



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PLAN FIELD SHEET

January 2020

Meter Passed End

of Day CCV

Yes / No

WIN Station Name: Crescent Lake Date: 8/19/2021
WIN/Field ID: G5NW0159 WBID: 697A ENR: Latitude: 30.4567
County: Escambia Org ID: 21FLPNS Longitude: -87.2731
Receiving Body of Water: Perdido Bay RQ- 2021-08-02-64

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒	Frank Butera	x		x		
☒	Nathan Mulkey		x		x	x
☐						
☐						

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☒ Syringe	☐ Pole
Depth measured with: Meter	
Secchi Equipment ID:	
Collection Method	
☐ Wading	☒ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other _____	☐ Gasoline Motor

Water Level: ☐ Normal ☒ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded						Meter ID# 155077 (ProDSS)			
Photos: YES	Flow: NA	Tide:	Tide Times: High: Low						
Biological Samples Collected: ☐ None ☒ HA ☐ SCI ☐ RPS ☐ Algae ID ☐ LVS ☒ LVI Other:									
SBIO ID Numbers: SBIO Visit ID 82907. HA ID 16997. Macro ID 11907									
Notes: SUNNY, HOT. ONGOING COMPLAINT AGAINST SAND MINE UPSTREAM.									

Duplicate Sample

Time Zone: <u>CEN</u>	Time: _____	Field ID: _____ (WIN ID_DUP)
WIN DMT Activity ID: _____		

Blank

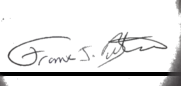
Time Zone: _____	Time: _____	Field ID: _____ (Blank Type_DDDMMYYY)
DI Source: _____	Location: _____	
DI Type: _____	Equipment ID: _____	
DI Container (Name/ID):		DI Container Type:

LIMS EVENT ID: 2270892 WIN Import ID: _____
Enter Field Parameters, Verify Station ID In LIMS DMT: _____ QC Station ID, Field Parameters In LIMS DMT: _____
(Initials/Date) (Initials/Date)
Scan/Save Field Sheets FB / 08/24/2021 Migrate Data to WIN: _____ Verify Data In WIN: _____
(Initials/Date) (Initials/Date) (Initials/Date)



RQ-2021-08-02-64
Customer: WQAP
Project ID: SMP

Collected By: Frank Butera, Nathan Mulkey
Field Report Prepared By: Frank Butera
Sampling Agency: FDEP

Place Label Here						Comments:					
WIN ID/Field ID:  G5NW0159 Location: Crescent Lake						Biology Collected. HA, LVI					
Matrix: Fresh						(Check one) ☒ GRAB ☐ COMPOSITE					
Date	Time	DO (mg/L)	DO (%SAT)	Temp. (C°)	pH	Sample Depth (m)	Secchi Disk (m)	Total Depth (m)	Sp COND (µmhos/cm)	Salinity (PPT _h)	
	1200 CEN	9.64	128.2	30.7	6.42	0.3	1 ☐ VOB (S)	1.97	96.9	0.04	
8/19/2021											
	1207 CEN	6.46	83.2	28.8	5.73	1.47			100.4	0.05	
Parameter Suite		Parameter Methods				Preservation		pH Check	# Bottles sent to Lab	Bottle Group	
Preserved Nutrients (P-500ML)		☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP				☒ Ice ☒ H2SO4*		☒ <2	1	A	
		Lot # SA0353110		Exp: 01112022							
Metals (P-500ML)		☐ W-ICPMS ☐ W-ICP ☐ W-HARD				☐ Ice ☐ HNO3*		☐ <2			
		Lot #		Exp:							
Filtered Nutrients (P125ML)		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter				☒ Ice			1	A	
		Filter Lot # 1005533									
		Syringe Lot # 17236199									
Chlorophyll (BP-1L)		☒ CHLSUITE-W				☒ Ice			1	A	
Physical/Aggregate (Fresh) (P-1L)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W-TDS				☒ Ice			1	A	
Physical/Aggregate (Marine) (P-1L)		☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY				☐ Ice					
Macroinvertebrates (PJ-2L)		☐ MI-FW-QLDC		Formalin Lot #		☐ Formalin					
Periphyton (PT-50ML)		☐ ALGAE-ID				☐ Ice					
Microbiology (Contract Lab Bottle)		☐ E Coli ☐ F Coli ☐ Enterococci ☐ Contract Lab				☐ Ice					
Molecular (QPCR-P-500ML)		☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3 ☐ PCR-GULL2 ☐ PCR-GFD ☐				☐ Ice					
Tracers (BG-500ML)		☐ W-E8321-DI ☐ W-E8321-MS				☐ Ice					
Pesticides (BG-500ML) (BG-1L)		W-E8321-DI		WE8321-MS		W-PSNP-TQ		W-CT-CL-R		☐ Ice	
Phytoplankton/Periphyton		W-PCL-TQ-R		W-CARB-AA (5 ml of MCAA** Buffer Solution)		DTY-QN-C		PKD-QN-BV		☐ Ice	
Name: Frank Butera Nathan Mulkey					Signature: 					Date: 08/19/2021	

