



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Wakulla At Boat Tram

Date: 10/23/2019
(mm/dd/yyyy)

WIN/ Field ID: 44059

WBID: 1006

Latitude: 30.23458
(Decimal Degrees)

County: Wakulla

ORG ID: 21FLWQA

Longitude: -84.29447
(Decimal Degrees)

Receiving Body of Water: St. Marks River

RQ- 2019-10-21-23

Sampling Team Members						WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Blake Spencer							X		X	X
Evelyn Becerra						X		X		
Mike Eckles										

Sampling Equipment									
☒ Sample Container	☐ Van Dorn	☐ Pole							
☐ Carboy	☒ Syringe								
☐ Dipper	☐ Other								
Depth Measured with <u>Sonar #1</u>									
Equipment ID									

Collection Method									
☐ Wading	☐ Canoe/Kayak								
☐ From Shore	☐ Electric Motor								
☐ Other	☒ Gasoline Motor								

Water Level: Dry/ Pooled/ Low / Normal / High / Flooded
Meter ID# 18J104543 Matrix: Fresh / Marine / DI
Photos: Yes / No Flow: No Flow / Intestinal / Flowing / NA Tide: Rising/ Falling/ Slack/NA Tide Times: High NA Low NA

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (umhos/cm)	Temp. (C°)
EST	<u>1214</u>	<u>1.1</u>	<u>0.3</u>	<u>NOB</u>	<u>4.01</u>	<u>45.2</u>	<u>7.56</u>	<u>0.16</u>	<u>332.9</u>	<u>21.3</u>
CEN										

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

SBIO ID Numbers: SBIO-ID: 80422 HA-ID: 16483 RPS-ID: 9524 Macrophyte-ID: 11594 LIMBS#: 2130934

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / ☒ W-NO2NO3 / ☒ W-TKN / ☒ W-TOC / ☒ W-S-A-TP	☒ Ice ☒ H2SO4	<u>SA9129100</u>	<u>05/09/20</u>	☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO3	<u>NA9189080</u>	<u>07/08/20</u>	☒ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 um Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / ☒ W-F / ☒ W-TSS / ☒ TURBIDITY / ☒ W-CH-IC / ☒ W-COLOR / ☒ W-SO4-IC / ☒ W-TDS	☒ 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	☒ 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			

Notes:
SCI
SCI Kit
Algal ID
RPS and LVS

WIN ID / Field ID: 44059
Location: Wakulla River at boat tram

Signature: [Signature] Date: 10/23/19

LIMS EVENT ID: WAS-SECT-2019-10-23-01

WIN Import ID:

Enter Field Parameters, Verify Station ID In LIMS DMT: 882 11/9/20

QC Station ID, Field Parameters In LIMS DMT: AWM 2/7/20

Scan/Save Field Sheets

Migrate Data to WIN:

Verify Data In WIN:

(Initials/Date)

(Initials/Date)

(Initials/Date)

Entered by: ~~AK~~ 11/9/20
 QC'd by: AUM 2/17/20
 Verified CM 2/1/20

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

HA ID: 16483

SAMPLING AGENCY: Florida Department of Environmental Protection		STORET STATION NUMBER: 44059	DATE (MM/DD/YYYY): 10/23/19	RECEIVING BODY OF WATER: St. Marks River
REMARKS: SBIO ID: 80422	COUNTY: Wakulla	LOCATION: Wakulla River at Boat Tram		FIELD ID/NAME: 44059

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Snag Leaf Aquatic Vegetation Roots Rock Substrate Diversity <u>7</u> ✓	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 <u>20</u> ✓ <u>>30</u> %	Major productive habitat present at site (>30% 27.2% 25.8% 24.4% 26.6%) 20 19 18 17 16	Major productive habitat, by aerial extent (21.6% 20.2% 18.8% 17.4% 16%) 15 14 13 12 11	6% to 15% major productive habitat (15% 13% 11% 9% 6%) 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>20</u> ✓ <u>0.33</u> m/s	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> ✓ Primary Score <u>57</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 Artificial Channelization <u>20</u> ✓	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 in the past (>25 yrs) but mostly recovered. May have spoil banks. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. May have spoil banks. 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>10</u> ✓ Left Bank <u>10</u> ✓ If Banks are PipeClay, BedRock or Concrete at Bank full: Optimal	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. (+,+,+) 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 root zone with raw, eroded areas. (-,-,-) 3 2 1
Riparian Buffer Zone Width Right Bank <u>10</u> ✓ Left Bank <u>10</u> ✓	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6 (18m 15m 12m)	Width of vegetation 6 to 12 m. human activities close to system 5 4 (9m)	Less than 6 m of buffer zone due to intensive human activities 3 2 1 (6-5m) (4-3m) (<2m)
Riparian Zone Vegetation Quality Right Bank <u>10</u> ✓ Left Bank <u>10</u> ✓ Secondary Score <u>80</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 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

