐ If SMP, scanned into database

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ MACROPHYTE ID: _____ LATITUDE: N 30.69484
 COUNTY: Washington (Vernon) STORET #: _____ LONGITUDE: W -85.75195
 DATE: 07/31/2019 TIME: 11:24 SAMPLING AGENCY: FL DEP - NWROC
 SITE NAME: Z1-LL-13017 (Pate Lake) WBID: 239A
 FIELD ID/NAME: Z1LL13017 LAKE SIZE: 374 RQ: 2019-04-29-13

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>1.23</u>				
Local Watershed Erosion (select one) : ☒ None ☐ Slight ☐ Moderate ☐ Heavy					Artificially Impounded ☐ Yes ☐ No				
Local Watershed NPS Pollution : ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy					Land Use Source & Year:				
STORMWATER INPUTS <u>19</u>		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 <u>19</u>		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 <u>19</u>		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 _____				
Meter <u>W-24</u> Readings: Top: <u>0.3</u> <u>31.8</u> <u>4.11</u> <u>7.06</u> <u>95.8</u> <u>20.2</u> <u>0.01</u> Mid-Depth: <u>1.7</u> <u>30.2</u> <u>4.27</u> <u>6.12</u> <u>81.0</u> <u>20.2</u> <u>0.01</u> Bottom: <u>2.7</u> <u>29.8</u> <u>4.28</u> <u>5.06</u> <u>66.8</u> <u>20.4</u> <u>0.01</u>					Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____				
Meter ID: _____					Clarity: ☐ Clear ☒ Slightly Turbid ☐ Opaque ☐ Turbid				
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 ☒ ☐ ☐ ☐				
Weather Conditions: <u>Sunny Hot Little recent rain</u>					Additional Notes: <u>Water has come down about 1.5' recently. Rivers are low.</u>				
SAMPLING TEAM: <u>Frank Butera, Myranda Clark</u>					SIGNATURE: <u>Frank Butera</u> DATE: <u>07/31/2019</u>				

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
Lake Habitat Assessment Field Sheet

STORET STATION NUMBER:	DATE (M/D/Y) 07/31/2019	LAKE NAME Z1-LL-13017. Pate Lake		FIELD ID / NAME: Z1LL13017
ECO-REGION: WBID 239A	COUNTY: Washington	SAMPLING LOCATION/DESCRIPTION: Pate Lake		LAKE SIZE: 374
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 11	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 14	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 <i>Algae</i> 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 19	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 19	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 19	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 19	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18m 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 17	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	118	COMMENTS: <i>Algae smothering many/most plants in water.</i>
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ANALYSIS DATE: 07/31/2019	ANALYST: Frank Butera	SIGNATURE: <i>Frank Butera</i>
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FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

[illegible]