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 82907 MACROPHYTE ID: 11907 LATITUDE: N 30.4657
COUNTY: Escambia STORET #: G5NW0159 LONGITUDE: W 87.2731
DATE: 8/19/2021 TIME: 11:45 CTZ SAMPLING AGENCY: FL DEP - NWROC
SITE NAME: Crescent Lake WBID: 697A
FIELD ID/NAME: G5NW0159 LAKE SIZE: 80.4 RQ: 2021-08-02-64

WATERSHED / LAKESIDE FEATURES

10-2021-08-02-64

LIMS ID 2270892

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS) : Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☒ Commercial ☒ Industrial ☒ Other (Specify) ☒ <u>Small rice Golf Course</u>				LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer) LDI: <u>6.44</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: 2008 SBIO					
STORMWATER INPUTS <u>4</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 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>3</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>3</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 ☒ 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: Top: <u>0.3</u> <u>30.7</u> <u>6.42</u> <u>9.64</u> <u>128.2</u> <u>96.9</u> <u>0.04</u> Mid-Depth: _____ Bottom: <u>1.5</u> <u>28.8</u> <u>5.73</u> <u>83.2</u> <u>6.46</u> <u>102.4</u> <u>0.05</u> Meter ID: <u>15077</u>				Water Surface Oils: ☐ None ☐ Sheen/Slick ☒ Glob ☐ Other _____			
Clarity: ☐ Clear ☒ Turbid ☒ Slightly Turbid Color: ☐ Clear ☐ Tannic ☒ Green				SECCHI (M) <u>1.0</u> Total Station Depth (M) <u>1.97</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			
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>Blue-Green Algae had level down. H2A has complaint also over sedimentation from upstream</u>				Additional Notes: Last sampled 2008 Storet 33010064 <u>Triple d Corp Sales prior to herbicide that kills.</u>			
SAMPLING TEAM: Frank Butera, <u>Nathan Mulkey</u>				SIGNATURE: <u>[Signature]</u>		DATE: <u>8/19/2021</u>	

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

STORET STATION NUMBER: G5NW0159	DATE (M/D/Y) 8/19/21	LAKE NAME Crescent Lake		FIELD ID / NAME G5NW0159	
WBID: 697A	COUNTY: Escambia	SAMPLING LOCATION/DESCRIPTION:		LAKE SIZE: 80.4	
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	Secchi > 3 m Or VOB	Secchi (m)	3 2.6 2.2 1.8 1.4	1.0 0.9 0.8 0.7 0.6	0.5 0.4 0.3 0.2 0.1
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	
Vegetation Quality	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants	Large masses (21%-40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats <i>Chara</i>	Lake choked (>40%) with nuisance macrophytes (duckweed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed)	
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	
Stormwater Inputs	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	
Bottom Substrate Quality	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present	Moderate layer of CPOM/mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom	Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom	
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	
Lakeside Adverse Human Alternations	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%)	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	
Upland Buffer Zone	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	
Adverse Watershed Land Use	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	37				
COMMENTS: Chara has replaced Myriophyllum as dominant tree					
ANALYSIS DATE: 8/19/21	ANALYST: Frank Butera		SIGNATURE: <i>[Signature]</i>		

SBIO Sample ID: 82947

HA ID: 16967

QC: _____

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Crescent Lake					County: Escambia					Date: 8/19/2021				
Analyst: F. Butera					Signature: <i>F. Butera</i>					STORET: G5NW0159				
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? (✓)			
11907-82907						11907								
SPECIES						SPECIES								
Acer rubrum						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						Itea virginica								
Brasenia schreberi						Juncus effusus								
Cabomba caroliniana						*Juncus marginatus								
Casuarina equisetifolia						*Juncus megacephalus								
Centella asiatica						Juncus repens								
Cephalanthus occidentalis						*Juncus scirpoides								
Ceratophyllum demersum						Lachnanthes caroliniana								
Chara sp.						Leersia hexandra								
Cladium jamaicense						Landoltia punctata (Spiro. punctata)								
Cliftonia monophylla						Lemna sp.								
Colocasia esculenta						Leucothoe racemosa (E. racemosa)								
*Commelina						Limnium spongia								
Crinum americanum						Limnophila sessiliflora								
*Cyperus alternifolius (C. involucreatus)						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						*Ludwigia								
Decodon verticillatus						Luziola fluitans (H. carolinensis)								
Diodia virginiana						Lyonia lucida								
*Echinochloa crus-galli						Magnolia virginiana								
*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 wisnig						Myrica cerifera								
Eleocharis cellulosa						<i>Lygodes</i>								
Eleocharis equisetoides						<i>Ternstroemia</i>								
Eleocharis interstincta						<i>Dichanthium</i>								
*Eriocaulon compressum						<i>Carex</i>								
*Eriocaulon decangulare						<i>Stachys</i>								
Eupatorium capillifolium														
*Fuirena														
Fuirena scirpoidea														
Gordonia lasianthus														
LIMS ID: 2270892														

