FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

STRATEGIC MONITORING PLAN FIELD SHEET

January 2022

Meter Passed End of Day CCV
Yes / No

WIN Station Name: Twin Lake **Date:** 6/14/2022

WIN/Field ID: G3NW0215 **WBID:** 906A **ENR:** **Latitude:** 30.39516

County: OKALOOSA **Org ID:** 21FLPNS **Longitude:** -86.47528

Receiving Body of Water: Coleman Lake **RQ-** 2022-06-13-31

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
[x] Frank Butera	x		x		
[x] Leif Boman		x		x	x
[ ]					
[ ]					

Sampling Equipment

- [x] Sample Container
- [ ] Dipper
- [x] Syringe
- [ ] Carboy
- [ ] Van Dorn
- [ ] Pole

Depth measured with: Meter

Secchi Equipment ID:

Collection Method

- [ ] Wading
- [ ] From Shore
- [ ] Other
- [x] Canoe/Kayak
- [ ] Electric Motor
- [ ] Gasoline Motor

Water Level: [x] Normal [ ] Low [ ] High [ ] Dry [ ] Pooled [ ] Flooded

Meter ID# 155077 (PRODSS)

Photos: YES **Flow:** **Tide:** **Tide Times:** High: Low:

Biological Samples Collected: [x] None [ ] HA [ ] SCI [ ] RPS [ ] Algae ID [ ] LVS [ ] LVI Other:

SBIO ID Numbers: Visit ID 84661. HA ID17509. Macro ID 12195

Notes:

HEAT ADVISORY. SUNNY HOT, OVERCAST

Duplicate Sample

Time Zone: CEN **Time:** **Field ID:** N/A (WIN ID_DUP)

WIN DMT Activity ID:

Blank

Time Zone: **Time:** **Field ID:** (Blank Type_DDMMYYYY)

DI Source: **Location:**

DI Type: **Equipment ID:**

DI Container (Name/ID): **DI Container Type:**

LIMS EVENT ID: 2335018 **WIN Import ID:**

Enter Field Parameters, Verify Station ID In LIMS DMT: (Initials/Date) **QC Station ID, Field Parameters In LIMS DMT:** (Initials/Date)

Scan/Save Field Sheets FB / 07-18-2022 (Initials/Date) **Migrate Data to WIN:** (Initials/Date) **Verify Data In WIN:** (Initials/Date)

RQ-2022-06-13-31
Customer: NW-DIST
Project ID: STRATEGIC MONITORING PLAN

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

Place Label Here

WIN ID/Field ID: G3NW0215

Location: Twin Lake

Comments:

Matrix: Fresh

(Check one) [X] GRAB [ ] COMPOSITE

Date	Time	DO (mg/L)	DO (%SAT)	Temp. (C⁰)	pH	Sample Depth (m)	Secchi Disk (m)	Total Depth (m)	Sp COND (µmhos/cm)	Salinity (PPTh)
6/14/2022	1522 CEN	0.4	5	28.4	6.21	0.3	0.9 [X] VOB (S)	0.9	259	0.12
							Central Lab please use top row for login purposes			
	CEN									

