



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

March 2017

PAGE 1 OF

Data Qualified?
Yes / No

Location/STORET Station Name: St Marks River Down Stream From Rise

Date: 07/13/2017

STORET # G1TLHR0044-2017-01

WBID: 793D

Latitude: 30 16 15.034

(Decimal Degrees)

County: Wakulla

RQ -

2017-06-26-38

ORG ID: 21FLTLHR

Longitude: 84 08 54.254

(Decimal Degrees)

Receiving Body of Water: Gulf of Mexico

Field ID: G1TLHR0044-2017-01

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Duplicate Collection	Blank Collection	Sampling Equipment		
Chris Green		☒	☒	☒	☒	☒	☒	☒	☐ Sample Container	☐ Van Dorn	☐ Pole
Jon Woods		☒	☒	☒	☒	☒	☒	☒	☐ Carboy	☒ Syringe	
		☐	☐	☐	☐	☐	☐	☐	☐ Dipper	☐ Other	
									Equipment ID		
									Collection Method		
									☐ Wading	☐ Via Boat	
									☐ From Shore	☐ Canoe/Kayak	
									☒ Other (note below)	☐ Electric Motor	
									Deck	☐ Gasoline Motor	
Water Level: Dry / Pooled / Low / Normal / High / Flooded										Matrix: Fresh / Marine / DI	
Meter ID# 118157 XSI 6920										Photos: Yes / No	
										Tide Falling: Yes / No / NA	

Field Sample

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
EST	7:30	0.3	1.1	2.6	29%	6.9	0.12	0.9	254	21.5
CEN								1.15		

Biological Samples Collected: None ☒ HA ☐ SCI ☒ RPS ☒ Algae ID ☒ LVS ☐ LVI Other

SBIO ID Numbers: SBIO-ID: 31838 RPS-ID: Macrophyte-ID: LIMS#: 31838

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☐ H2SO4	SA-163030	6/12/18	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Periphyton	☒ ALGAE-ID	☒ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococci ☐ qPCR	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

QA/QC Sample Information

Duplicate

Time Zone: EST CEN **Sample Depth (m):** 0.3 **Field ID:** G1TLHR0044-2017-01
Time: 7:30 **Total Depth (m):** 1.1

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H ₂ SO ₄	SA-163030	6-12-18	☒ < 2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ < 2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	Place Preservative Sticker(s) Here (If Available)		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococci ☐ qPCR	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

Blank

Time Zone: EST CEN **Time:** 7:00 **Field ID:** G1TLHR0044-2017-01 **Location:** St Marks River

☒ Field Blank ☐ Equipment Blank ☐ Field Cleaned Equipment Blank **Equipment ID:**

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H ₂ SO ₄	SA-163030	6-12-18	☒ < 2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ < 2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	Place Preservative Sticker(s) Here (If Available)		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococci ☐ qPCR	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Other			

Notes:

G1TLHR0044-2017-01

793D **Field ID** ↑ **STORET** ↓

St Marks River Down
Stream From Rise

Signature: *[Signature]* **Date:** 7-17-2017

G1TL HR0044

Field Parameters Entered into LIMS: _____ (Initials/Date) Field Parameters QC in LIMS: _____ (Initials/Date)
 Date Migrated to STORET: _____ (Initials/Date) Field Sheets Scanned/Saved: *66* 7-24 (Initials/Date)

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: St Marks River	Date: 7/13/17	County: Wakulla	Storet Number: G1TLHR0044
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County: Wakulla

Storet Number: G1TLHR0044

Analyst: Chris Green / Jon Woods	Signature: 
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Signature: 

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

[illegible]

Unknown Rush - really small *Cladium Jamaicense*
 11 *Cyperus* - *Cyperus Pseudovegetus* Revision Date: March

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: DEP 8034 / 21FLTHHR		STORET STATION NUMBER: G1TLHR0044	DATE (MM/DD/YYYY): 07/13/2017	RECEIVING BODY OF WATER: Gulf of Mexico
REMARKS:	COUNTY: Wakulla	LOCATION: St Marks River Down Stream From Rise	FIELD ID/NAME: G1TLHR0044-2017-01	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>10</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>20</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>20</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering <u>10</u> ----- <u>13</u> Primary Score <u>63</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>20</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank <u>10</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>10</u> Left Bank <u>9</u>	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>10</u> Left Bank <u>8</u> ----- Secondary Score <u>77</u>	10 9	8 7 6	5 4	3 2 1