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Z1-LL-13017 (Pate Lake)				County: Washington (Vernon)				Date: 07/31/2019			
Analyst: F. Butera				Signature: <i>[Signature]</i>				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			
SBIO ID _____	3	6	9	12	Collect ed? (✓)	Macro ID _____	3	6	9	12	Collect ed? (✓)
SPECIES						SPECIES					
Acer rubrum		1	1	1		Habenaria repens					
Alternanthera philoxeroides						Hydrilla verticillata					
Andropogon sp.						Hydrocotyle sp.					
Azolla filiculoides (A. caroliniana)						Hygrophila polysperma					
Baccharis sp.						*Hypericum fasciculatum					
Bacopa caroliniana						*Hypericum hypericoides					
Bacopa monnieri						*Hypericum myrtifolium					
Bidens laevis						Ilex cassine					
Bidens mitis						Ipomoea aquatica					
Blechnum serrulatum						Ipomoea sagittata					
Boehmeria cylindrica			1			Itea virginica	1	1	1	1	
Brasenia schreberi						Juncus effusus					
Cabomba caroliniana						*Juncus marginatus					
Casuarina equisetifolia						*Juncus megacephalus					
Centella asiatica						Juncus repens					
Cephalanthus occidentalis	1	1	1	1		*Juncus scirpoides					
Ceratophyllum demersum						Lachnanthes caroliniana					
Chara sp.						Leersia hexandra					
Cladium jamaicense						Landoltia punctata (Spiro. puncta)					
Cliftonia monophylla						Lemna sp.					
Colocasia esculenta						Leucothoe racemosa (E. racemosa)					
*Commelina						Limnium spongia					
Crinum americanum						Limnophila sessiliflora					
* Cyperus alternifolius (C. involucratus)						Liquidambar styraciflua					
Cyperus articulatus						*Ludwigia arcuata					
Cyperus haspan						*Ludwigia leptocarpa					
*Cyperus lecontei						*Ludwigia linearis					
*Cyperus polystachyos						*Ludwigia octovalvis					
*Cyperus odoratus						* Ludwigia peruviana					
*Cyperus surinamensis						*Ludwigia repens					
Cyrilla racemiflora	1	1	1	1		*Ludwigia					
Decodon verticillatus						Luziola fluitans (H. carolinensis)					
Diodia virginiana						Lyonia lucida					
*Echinochloa crus-galli						Magnolia virginiana	1			1	
*Echinochloa muricatum						Mayaca fluviatilis					
Echinochloa walteri						Melaleuca quinquenervia					
Eclipta prostrata (E. alba)						Micranthemum glomeratum					
Egeria densa						Micranthemum umbrosum					
Eichhornia crassipes						Mikania scandens					
*Eleocharis baldwinii						Mimosa pigra					
*Eleocharis						Myrica cerifera					
Eleocharis cellulosa						<i>[Handwritten: Eleocharis]</i>			1		
Eleocharis equisetoides											
Eleocharis interstincta											
*Eriocaulon compressum											
*Eriocaulon decangulare											
Eupatorium capillifolium											
*Fuirena											
Fuirena scirpoidea											
Gordonia lasianthus						<i>[Handwritten: Green Algae]</i>	1	1	1	1	

DEP-SOP-001/01
FS 7000 General Biological Community Sampling

Form FD 9000-2: COMPOSITE LAKE SAMPLING SHEET (< 1000 ACRES)

Date: 07/31/2019		Name of Lake: Z1-LL-13017 Pate Lake		Gear used: <u>PONAR</u> <u>EKMAN</u> <u>OTHER</u>	
Comments:					
Drop #	Depth (m)	Sediment Type (circle all that apply)	Drop #	Depth (m)	Sediment Type (circle all that apply)
1		sand, silt/clay, CPOM, muck, SAV	7		sand, silt/clay, CPOM, muck, SAV
2		sand, silt/clay, CPOM, muck, SAV	8		sand, silt/clay, CPOM, muck, SAV
3		sand, silt/clay, CPOM, muck, SAV	9		sand, silt/clay, CPOM, muck, SAV
4		sand, silt/clay, CPOM, muck, SAV	10		sand, silt/clay, CPOM, muck, SAV
5		sand, silt/clay, CPOM, muck, SAV	11	3.2	sand, silt/clay, CPOM, muck, SAV
6		sand, silt/clay, CPOM, muck, SAV	12		sand, silt/clay, CPOM, muck, SAV

CPOM = coarse particulate organic matter; SAV = submerged aquatic vegetation

Storet 3
WBID 239A

Field ID Z1LL13017 Project. Ambient Status Monitoring

SBIO ID:

Paste map here and show location of each dredge drop and where water chemistry parameters were collected.

Revision Date: February 1, 2004

Photo Log

Storet TVB D

Station Name: Z1-LL-13017. Pate Lake

Date: 07/31/2019

Samplers. F. Butera, M. Clark

- 1 Z1LL13017-07-29-2019-North
- 2 Station-East
- 3 Station-~~West~~^(K) South
- 4 Station-West
- 5 Z15L13017-12-Saccioterns
- 6 Seet-12-Saccioterns-2
- 7 Seet. ~~12~~³ Shoreline Cypress
- 8 Seet. ~~8~~⁹ Shoreline
- 9 Seet. ~~8~~⁹ Saccioterns-~~2~~
- 10 Seet 9 - ~~Shoreline~~
- 11 Seet. 9 - Pop-Up Boat
- 12 _____
- 13 _____
- 14 _____
- 15 _____
- 16 _____
- 17 _____

Notes.

Z1-LL-13017. Pate Lake.
30.69484 x -85.75195
Storet. TBD WBID 239A
374 Acres. Vernon, Washington Co.