Parameter Suite	Parameter Methods	Preservation	pH Check	# Bottles sent to Lab	Bottle Group
Preserved Nutrients (P-500ML)	[x] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	x [ ] Ice x [ ] H_2SO_4*	[ ] <2	1	A
	Lot # SA1308030 **Exp:**	12/01/2022			
Metals (P-500ML)	[x] W-ICPMS [x] W-ICP [x] W-HARD	x [ ] Ice x [ ] HNO_3*	[ ] <2	1	A
	Lot # NA1286110 **Exp:**	11/16/2022			
Filtered Nutrients (P125ML)	[x] W-PO4-F [x] Field Filtered 0.45 µm Filter	x [ ] Ice		1	A
	Filter Lot # 17460495	**Syringe Lot #**	1005533		
BOD (BP-1L)	[ ] OV-BODUNIN	[ ] Ice			
Chlorophyll (BP-1L)	[x] CHLSUITE-W	x [ ] Ice		1	A
Physical/Aggregate (Fresh) (P-1L)	x [ ] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-TDS / W-SO4-IC / W-	x [ ] Ice		1	A
Physical/Aggregate (Marine) (P-1L)	[ ] Alkalinity / W-F / W-TSS / TURBIDITY	[ ] Ice			
Macroinvertebrates (PJ-2L)	[ ] MI-FW-QLDC	[ ] 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)	[x] W-E8321-DI [x] W-E8321-MS	[x] Ice	MCAA Exp.	1	A
Pesticides (BG-500ML) (BG-1L)	[ ] W-E8321-DI [ ] WE8321-MS [x] W-PSNP-TQ [ ] W-CT-CI-R [ ] W-PCL-TQ-R [ ] W-CARB-AA (5 ml of MCAA** Buffer Solution) [ ] W-TR-SQ-R [ ] W-PCB-TQ-R	[x] Ice	MCAA Lot#	2	A
Phytoplankton/Periphyton	[ ] DTY-QN-C [ ] PKD-QN-C	[ ] Ice			

Name: Frank Butera, Leif Boman

Signature:

Date: 06/14/2022

*2.0 ml of Preservative used unless noted otherwise.
**MCAA: Monochloroacetic acid buffer solution

Site Name _84661 _____ Date: _06/14/2022_____

WIN-ID _G3NW0215___ Field ID_G3NW0215 Project: SMP / TMDL Studies

Visit ID 84661_____ RQ: 2022-06-13-31_____

Macro ID 12195_____ LIMS ID: 2335018_____

HA ID _17509_____ WBID: 906A_____

☒ LVI

☒ Sample Site Created in SBIO

☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO Initial FB, 7/11/2022 ☒ Date and Initial QA: 7/14/2022 SS____ HA Score 47

☒ LVI entered in SBIO Initial FB, 7/11/2022 ☒ Date and Initial QA: 7/14/2022 SS_

☒ Plants getting verified ☒ Date submitted: _In House_____

☒ Plants verified ☒ Date returned: _In House_____

☒ Macro ID authorized in SBIO ☒ Date and Initial: FB 7/18/2022_____

☒ Macro ID score: _33_____

☒ If SMP, scanned into database

Notes:

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 84661 MACROPHYTE ID: 12195 LATITUDE: N 30.39516

COUNTY: Okaloosa (Destin) STORET #: G3NW0215 LONGITUDE: W -86.47528

DATE: 06/14/2022 TIME: 15:22 SAMPLING AGENCY: FL DEP - NWROC

SITE NAME: Twin Lake WBID: 906A

FIELD ID/NAME: G3NW0215 LAKE SIZE: 5.59 Acres RQ: 2022-06-13-31

LIMS ID: 2335018

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)
				✓	✓	✓ WWTP	✓ Eglin AFB

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)

LDI: N/A

Land Use Source & Year:

Local Watershed Erosion (select one) : ☐ None ☐ Slight ☐ Moderate ☒ Heavy

Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☐ Moderate ☒ Heavy

Artificially Impounded ☒ Yes ☐ No

STORMWATER INPUTS 1	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 5	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 10	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 _____

Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____

Meter Readings: 15:22	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat. (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top: (TOP)	0.4						
Mid-Depth:	0.3	28.4	6.21	0.4	5	259	0.12
Bottom :							

Meter ID: 15077

Clarity: ☐ Clear ☐ Opaque ☐ Turbid ☒ Slightly Turbid

Color: ☐ Clear ☐ Tannic ☒ Green

SECCHI (M) 0.9

VOB ☒

Total Station Depth (M) 0.9

Sediment Type: (may check more than one) ☐ Sandy ☐ Organic fibrous (peaty, CPOM) ☒ Sand/Silt ☒ Organic smooth (muck)