140 **TOTAL SCORE**

Date: 07/13/2017	Analyst: Chris Green / Jon Woods	Signature: 
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DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID G1TLHR0044-2017-01 ORG ID 21FLTHLR LATITUDE 30 16 15.034
COUNTY Wakulla STORET # G1TLHR0044 LONGITUDE 84 08 54.254
DATE 07/13/2017 TIME 9:00 SAMPLING AGENCY DEP 8034
SITE NAME St Marks River Down Stream From Rise
FIELD ID/NAME G1TLHR0044-2017-01 RECEIVING BODY OF WATER Gulf of Mexico

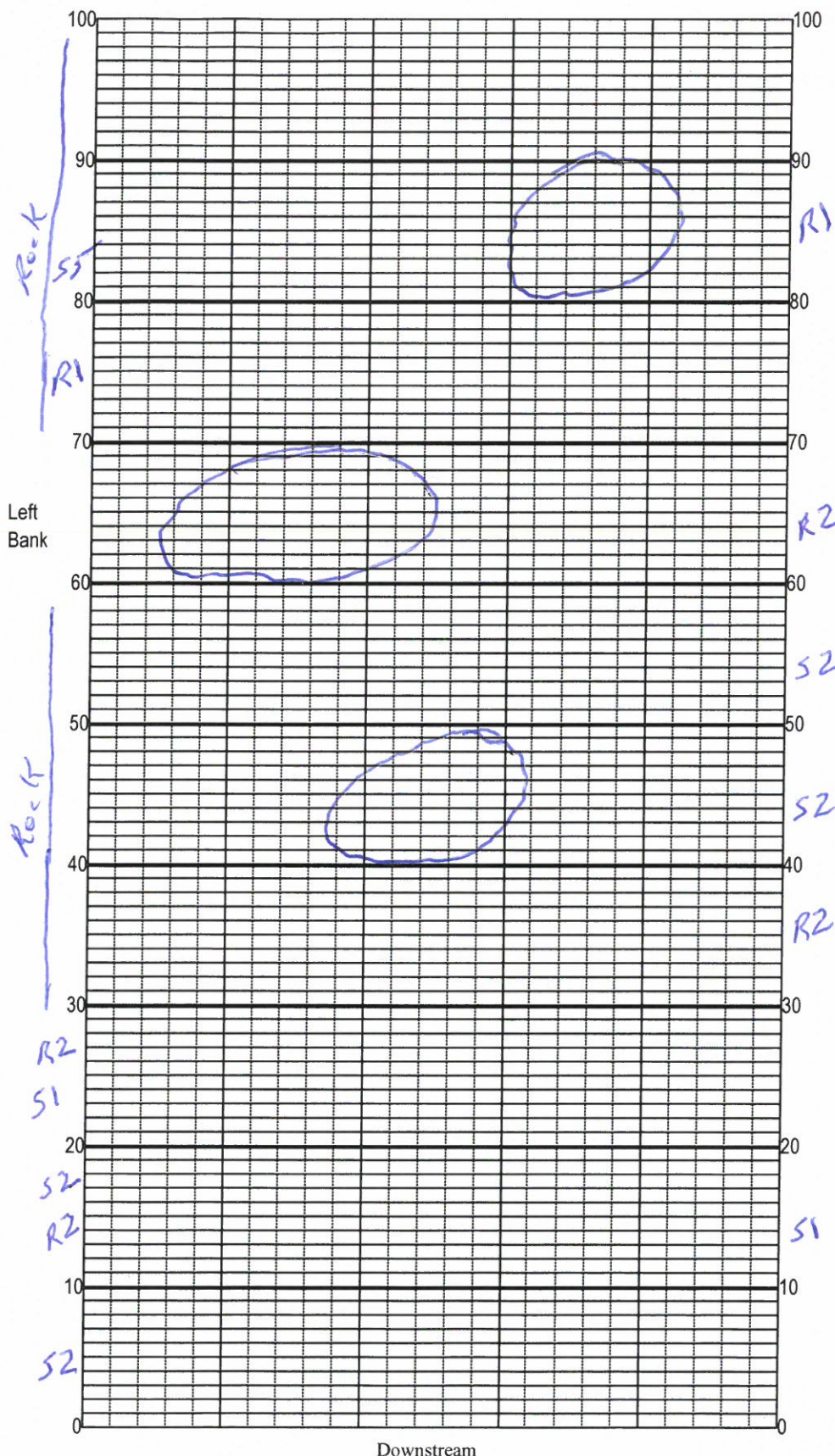
RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) : Forest/Natural <u>40</u> Silviculture <u>50</u> Field/Pasture <u>10</u> Agricultural <u>10</u> Residential <u>10</u> Commercial <u>10</u> Industry <u>10</u> Other (Specify) <u>10</u>								Landscape Development Intensity Index (LDI) <u>100</u>
Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy								Typical Width (m) Depth (m)/Velocity (m/sec) Transect <u>100</u> m wide <u>0.5</u> m/s <u>0.5</u> m/s <u>0.5</u> m/s <u>0.5</u> m deep <u>0.5</u> m deep <u>0.5</u> m deep
Local Watershed NPS Pollution : ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy								
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank : <u>>18</u> Right Bank : <u>>18</u>				Hydrologic Modification Score (per FT 3101) <u>1.4</u>				
High Water Mark: <u>0.3</u> + <u>1.1</u> = <u>1.4</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				
Artificially ☒ No ☐ Mostly recovered, more sinuous Channelized : ☐ Some recovery ☐ Recent, severe				Canopy Cover % ☒ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☐ Moderate Shaded (46-80%)				

