



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2020

Meter Passed End

of Day CCV

Yes No

WIN Station Name: Graveyard Branch downstream of Tradewinds Dr.

Date: 03/04/2020

WIN/ Field ID: G4NW0455

WBID: 639

Latitude: 30.50981 (mm/dd/yyyy)

County: Escambia

ORG ID: 21FLPNS

Longitude: 87.17320 (Decimal Degrees)

Receiving Body of Water: Escambia Bay

RQ-2020- 03-09-23 (Decimal Degrees)

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Michael King		X			XX
Heather Schmuki	X		X		

Sampling Equipment	
☒ Sample Container	☐ Van Dorn
☐ Syringe	☐ Pole
☐ Dipper	☐ Other
Depth Measured with Pro DSS	
Equipment ID	
Collection Method	
☒ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other	☐ Gasoline Motor

Water Level: Dry/ Pooled/ Low/ (Normal) / High / Flooded		Meter ID# 155077	
Photos: Yes / No	Flow: No Flow / (Flowing) / NA	Tide: Rising/ Falling/ Slack (NA)	Tide Times: High Low
Biological Samples Collected: None (H) (SCI) (RPS) Algae ID (LVS) LVI Other:			
SBIO ID Numbers:	SBIO-ID: 80846	HA-ID: 16562	RPS-ID: 9556
Macrophyte-ID:		LIMS#:	

Ref:	Date: 26Feb20	SHIPPING:	0.00	Ref:	Date: 26Feb20	SHIPPING:	0.00
Dep:	Wgt: 10.00 LBS	SPECIAL:	0.00	Dep:	Wgt: 10.00 LBS	SPECIAL:	0.00
	DV:	HANDLING:	0.00		DV:	HANDLING:	0.00
	0.00	TOTAL:	0.00		0.00	TOTAL:	0.00
SVcs: PRIORITY OVERNIGHT Master 1278 4012 3351 TRCK: 1278 4012 3351				SVcs: PRIORITY OVERNIGHT Master 1278 4012 3351 TRCK: 1278 4012 3362			

Duplicate Sample	
Time Zone: EST CEN Time:	Field ID: (WIN.ID_DUP)
WIN DMT Activity ID:	

Blank	
Time Zone: EST CEN Time:	Field ID: (Blank Type_DDMYYYY)
DI Source:	Location:
☐ Field Blank ☐ Equipment Blank ☐ Field Cleaned Equipment Blank	Equipment ID:

Signature: H Schmuki	Date: 3/4/20
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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: (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)



RQ-2020- 03-01-23
Customer: NW REC
Project ID: SMP

Collected By: M King
Field Report Prepared By: H Schmitt
Sampling Agency: NW REC

Matrix: ☒ Fresh ☐ Marine										(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 (PPTH)	
3/04/20	1403	8.29	90.1	19.2	6.12	0.1	0.236 ☒ VOB (S)	6.236	110.8	0.05	
Cental Lab please use top row for login purposes											
EST / CST											
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			A
		Lot #		SA9203100		Exp:		07/22/20			
Metals (P-500ML)		☒ W-CPMS ☒ W-HCP ☒ W-HARD				☒ Ice ☒ HNO3*		☒ <2			A
		Lot #		SA9203100		Exp:		07/08/20			
Filtered Nutrients (P125ML)		☒ W-PO4-F ☐ Field Filtered 0.45 µm Filter				☒ Ice					A
		Filter Lot #		16953247		Exp:					
		Syringe Lot #		9029988		Exp:					
Chlorophyll (BP-1L)		☒ CHLSUITE-W				☒ Ice					A
Physical/Aggregate (Fresh) (P-1L)		☒ Alkalinity / ☐ W-F / ☐ W-TSS / ☐ TURBIDITY / ☐ W-CHC / ☐ W-COLOR / ☐ W-S04-IC / ☐ W-TDS				☒ Ice					A
Physical/Aggregate (Marine) (P-1L)		☐ Alkalinity / ☐ W-BR-IC / ☐ W-F / ☐ W-TSS / ☐ TURBIDITY				☐ Ice					
Macroinvertebrates (PJ-2L)		☐ M-FW-QLDC				☐ Formalin					
Periphyton (PT-50ML)		☐ ALGAE-ID				☐ Ice					
Microbiology (Contract Lab Bottle)		☒ E Coli ☐ F Coli ☐ Enterococci				☒ Ice					A
Molecular (QPCR-P-500ML)		☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3 ☐ PCR-GJLL2 ☐ PCR-GPD				☐ Ice					
Tracers (BG-500ML)		☒ W-E8321-DI ☒ W-E8321-MS				☒ Ice					A
Pesticides (BG-500ML) (BG-1L)		☐ W-E8321-DI ☐ W-E8321-MS ☒ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-PCL-SQ-R ☐ W-CARB-AA (9 ml of MCAA** Buffer Solution)				☒ Ice					A
						☐ Ice					
Relinquished By:		Date/Time		Shipping Method		Number of Coolers Shipped:		Received By:		Date/Time:	