Sample Taken? ☐ Yes ☒ No ☒ Vegetated ☐ 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	☒	☐	☐	☐

Additional Notes:
- Active Algal Bloom @ time of sampling
- Surface covered w/ Landoltia, Lemna, Lyngbya

Weather Conditions : Hot, Sunny. Heat Advisory

SAMPLING TEAM: Frank Butera, Leif Boman SIGNATURE: DATE: 6/14/2022

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

STORET STATION NUMBER: G3NW0215	DATE (M/D/Y): 06/14/2022	LAKE NAME: Twin Lake	FIELD ID / NAME: G3NW0215
WBID: 906	COUNTY: Walton	SAMPLING LOCATION/DESCRIPTION: Destin	LAKE SIZE: 5.59 Acres

PARAMETER				
HYDROLOGY	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 ☒
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 20 9	Secchi >3 m				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
	Or VOB:	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Vegetation Quality 1	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					Lake choked (>40%) with nuisance macrophytes (duck-weed, 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 1	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 5	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 5	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 FB 10 5	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 5	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: 47	COMMENTS:

ANALYSIS DATE: 6/14/22	ANALYST: F. Butera	SIGNATURE:

SBIO Sample ID: 84661 HA ID: 17509 QC✓: _____

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: **Twin Lake**	County: **Walton (Destin)**	Date: 6/14/2022
Analyst: **Frank Butera**, Leif Boman	Signature:	STORET: **G3NW0215**

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 84661 SPECIES	7	4	1	10	Collected? (√)
Acer rubrum		1			
Alternanthera philoxeroides	1		1	1	
Andropogon sp.					
Azolla filiculoides (A. caroliniana)	1	1	1	1	
Baccharis sp.					
Bacopa caroliniana					
Bacopa monnieri					
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi					
Cabomba caroliniana					
Casuarina equisitifolia					
Centella asiatica					
Cephalanthus occidentalis					
Ceratophyllum demersum					
Chara sp.					
Cladium jamaicense					
Cliftonia monophylla					
Colocasia esculenta		1			
*Commelina					
Crinum americanum					
***Cyperus alternifolius** (C. involucratus)					
Cyperus articulatus					
Cyperus haspan					
*Cyperus lecontei					
*Cyperus polystachyos					
*Cyperus odoratus		1	1	1	
*Cyperus surinamensis					
Cyrilla racemiflora					
Decodon verticillatus					
Diodia virginiana					
*Echinochloa crus-galli					
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Egeria densa					
Eichhornia crassipes					
*Eleocharis baldwinii					
*Eleocharis					
Eleocharis cellulosa					
Eleocharis equisetoides					
Eleocharis interstincta					
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium		1			
*Fuirena					
Fuirena scirpoidea			1		
Gordonia lasianthus					
LIMS ID: 2335418					

Macro ID 12195 SPECIES	7	4	9	10	Collected? (√)
Habenaria repens					
Hydrilla verticillata					
Hydrocotyle sp.	C	C	C	C	
Hygrophila polysperma					
*Hypericum fasciculatum					
*Hypericum hypericoides					
*Hypericum myrtifolium					
Ilex cassine					
Ipomoea aquatica					
Ipomoea sagittata					
Itea virginica					
Juncus effusus					
*Juncus marginatus					
*Juncus megacephalus					
Juncus repens					
*Juncus scirpoides					
Lachnanthes caroliniana					
Leersia hexandra					
Landoltia punctata (Spiro. punctata)	C	C	C	1	
Lemna sp.					
Leucothoe racemosa (E. racemosa)					
Limnobium spongia					
Limnophila sessiliflora					
Liquidamber styraciflua					
*Ludwigia arcuata					
*Ludwigia leptocarpa					
*Ludwigia linearis					
*Ludwigia octovalvis					
***Ludwigia peruviana**					
*Ludwigia repens					
*Ludwigia					
Luziola fluitans (H. carolinensis)					
Lyonia lucida					
Magnolia virginiana		1			
Mayaca fluviatilis					
Melaleuca quinquenervia					
Micranthemum glomeratum					
Micranthemum umbrosum					
Mikania scandens					
Mimosa pigra					
Myrica cerifera	1	1	1	1	
Landoltia					