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) :		Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☒ Severe ☐ Algae Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐	
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon INVERT PERI % # Times # Times Coverage Sampled Sampled Woody Debris (Snags) <u>1.5</u> Undercut Banks / Roots <u>1.0</u> Leaf Packs or Mat <u>0</u> Aquatic Vegetation <u>90</u> Rock or Shell Rubble.. <u>3.0</u> Sand..... <u>4.5</u> Mud / Muck / Silt Other Other		WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top : <u>0.3</u> <u>21.5</u> <u>6.9</u> <u>2.6</u> <u>29.1</u> <u>254</u> <u>0.12</u> <u>1.15</u> Mid: <u>1.1</u> Bottom: <u>1.1</u> Meter ID: <u>YSI 6920 # 118157</u>			
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☐ ☒ Fish: ☐ ☐ ☐ ☒ Aquatic Plants: ☐ ☐ ☒ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐		Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____ Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____ Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐ Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐ Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐			
System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☒ River/Spring Run		AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.			
SAMPLING TEAM <u>Chris Green / Jon Woods</u>		SIGNATURE : <u>Chris Green</u>		DATE : <u>07/13/2017</u>	

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Location: G1TLHR0044-2017-01

Date: 07/13/2017

Sampler: Chris Green

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

☐ S Snags 1.5

☐ R Roots/undercut banks 1.0

☐ L Leaf Packs (or mats) _____

☐ A Aquatic Macrophytes 90%

☐ O Rock 3.0

☐ _____

☐ Pools total # observed = _____
range expected = _____

Average width 6.70 100 m

Average depth 1.1 m

Velocity measured at 50 meter mark. 2 sec.

WQ & chemistry taken at 100 70 meter mark.

Habitat Smothering: 5:1

Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability: +++

Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width: >18m

Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

90% - Hydrilla verticillata

+ Vallisneria spiralis

+ Sagittaria arifolia

S - 15

R - 10

A - 90%

O - 30

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: G1TLHR0044-2017-01					County: Wakulla		Date: 07/13/2017		Investigators: Chris Green / Jon Woods	
									STORET Station Number: G1TLHR0044	

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	6			60	1	N		
	2	5				2	N		
	3	N				3	N		
	4	5				4	N		
	5	6		0		5	N		0
	6	6				6	N		
	7	N				7	N		
	8	N				8	N		
	9	6				9	N		
10	1	6			70	1	6		
	2	6				2	5		
	3	N				3	N		
	4	N				4	N		
	5	6		0		5	5		0
	6	6				6	6		
	7	N				7	N		
	8	5				8	N		
	9	N				9	N		
20	1	6			80	1	4		
	2	6				2	5		
	3	N				3	5		
	4	N				4	6		
	5	N		0		5	6		0
	6	5				6	N		
	7	6				7	N		
	8	6				8	N		
	9	N				9	6		
30	1	N			90	1	6		
	2	N				2	6		
	3	N				3	6		
	4	6				4	N		
	5	6		0		5	N		0
	6	6				6	N		
	7	N				7	N		
	8	N				8	6		
	9	N				9	6		
40	1	6			100	1	N		
	2	6				2	N		
	3	6				3	6		
	4	N				4	6		
	5	N		0		5	6		0
	6	6				6	N		
	7	N				7	N		
	8	N				8	5		
	9	N				9	6		
50	1	6			Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached. Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank. Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6. Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.				
	2	6							
	3	6							
	4	6							
	5	6		0					
	6	6							
	7	6							
	8	6							
	9	6							

Secchi depth	1.15
Estimated?	

# points ranked 4-6	52
total points assessed	99
% points ranked 4-6	53

Check accompanying data collected at same site/date.	
Algal mat sample	☒
Linear Veg Survey	☒
Habitat Assessment	☒
SCI/Biorecon	☐
Water sample	☒
RQ- 2017- 06-26-38	

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm