Request Number: RQ-2019-07-01-51

~~Run 4~~ C6

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Jan 25, 2018

Customer: TLH-ROC

Project ID: SMP

Requester: Michael Eckles

Field Report Prepared By: C. Green

Collected By: Chris Green / Jade Burtchett

Sampling Agency: FDEP 8034

Field/WIN ID → G2TLHR0042

Location ↓ Apalachicola River 0.8 miles upstream Owl Creek

Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 8-8-2019 Time 11:30 Eastern / Central	Composite end Date — Time —		Bottle Group(s) (See pg 2) B
		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen 6.10 ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L) —		
		Temp (C) 30.0	pH 6.97	Sample Depth 0.3 ☐ ft ☐ m	Sp. Conductance (umho/cm) 133.1	
		Salinity (ppt) 0.06	Comments			

Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time Eastern / Central	Composite end Date Time		Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
WIN/STORET #		Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments			

Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time Eastern / Central	Composite end Date Time		Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
WIN/STORET #		Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments			

Location		☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time Eastern / Central	Composite end Date Time		Bottle Group(s)
Field ID		Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
WIN/STORET #		Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments			

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
C. Green	8-8-2019 14:14	Hand	1		8/8/19 1414

Group:	Bottle Type:	# of Bottles:	Preservative:	Enter Number of Bottles Sent to Lab
A	P-1L	2	ICE	
	ALKALINITY TURBIDITY W-CL-IC W-COLOR W-F W-SO4-IC W-TDS W-TSS			
A	BP-1L	2	ICE	
	CHLSUITE-W			
A	P-500ML	2	HNO3	
	W-ICP W-ICPMS			
A	P-500ML	2	ICE And H2SO4	
	W-NH3 W-NO2NO3 W-S-A-TP W-TKN W-TOC			
A	P-125ML	2	FILTER-ICE	
	W-PO4-F			
B	P-1L	6	ICE	
	ALKALINITY TURBIDITY W-CL-IC W-COLOR W-F W-SO4-IC W-TDS W-TSS			
B	BP-1L	6	ICE	
	CHLSUITE-W			

Group	Bottle Type		# of Bottles	Preservative		Enter Number of Bottles Sent to Lab
B	ECOLI-18QT	P-250ML-WO-THI	6	ICE		1
B	W-ICP W-ICPMS	P-500ML	6	HNO3	NA9099030 4/9/20	1
B	W-NH3 W-NO2NO3 W-S-A-TP W-TKN W-TOC	P-500ML	6	ICE And H2SO4	SA9010030 4/10/20	1
B	W-PO4-F	P-125ML	6	FILTER-ICE		1
C	ECOLI-18QT	P-250ML-WO-THI	1	ICE		
D	ALKALINITY TURBIDITY W-CL-IC W-COLOR W-F W-SO4-IC W-TDS W-TSS	P-1L	1	ICE		
D	ECOLI-18QT	P-250ML-WO-THI	1	ICE		
D	W-ICP W-ICPMS	P-500ML	1	HNO3		
D	W-NH3 W-NO2NO3 W-S-A-TP	P-500ML	1	ICE And H2SO4		

Group: D	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	ICE And H2SO4	**Enter Number of Bottles Sent to Lab**	
	W-TKN W-TOC						
Group: D	Bottle Type:	P-125ML	# of Bottles: 1	Preservative:	FILTER-ICE	**Enter Number of Bottles Sent to Lab**	
	W-PO4-F						

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified? Yes / No

WIN Station Name: Apalachicola River .8 miles upstream Owl Creek **Date:** 8-8-19 (mm/dd/yyyy)

WIN/ Field ID: G2TLHR0042 **WBID:** 375D **Latitude:** 29.9822 (Decimal Degrees)

County: Liberty/Gulf **ORG ID:** 21FLTLHR **Longitude:** 85.0272 (Decimal Degrees)

Receiving Body of Water: Inter-coastal/Gulf of Mexico **RQ-** 2019-07-01-51

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Jade Burtchett	✓		✓		N/A
Chris Green		✓		✓	✓

Sampling Equipment
- [x] Sample Container
- [ ] Van Dorn
- [ ] Pole
- [ ] Carboy
- [x] Syringe
- [ ] Dipper
- [ ] Other
- Depth Measured with Pro DSS
- Equipment ID 153484

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

Water Level: Dry/ Pooled/ Low / Normal / High / Flooded **Meter ID#** 153484 **Matrix:** Fresh / Marine / DI

Photos: Yes / No **Flow:** No Flow / Intestital / Flowing / NA **Tide:** Rising/ Falling/ Slack/ NA **Tide Times:** High — Low —