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Waterbody: **Twin Lake** Storet: **G3NW0215** Date: 6/14/2022 SBIO ID 84661 Macro ID 12195

SPECIES	2	4	6	10	Collected? (√)
Myriophyllum aquaticum	I	I	I	I	
*Myriophyllum heterophyllum					
*Myriophyllum laxum					
*Myriophyllum pinnatum					
Myriophyllum spicatum					
*Najas filifolia					
*Najas guadalupensis	I	I			
*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	I	I	I		
Paspalidium geminatum					
*Paspalum repens					
Paspalum urvillei			I		
Peltandra sp.					
Persea sp.					
Pennisetum purpureum					
Phragmites australis					
Pinus elliottii					
Pistia stratioides					
Pluchea sp.					
*Polygonum glabrum (densiflorum)					
*Polygonum hydropiperoides			I		
*Polygonum punctatum					
*Polygonum ____________					
Pontederia cordata					
*Potamogeton diversifolius					
*Potamogeton illinoensis					
*Potamogeton pusillus					
*Potamogeton pectinatus (Stuck. pectinatus)					
Proserpinaca pectinata					
*Rhexia ____________					
*Rhynchospora corniculata					
*Rhynchospora inundata					
Rhynochospora tracyi					
Ricciocarpus natans					
Sabal palmetto					
Sacciolepis striata					
*Sagittaria filiformis					
*Sagittaria graminea					
*Sagittaria isoetiformis					
Sagittaria lancifolia		I	I		
Sagittaria latifolia					

SPECIES	7	4	6	10	Collected? (√)
Salix caroliniana			I	I	
Salvinia minima					
Sambucus canadensis					
Sapium sebiferum	I	I		I	
Saururus cernuus					
Schinus terebinthifolius					
*Schoenoplectus californicus					
*Schoenoplectus pungens					
*Schoenoplectus tabernaemontani			I		
Scirpus cubensis (Oxycaryon cubense)					
Scirpus cyperinus					
*Sesbania ____________					
Solidago sp.					
Sparganium americanum					
Spartina bakeri					
Spirodela polyrhiza					
Taxodium sp.		I		I	
Thalia geniculata					
Thelypteris palustris					
Triadenum virginicum					
Typha sp.	I	I	I	DC	
Urochloa mutica (Brachiaria mutica)					
*Utricularia gibba (U. biflora)	I	I			
*Utricularia floridana	I				
*Utricularia foliosa					
*Utricularia inflata					
*Utricularia purpurea					
*Utricularia cornuta					
*Utricularia radiata					
Vallisneria americana					
*Websteria confervoides					
Wedelia trilobata (Sphag. trilobata)					
Wolffiella spp.	I	C	I	I	
Woodwardia virginica					
Xyris sp.					
Zizania aquatica					
Zizaniopsis milacea					
[illegible]	I	I	I	I	
[illegible]	I		I		
Liliopsis	I		I		
*Schoenoplectus tabernaemontani = Scirpus validus					

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: **Twin Lake**	County: **Walton (Destin)**	Date: 06/14/2022
Analyst: **Frank Butera,** Leif Boman	Signature:	STORET: **G3NW0215**
Except where noted as "sp." species level identification required. *Genera that may require lab verification* Plants in bold= FLEPPC invasive exotic.		Lake units sampled (circle one group):
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.		**1, 4, 7, 10** 2, 5, 8, 11 3, 6, 9, 12

SBIO ID 84661 SPECIES	1	4	7	10	Collected? (√)	Macro ID 12195 SPECIES	1	4	7	10	Collected? (√)
Nymphaea odorata											