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

Email Submittal form to : lab.receiving@floridadep.gov.

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

SAMPLE ID 80846 ORG ID 21FLPNS LATITUDE 30.50981
 COUNTY ESCAMBIA STORET # 64NW0455 LONGITUDE 87.17320
 DATE 3/4/2020 TIME 1403 SAMPLING AGENCY FDEP
 SITE NAME Graveyard Branch downstream of TRADEWINDS DR
 FIELD ID/NAME 64NW0455 RECEIVING BODY OF WATER ESCAMBIA BAY

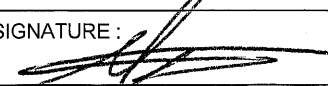
RIPARIAN ZONE / STREAM FEATURES

RA-2020-03-09-23

WBID 639

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐						Landscape Development Intensity Index (LDI) N/A	
Local Watershed Erosion (select one): ☐ None ☐ Slight ☐ Moderate ☒ Heavy Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy						Typical Width (m) Depth (m)/Velocity (m/sec) Transect 3 m wide 0.33 m/s 0.33 m/s 0.33 m/s 0.2 m deep 0.4 m deep 0.3 m deep	
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>715</u> Right Bank: <u>718</u>				Hydrologic Modification Score (per FT 3101) <u>7-8</u>			
High Water Mark: <u>1.0</u> + <u>0.4</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>4</u> <u>5</u> Undercut Banks / Roots <u>4</u> <u>5</u> Leaf Packs or Mat <u>2</u> <u>5</u> Aquatic Vegetation Rock or Shell Rubble.. Sand..... <u>90</u> <u>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: Mid: <u>0.1</u> <u>19.2</u> <u>6.12</u> <u>8.29</u> <u>90.1</u> <u>110.8</u> <u>0.05</u> <u>0.4</u> Bottom: Meter ID: <u>155077</u> Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SA 920110</u> Exp: <u>07/22/20</u> Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp: System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐					
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☐ ☒ ☐ ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐ Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐					
AMBIENT FIELD CONDITIONS / NOTES: <u>raining</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.			SAMPLING TEAM <u>MIKE KING</u> <u>HEATHER SCHMUKI</u>					
SIGNATURE: 			DATE: <u>3/4/20</u>					

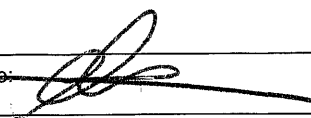
DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDGP WW ROL</u>		STORET STATION NUMBER: <u>G4NW0455</u>	DATE (MM/DD/YY): <u>03/04/20</u>	RECEIVING BODY OF WATER: <u>ESC BAY</u>
REMARKS:	COUNTY: <u>ESCAMBIA</u>	LOCATION: <u>GRAVEYARD BRANCH</u>	FIELD ID/NAME: <u>G4NW0455</u>	