82907

**Schoenoplectus tabernaemontani* = *Scirpus validus*

Station: Crescent Lake
 GPS Dec. 30.45670 x -87.27310
 Storet: G3NW0159_ WBID 697A
 Sample ID: 82907 Macro ID: 11907
 RQ-2021-08-02-64

Sampled : 08/19/2021
 Sampled By: F. Butera, N. Mulkey
 Location: Pensacola, Escambia.
 Receiving Waters: Marcus Creek, Perdido River
 LIMS ID: 2270892

	Taxa	3	6	9	12	Coll.	Verified
1	<i>Alternanthera philoxeroides</i>	1	1	1	1		
2	<i>Bacopa monnieri</i>		1				
3	<i>Bidens mitis</i>		1		1		
4	<i>Boehmeria cylindrica</i>	1	1	1	1		
5	<i>Carex glaucescens</i>				1		
6	<i>Centella asiatica</i>			1			
7	<i>Chara</i> sp.	D	D	D	D		
8	<i>Cladium jamaicense</i>			1			
9	<i>Cliftonia monophylla</i>			1	1		
10	<i>Colocasia esculenta</i>	1	1	1	1		
11	<i>Cyperus lecontei</i>			1			
12	<i>Cyperus odoratus</i>		1	1	1		
13	<i>Cyrtilla racemiflora</i>			1	1		
14	<i>Dichanthelium</i> sp.				1		
15	<i>Eleocharis baldwinii</i>	1	1	1	1		
16	<i>Eleocharis (submersed) vivipara</i>	1	1	1	1		
17	<i>Fuirena scirpoidea</i>				1		
18	<i>Habenaria repens</i>			1			
19	<i>Hydrocotyle</i> sp.			1			
20	<i>Juncus effusus</i>			1			
21	<i>Juncus marginatus</i>			1	1		
22	<i>Juncus polycephalus</i>			1			
23	<i>Juncus repens</i>	1	1	1	1		
24	<i>Landoltia punctata</i>				1	Y	FB
25	<i>Ludwigia octovalvis</i>			1		Y	FB
26	<i>Luziola fluitans</i> (Michx.)		1	1			
27	<i>Lycopus</i> sp.			1	1		
28	<i>Mayaca fluviatilis</i>		1	1	1		
29	<i>Mikania scandens</i>			1	1		
30	<i>Myrica cerifera</i>			1	1		
31	<i>Myriophyllum</i> (unknown nativity)	1	1	1	1		
32	<i>Nymphaea odorata</i>			1			
33	<i>Panicum repens</i>	1	1	1	1		
34	<i>Paspalum urvillei</i>			1	1		
35	<i>Persicaria hydropiperoides</i>				1		
36	<i>Potamogeton diversifolius</i>		1	1			
37	<i>Rhynchospora inundata</i>			1			
38	<i>Sabal palmetto</i>				1		
39	<i>Sapium sebiferum</i>		1	1	1		
40	<i>Sesbania herbaceae</i>	1					
41	<i>Sparganium americanum</i>			1			
42	<i>Triadenum virginicum</i>			1	1		
43	<i>Utricularia cornuta</i>			1			
	Taxa per section	9	15	33	26	Herb. Taxa	36
	Exotic Present	4	4	5	5	Woody Taxa	6
	Avg. taxa per section	21				Ferns	0
	sections with exotics	4				Macro Algae	1
	Exotic Taxa	6	Exotics per Section: 4.5			Total Taxa	43

Metric	Rep. 1	Rep. 2	Rep. 3	Rep. 4	LVI Average
LVI 2012	21	31	49	38	35
Native Percentage	60	68.75	82.35	73.08	71.05
FLEPPC Pct (Exotic)	20	18.75	5.82	11.54	14.03
Total Taxa	10	16	64	26	29.00
C of C over 7.0	0	6.25	5.88	3.85	4.00
Dominant Taxa	Chara	Chara	Chara	Chara	Chara
C of C Dominant	3.9	3.9	3.9	3.9	3.90



Cresecent Lake Storet: 33010064



0 0.05 0.1 0.2 Miles

2007 Digital Ortho Quadrangle

LDI = 5.88

Crescent Lake

Storet G5NW0159
 Receiving Water Marcus Creek
 Basin, WBID Perdido BaY,
 City, County Pensacola, Escambia
 Lake Acreage 80.4 acres / 32.54 Hectares
 Circumference (M)
 Seg. Length (M)

Section	Location	Dec. Latt.	Dec. Long.
12	Storet	30.45670	87.27310
	A	30.47374	87.27098
	B	30.47104	87.27310
3	C	30.46717	87.27253
	D	30.46280	87.27174
	E	30.46314	87.27379
6	F	30.46683	87.27513
	G	30.47016	87.27727
	H	30.47315	87.27956
9	I	30.47337	87.27870
	J	30.47057	87.27651
	K	30.47136	87.27356
12	L	30.47395	87.27179
	A	30.47374	87.27098

Segments selected 3,6,9,12

Old storet 33010064