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

Date: 6/14/2024	Name of Lake: Twin Lake	Gear used:	POWAR ✓	EKMAN	OTHER
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		sand, silt/clay, CPOM, muck, SAV
6		sand, silt/clay, CPOM, muck, SAV	W.P. 12 station	0.9	sand, silt/clay, CPOM, muck, SAV

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

Storet G3NW0215 Field ID G3NW0215 Project. SMP / TMDL Studies SBIO ID: 84661

WBID 906 A

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

Photo Log
Win ID / Storet: G3NW0215
Station Name: Twin Lake
Date: 6/14/2022
Samplers. Frank Butera, Leif Boman

1 N
2 E
3 S
4 W
5
6
7
8
9
10
11
12
13
14
15
16
17

Notes.

Station: Twin Lake
GPS Dec. 30.39516 x -86.47528
Storet: G3NW0215 WBID 724AAD
Sample ID: 84661 Macro ID: 12195
RQ-2022-06-13-31

Sampled : 06/14/2022
Sampled By. F.Butera, L. Boman
Location. Destin, Okaloosa
Receiving Waters: Joe's Bayou
LIMS ID: 2335018

	Taxa	1	4	7	10	Coll.	Verified
1	*Acer rubrum*		1				
2	*Alternanthera philoxeroides*	1		1	1		
3	*Azolla filiculoides*	1	1	1	1		
4	*Colocasia esculenta*		1				
5	*Cyperus odoratus*	1	1		1		
6	*Eupatorium capillifolium*		1				
7	*Fuirena scirpoidea*	1					
8	*Hydrocotyle* sp.	C	1	C	C		
9	*Landoltia punctata*	C	C	C	1		
10	*Lilaeopsis carolinensis*	1		1			
11	*Magnolia virginiana*		1				
12	*Myrica cerifera*	1	1	1	1		
13	*Myriophyllum aquaticum*	1	1	1	1		
14	*Najas quadalupensis*		1	1			
15	*Panicum repens*	1	1	1			
16	*Paspalum* urvillei	1					
17	*Persicaria hydropiperoides*	1					
18	*Sagittaria lancifolia*	1	1				
19	*Salix carolinana*	1			1		
20	*Sapium sebiferum*		1	1	1		
21	*Schoenoplectus tabernaemontani*	1					
22	*Taxodium* sp.		1		1		
23	*Typha* sp.	1	1	1	C		
24	*Utricularia gibba*		1	1			
25	*Vitis* sp.	1		1			
26	*Wolffiella* sp.	1	C	1	1		
	Taxa per section	18	17	14	12	Herb. Taxa	19
	Exotic Present	5	5	5	4	Woody Taxa	6
	Avg. taxa per section	15				Ferns	1
	sections with exotics	4				Macro Algae	0
	Exotic Taxa	7	Exotics per Section: 4.75			Total Taxa	26

Seen but not counted (Not approp. For LVI or Not in surveyed segment)

Taxon	Section	Section	Section	Section
Lyngbya	1	4	7	10
Spartina bakeri		6	9	

Metric	Rep. 1	Rep. 2	Rep. 3	Rep. 4	LVI Average
LVI 2012	33	34	25	39	33
Native Percentage	72.22	77.78	71.43	75	74.11
FLEPPC Pct (Exotic)	5.56	16.64	14.29	8.33	11.21
Total Taxa	18	18	14	12	26
C of C over 7.0	0	11.11	0	8.33	4.86
Dominant Taxa	L.punctata, Hydrocotyle	L.punctata, Wolfiella sp.	L.punctata, Hydrocotyle	Hydrocotyle, Typha sp.	L.punctata (+)
C of C Dominant	2	1	2	1.5	1.63