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPTh)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1130	12.1	0.3	1.0	6.16	81.6	6.97	0.06	133.1	30.0
CEN	1130		10.0		6.14	81.3	6.88	0.06	131.2	30.0

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

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

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	[ ] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	[x] Ice [x] H_2SO_4	SA 9010030	4-10-20	[x] <2
Metals	[ ] W-ICPMS [ ] W-ICP	[x] Ice [x] HNO_3	NA9099030	4-9-20	[x] <2
Filtered Nutrients	[ ] W-PO4-F [ ] Field Filtered 0.45 µm Filter	[x] Ice			
Chlorophyll	[ ] CHLSUITE-W	[x] Ice			
Physical/Aggregate (Fresh)	[ ] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	[x] Ice			
Physical/Aggregate (Marine)	[ ] Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	[ ] Ice			
Macroinvertebrates	[ ] MI-FW-QLDC	[ ] Formalin			
Periphyton	[ ] ALGAE-ID	[ ] Ice			
Microbiology	[ ] E Coli [ ] F Coli [ ] Enterococci	[x] Ice			
Molecular	[ ] PCR-FILTER [ ] PCR-BacR [ ] PCR-GULL2 [ ] PCR-HF183 [ ] PCR-DG3 [ ] PCR-GFD	[ ] Ice			
Tracers	[ ] W-E8321-DI [ ] W-E8321-MS	[ ] Ice			
Pesticides	[ ] W-PSNP-TQ [ ] W-CT-CL-R [ ] W-E8321-DI [ ] W-PCL-SQ-R [ ] WE8321-MS [ ] W-CARB-AA	[ ] Ice			
Phytoplankton	[ ] DTY-QN-C [ ] PKD-QN-C	[ ] Ice			

Place Preservative Sticker(s) Here (If Available)