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>11</u>	20 19 18 17 16	15 14 13 12 <u>(11)</u>	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>8</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 <u>(8)</u> 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 <u>(20)</u> 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>6</u> ----- Primary Score <u>45</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 <u>(6)</u>	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components Artificial Channelization <u>16</u>	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 <u>(16)</u>	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 <u>5</u> Left Bank <u>4</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull 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. <u>(5)</u> <u>(4)</u>	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 <u>10</u> Left Bank <u>8</u>	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m <u>(8)</u> 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 <u>6</u> Left Bank <u>5</u> ----- Secondary Score <u>44</u>	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 <u>(6)</u>	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. <u>(5)</u> 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

89

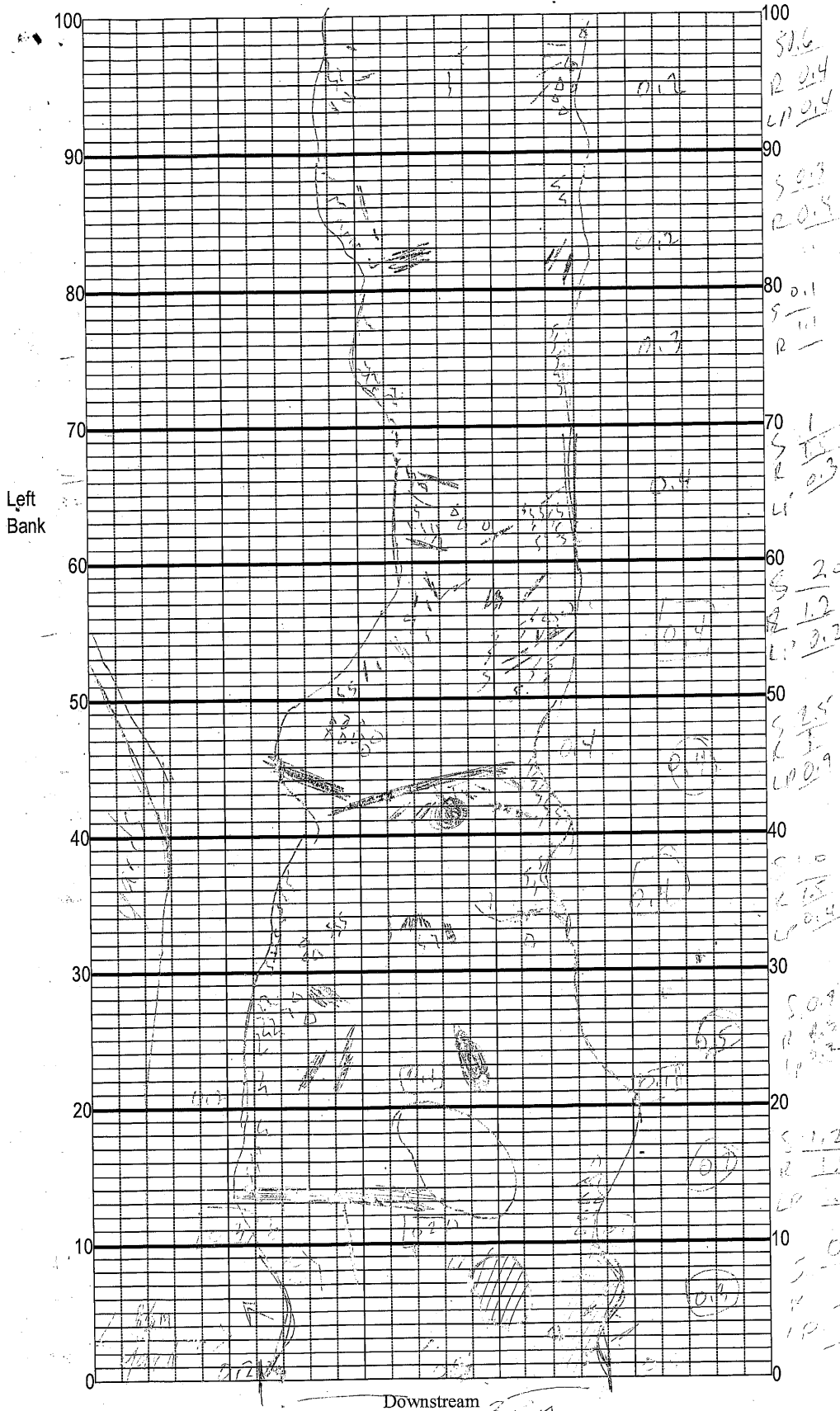
TOTAL SCORE

Date: <u>3/4/20</u>	Analyst: <u>Mike King</u>	Signature: 
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DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Graveyard Branch</u>					County: <u>Eschambia</u>		Date: <u>3/4/2020</u>		Investigators: <u>MIKE KING / H. SCHMURT</u>		
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	STORET Station Number: <u>64NW0455</u>	
0	1	3	N		60	1	N	N		Secchi depth <u>0.24</u> Estimated? ☒	
	2	N				2					
	3					3					
	4					4					
	5					5					69
	6					6					
	7					7					
	8					8					
	9					9					
10	1	N	N		70	1	N	N		# points ranked 4-6 <u>0</u> total points assessed <u>99</u> % points ranked 4-6 <u>0</u>	