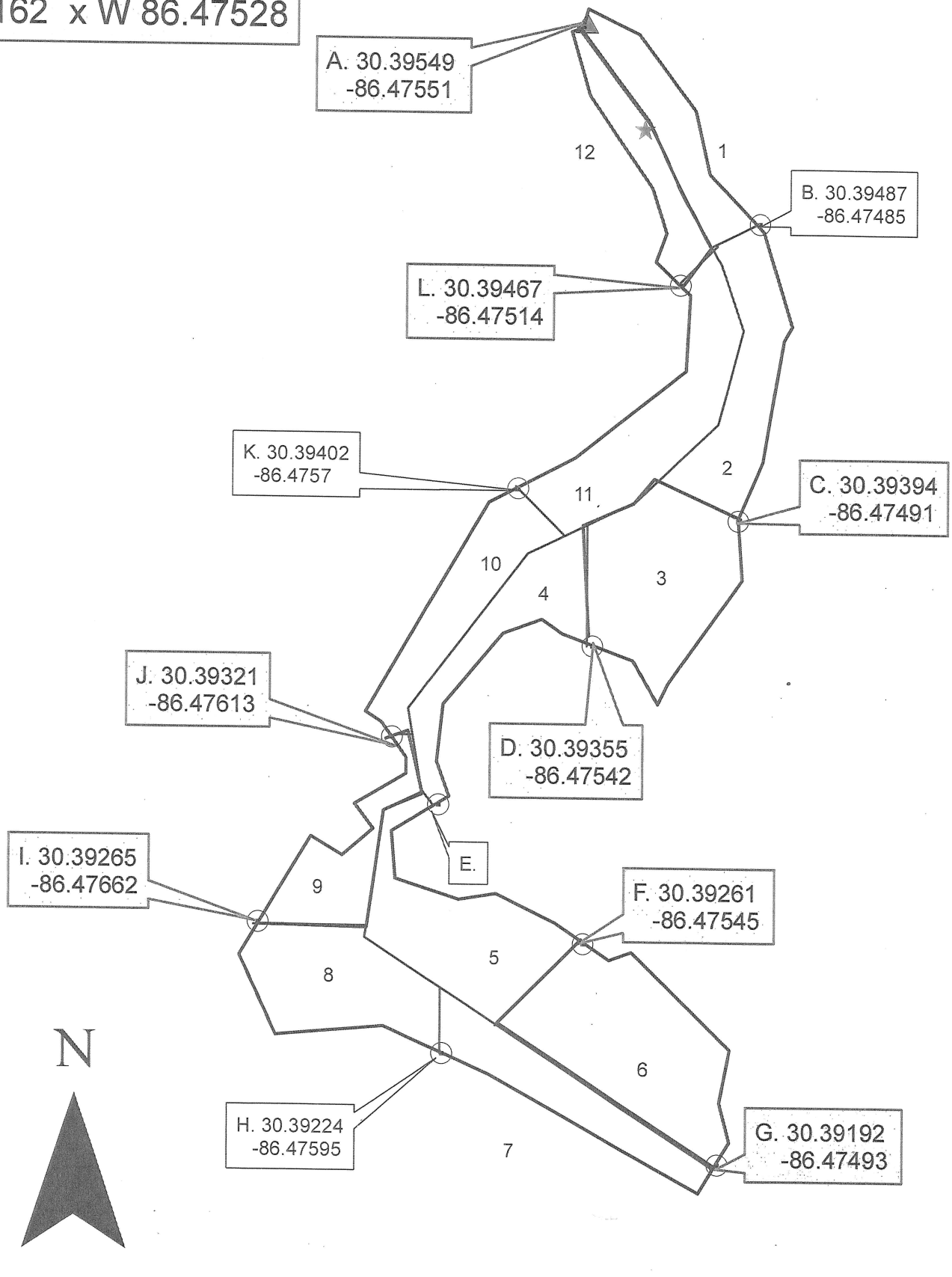
Twin Lake

Storet	G3NW0215
Receiving Water	Joe's Bayou
Basin, WBID	Choctawhatchee Bay, 906
City, County	Destin, Okaloosa
Lake Acreage	5.59 acres / 2.262 Hectares
Circumference (M)	1273.54
Seg. Length (M)	106.1283333