Notes: Pro DSS cord 10 meters

Place Label Here

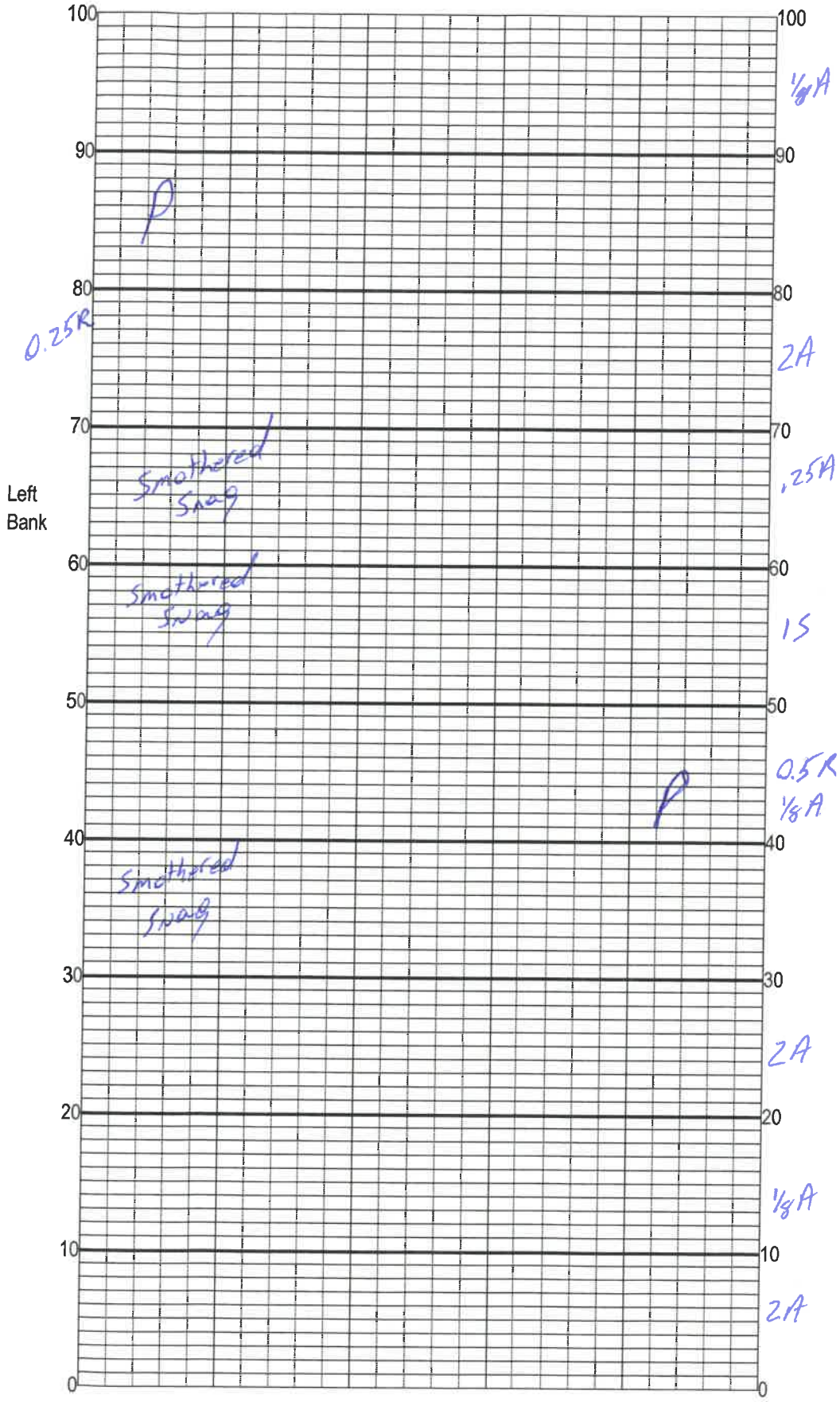
Signature: [signature] **Date:** 8-8-19

LIMS EVENT ID: **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 CG 8-9-2019 (Initials/Date) **Migrate Data to WIN:** (Initials/Date) **Verify Data in WIN:** (Initials/Date)

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: Apalachicola River GZTLHR0042

Date: 8-8-2019

Sampler: Chris Green

100 m: Latitude	
Longitude	
0 m: Latitude	
Longitude	

Substrates: Code key, draw proportionate habitat abundance.		%
S	Snags	0.001
R	Roots/undercut banks	0.00075
L	Leaf Packs (or mats)	~~0~~
A	Aquatic Macrophytes	0.007 ~~0~~
Q	rock	~~0~~
P	Pools	total # observed = ____ # range expected = ____

Average width 100 m
Average depth 12.1 m

Velocity measured at 0.5 meter mark.

WQ & chemistry taken at 50 meter mark.

Habitat Smothering: Sand
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:

S - ~~0.01~~ 0.001
R - ~~0~~ ~~0.001~~ 0.00075
L - 0
A - 0.007

62-160.800, F.A.C

Revision Date: January 2017

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21FLTLHR LATITUDE _____
COUNTY Liberty/Gulf ~~STORET~~ # G2TLHR0042 LONGITUDE _____
DATE 8-8-2019 TIME 11:00 SAMPLING AGENCY FDEP 8034/21FLTLHR CG
SITE NAME Apalachicola River 0.8 miles upstream Owl Greeck
FIELD ID/NAME G2TLHR0042 RECEIVING BODY OF WATER Gulf of Mexico

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
100							

Landscape Development Intensity Index (LDI) _____

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

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

Width of Riparian Vegetation (m) on Each Buffer Side
Left Bank : >18m Right Bank : >18m

Hydrologic Modification Score (per FT 3101) _____

High Water Mark: 3.5 (m) + 12.1 (above present water level) = 15.6 (present depth) (above bed)

Artificially Impounded ☒ Yes ☐ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
100 m wide

0.062 m/s	0.5 m/s	0.071 m/s
0.4 m deep	12.1 m deep	0.3 m deep

Artificially Channelized : ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ Recent, severe

Canopy Cover % ☒ Open ☐ Heavily Shaded ☐ Lightly Shaded (11-45%) ☐ Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) :

Smothering of Substrates

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☒	☐	☐
Silt Smothering:	☐	☒	☐	☐
Algae Smothering:	☒	☐	☐	☐

SUBSTRATE TYPE

Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	0.001		
Undercut Banks / Roots	0.0007		
Leaf Packs or Mat	0		
Aquatic Vegetation	0.007		
Rock or Shell Rubble..			
Sand.....	99.99		
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 :	0.3 CG ~~12.1~~	30.0	6.97	6.16	81.6	133.1	0.06	1.0
Mid:								☐ VOB
Bottom	10.0	30.0	6.88	6.14	81.3	131.2	0.06	TOTAL DEPTH 12.1

Meter ID: 153484

Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐

Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number: _____ Exp: _____

Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐

Algae Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
Lot Number: _____ Exp: _____

Clarity Clear ☐ Slightly Turbid ☐ Turbid ☒ Opaque ☐

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☐	☐	☐	☒
Aquatic Plants:	☐	☒	☐	☐
Iron/Sulfur Bacteria:	☒	☐	☐	☐

System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☒ River

AMBIENT FIELD CONDITIONS / NOTES:

☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM Chris Green / Jade Burtchett

SIGNATURE : CG

DATE : 8-8-2019

Apalachicola River

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:	County:	Date:	Investigators:
G2TLHR0042	Liberty/Gulf	8-8-2019	Chris Green