	2					2					
	3					3					
	4					4					
	5					5					70
	6					6					
	7					7					
	8					8					
	9					9					
20	1	N	N		80	1	N	N		Check accompanying data collected at same site/date: Algal mat sample ☐ Linear Veg Survey ☒ Habitat Assessment ☒ SC/Biorecon ☒ Water sample ☒ RQ- <u>2020-03-09-23</u>	
	2					2					
	3					3					
	4					4					
	5					5					60
	6					6					
	7					7					
	8					8					
	9					9					
30	1	N	N		90	1	N	N		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	
	2					2					
	3					3					
	4					4					
	5					5					80
	6					6					
	7					7					
	8					8					
	9					9					
40	1	N	N		100	1	N	N		SBIO ID 80846 RPS ID 9556	
	2					2					
	3					3					
	4					4					
	5					5					80
	6					6					
	7					7					
	8					8					
	9					9					
50	1	N	N		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										
	3										
	4										
	5			69							
	6										
	7										
	8										
	9										

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



Location: Graveyard Branch
 Date: 3/4/2020
 Sampler: M. King / H. Smokey

100 m: Latitude 30.50942
 Longitude 87.17405
 0 m: Latitude 30.50942
 Longitude 87.17320

Substrates: Code key, draw proportionate abundance.		%
	Snags	10.1
	Roots/undercut banks	10.7
	Leaf Packs (or mats)	2
	Aquatic Macrophytes	4.6
	Pools	total # observed = 1 # range expected = 3

Average width 2.5 m
 Average depth 0.4 m

Velocity measured at 90 meter mark.

WQ & chemistry taken at 100 meter mark.

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

Plants observed / other notes:

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

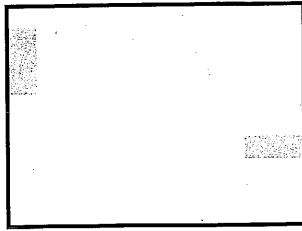
Waterbody: GRAVEYARD BRANCH	Date: 3/4/20	County: FSCAMISSIA	Storet Number: GYNW0453
Analyst: MIKING H. SCHMULLE	Signature:		
Comments: VEG < 2m ²			

[illegible]

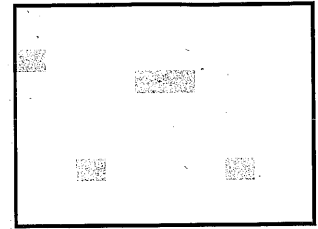
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