Section	Location	Dec. Latt.	Dec. Long.
12	Storet	30.39516	-86.47528
1	A	30.39549	86.47551
	B	30.39487	86.47485
	C	30.39394	86.47491
4	D	30.39355	86.47542
	E	30.39301	86.47599
	F	30.39261	86.47545
7	G	30.39192	86.47493
	H	30.39224	86.47595
	I	30.39265	86.47662
10	J	30.39321	86.47613
	K	30.39402	86.47570
	L	30.39467	86.47514

Segments selected 1,4,7,10

G3NW0218. Twin Lakes
WBID 906.
2.6 Hectares/ 5.6 Acres
Destin, Okaloosa
N 30.395162 x W 86.47528



Station: Twin Lake
GPS Dec. 30.39516 x -86.47528
Storet: G3NW0215 WBID 906A
Sample ID : 82541 Macro ID: 11859
RQ-2021-06-21-27 LIMS ID: 22527081

2021

Sampled : 06/02/2021
Sampled By. F.Butera, S. Slade
Location. Vernon, Washington County
Receiving Waters: Kell-Aire Lake
Basin: Joe's Bayou

	Taxa	3	6	9	12	Coll.	Verified
1	*Acer rubrum*		1				
2	*Alternanthera philoxeroides*	1	1	1	1		
3	*Boehmeria cylindrica*	1					
4	*Cephalanthus occidentalis*				1		
5	*Chasmanthium nitidum*		1			Y Pressed	FB
6	*Colocasia esculenta*	1					
7	*Cyperus odoratus*	1	1			Y	FB
8	*Hydrocotyle* sp.	1	C	1	1		
9	*Landoltia punctata*	D	C	D	D		
10	*Lemna* spp.	1	1	1	1	Y	FB
11	*Lilaeopsis carolinensis*	1	1				
12	*Magnolia virginiana*				1		
13	*Myrica cerifera*	1	1	1	1		
14	*Myriophyllum aquaticum*	1	1	1	1		
15	*Panicum repens*			1	1	Y	FB
16	*Paspalum* urvillei	1	1			Y	FB
17	*Pinus elliotii* (Slash)	1		1			
18	*Polygonum hydropiperoides*	1	1	1	1		
19	*Pontederia cordata*	1					
20	*Sagittaria lancifolia*		1	1	1		
21	*Salix carolinana*			1			
22	*Sapium sebiferum*	1	1	1	1		
23	*Spartina bakeri* Merr.		1	1		Y (Pic only)	T McHale
24	*Taxodium* sp.		1	1	1		
25	*Typha* sp.		1	1	1		
26	*Vitis* sp.			1	1		
27	*Woodwardia areolata*	1					
	Taxa per section	16	16	16	15	Herb. Taxa	17
	Exotic Present	5	4	4	4	Woody Taxa	8
	Avg. taxa per section	16				Ferns	1
	Sections with exotics	4				Macro Algae	0
	Exotic Taxa	6	Exotics per Section: 4.3			Total Taxa	26

Seen but not counted (Not approp. For LVI or Not in surveyed segment)

Taxon	3	6	9	12
Filamentous green algae	1	1	1	1
Blue-Greeen Algae (Lyngbya)	1	1	1	1

Metric	Rep. 1	Rep. 2	Rep. 3	Rep. 4	LVI Average
LVI 2012	22	40	36	43	35
Native Percentage	66.67	75	73.33	71.43	71.61
FLEPPC Pct (Exotic)	13.33	6.25	13.33	14.29	11.80
Total Taxa	15	16	15	14	15
C of C over 7.0	0	6.25	6.67	14.29	6.80
Dominant Taxa	Landoltia punctata	Hydrocotyle / L. punctata	Landoltia punctata	Landoltia punctata	Landoltia punctata
C of C Dominant	-	2	-	-	2.00

Plants for verification not returned.

2021