STORET Station Number: G2TLHR0042

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	N			60	1	N		
	2	N	✓			2	N	✓	
	3		✓			3		✓	
	4		✓			4		✓	
	5		✓	0		5		✓	0
	6		✓			6		✓	
	7		✓			7		✓	
	8	N	✓			8	N	✓	
	9	3				9	3		
10	1	N			70	1	N	✓	
	2	N	✓			2	N	✓	
	3		✓			3		✓	
	4		✓			4		✓	
	5		✓	0		5		✓	0
	6		✓			6		✓	
	7		✓			7		✓	
	8	N	✓			8	N	✓	
	9	3				9	N		
20	1	N			80	1	N		
	2	N	✓			2	6	✓	6
	3		✓			3	N	✓	
	4		✓			4		✓	
	5		✓	0		5		✓	0
	6		✓			6		✓	
	7		✓			7		✓	
	8	N	✓			8	N	✓	
	9	3	✓			9	N		
30	1	N			90	1	3		
	2	N	✓			2	N	✓	
	3		✓			3		✓	
	4		✓			4		✓	
	5		✓	0		5		✓	0
	6		✓			6		✓	
	7		✓			7		✓	
	8	N	✓			8	N	✓	
	9	N				9	N		
40	1	N			100	1	3		
	2	N	✓			2	N	✓	
	3		✓			3		✓	
	4		✓			4		✓	
	5		✓	0		5		✓	0
	6		✓			6		✓	
	7		✓			7		✓	
	8	N	✓			8	N	✓	
	9	N				9	N		
50	1	N							
	2	N	✓						
	3		✓						
	4		✓						
	5		✓	0					
	6		✓						
	7		✓						
	8	N	✓						
	9	N							

Secchi depth	1.0
Estimated?	NO

# points ranked 4-6	0
total points assessed	23
% points ranked 4-6	0

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	✓
Habitat Assessment	✓
SCI/Biorecon	
Water sample	✓
RQ-2019-07-01-51	

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

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%.

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

Waterbody: Apalachicola River | Date: 8-8-19 | County: Liberty/Gulf | Storet Number: 62TLHRC042

Analyst: Chris Green | Signature: CG

Comments: >2m²

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² 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.

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes		✓		✓		✓		✓			
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
If no Dominant or Co-Dominant were selected, indicate with "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata					✓						
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											

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

SAMPLING AGENCY:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
21FLTLHR/8034	62TLHR0042	8-8-19	Gulf of Mexico

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Liberty/Gulf	Apalachicola River (middle)	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 1	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 1	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 20	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 16 - - - - - - - - - - - - - Primary Score 38	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 **Artificial Channelization** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 - - - - - - - - - - - - - Secondary Score 80	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. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

118 **TOTAL SCORE**

Date: 8-8-2019	Analyst: Chris Green	Signature: [signature]

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: 1534844 **RQ-** **Project:** SMP2019

Notes: (1) Always wait for meter to stabilize before recording any readings.
(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification _____

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Barometer mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	J. Burtchett	8/8/19	822	20.4	755.4	9.0	8.98	99.5	–	1.05	P / F	L / F
ICV	"	"	832	20.4	756.0	9.0	8.96	99.2	–	–	P / F	L / F
CCV				26.3	755.5	8.0	8.12	100.6	–	–	P / F	L / F
CCV											P / F	L / F

DO Acceptance criteria from Table ± 0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	J. Burtchett	8/8/19	824	190618 F	06/20	1000	1000	P / F	L / F
ICV	"	"	834	~~2905684~~	05/21	100	102	P / F	L / F
CCV				2905 F63		~~1000~~		P / F	L / F
CCV				2905F63	05/20	100	101	P / F	L / F

Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	J. Burtchett	8/8/19	826	190621E	01/20	7.01	19.5	7.02	-53.2	P / F	L / F
Calibr.	"	"	828	190618A	12/20	4.01	20.5	4.00	121.6	P / F	L / F
Calibr.	"	"	830	190621F	01/20	10.06	20.2	10.06	-221.1	P / F	L / F
ICV	"	"	836	190621F	01/20	10.05	21.3	10.01	-220.3	P / F	L / F
CCV				190618A	12/20	4.01	22.0	3.99	123.0	P / F	L / F
CCV										P / F	L / F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50; mV pH 4 Range +180 ± 50; mV pH 10 Range -180 ± 50;
If mV are recorded: slope from 7 to 10 _____, slope from 4 to 7 _____ (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? YES / NO / NA (not surf. water project)
If **YES**, complete daily Calibr. & ICV below and list date of last quarterly depth verification: _____
If **NO**, what will be used? (circle one) **Secchi Disk Line / Sonar** Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	J. Burtchett	8/8/19	820	0.000	0.000	P / F	L / F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria ± 5 % or ± 0.05m, whichever is greater.

COMMENTS:

Form effective August 1, 2018