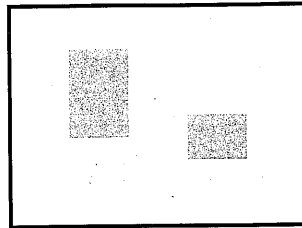
5% Macrophyte Coverage



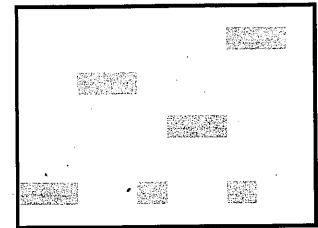
5% Macrophyte Coverage



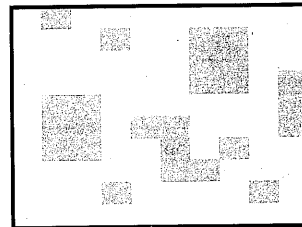
10% Macrophyte Coverage



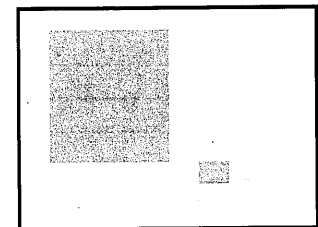
10% Macrophyte Coverage



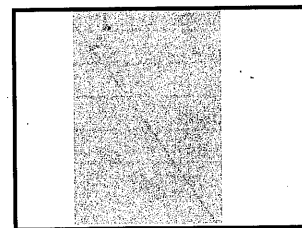
25% Macrophyte Coverage



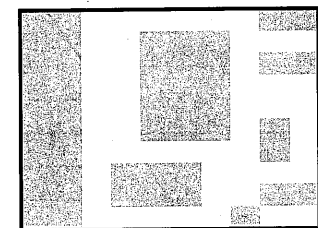
25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage



Station: Graveyard Branch downstream of Tradewinds Dr.
 WIN ID G4NW0455
 Visit ID 80846
 Project SMP
 RQ-2020-03-09-23
 LIMS ID 2162515

Sampling Date 3/4/2020
 County Escambia
 Receiving Waters Escambia Bay

Variable Name	Rep 1	Rep 2
AmphipodPct	0.69	0
ChironPct	50.34	59.03
ChironTaxa	12	10
ClingerTaxa	6	6
ColeopteraPct	5.52	6.94
DecapodaPct	0	0
DipteraPct	66.9	76.39
Dominant Taxon	Rheotanytarsus exiguus grp.	Rheotanytarsus exiguus grp.
DominantPct	28.97	38.89
EPTTaxa	1	1
EphemPct	0	0
EphemTaxa	0	0
FFBrowGrazPct	0	0
FFEpiColDepPct	21.38	19.1
FFParasitePct	0	0
FFPIPiercePct	1.03	0.35
FFPredCarnPct	3.79	3.82
FFScavPct	7.24	2.43
FFScrapePct	5.17	4.51
FFShredPct	3.79	2.78
FFSubColDepPct	0	4.17
FFSuspFiltPct	57.59	62.85
FFUnknownPct	0	0
GastropodaPct	2.07	0.69
IsopodaPct	14.48	4.86
LongLivedTaxa	0	0
OdonataPct	2.07	3.47
OligocPct	0	4.17
OligocTaxa	0	3
PelecypodaPct	0	0
PlecoPct	0	0
PolychaetePct	0	0
PolychaeteTaxa	0	0
SCI_2012_Rep	42.66921406	38.94726526
SensitiveTaxa	5	4
TanytarsiniPct	39.31	49.31
TotalDBar	0	0
TotalDensity	0	0
TotalNind	145	144
TotalTaxa	28	25
TrichopPct	7.59	3.47
TrichopTaxa	1	1
TrombidPct	0	0
VeryTolerantPct	5.52	3.47

SCI_2012_AVG	40.81
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