137 ✓

TOTAL SCORE

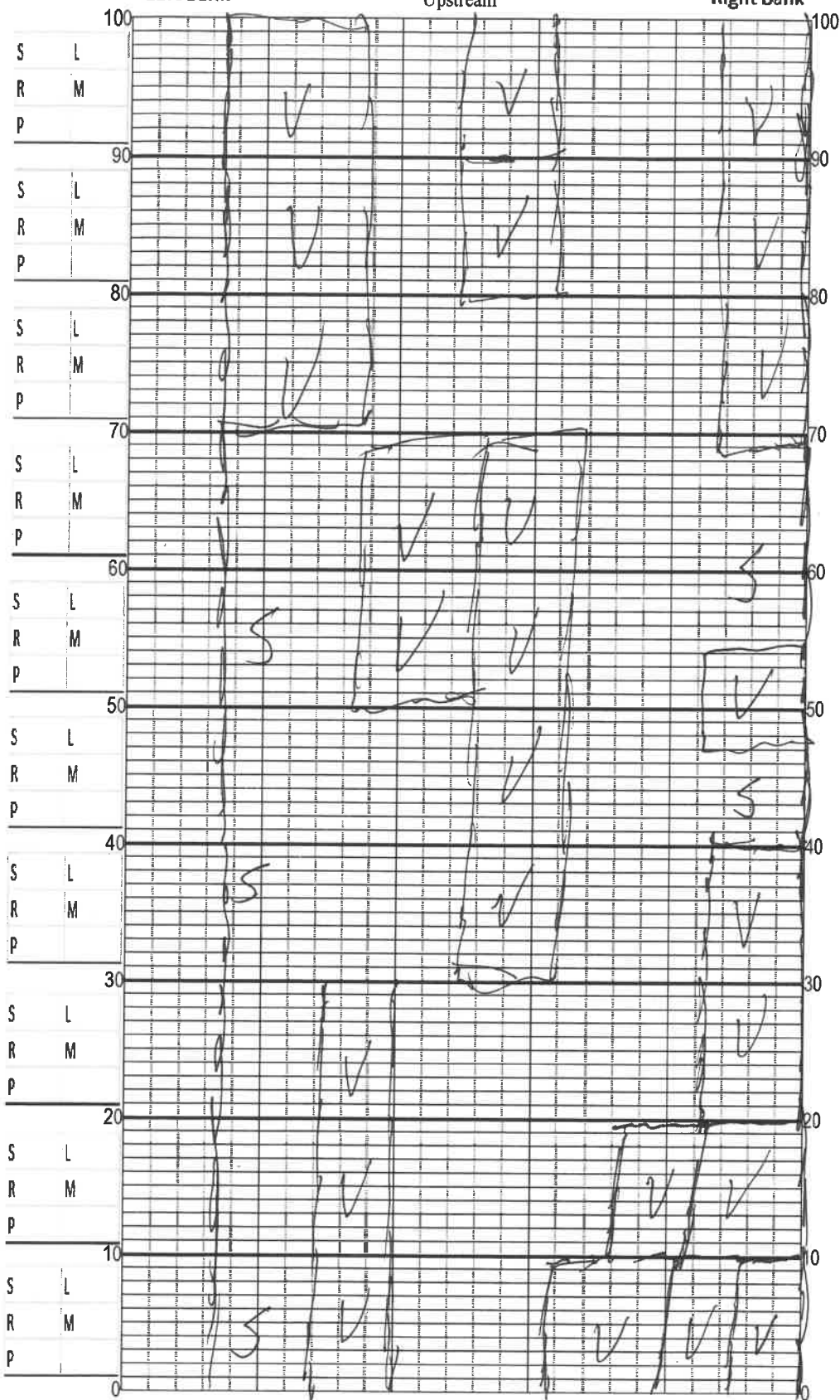
Date: 10/23/19	Analyst: Blake Spencer	Signature: 
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

Left Bank

Upstream

Right Bank



Location: Wakulla River at Boat Tram

Date: 10/23/19

Sampler: Blake Spencer

100 m: Latitude 30.234248
Longitude ~~84.294304~~ 84.294304
0 m: Latitude 30.234197
Longitude ~~84.292799~~

Substrates: Code key, draw proportionate habitat abundance. %

☐ S	Snags	<u>19%</u>
☐ R	Roots/undercut banks	_____
☐ L	Leaf Packs (or mats)	_____
☐ M	Aquatic Macrophytes	<u>230%</u>
☐ Rc	Rock	_____
☐		_____
☐ P	Pools	total # observed = _____ # range expected = _____

Average width 85 m

Average depth 1.5 m

Velocity measured at 50 meter mark.

Velocity 0.33 m/s

WQ & chemistry taken at 50 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.

Notes/Plants Observed:

2m² = 13.2 Sweeps

Meter Mark	Depth (m)	Width (m)	Velocity Measurement (Sec)
Avg.			

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

Expected Number of Pools

$$\left(\frac{100}{12 * \text{W}} \right) * 1 =$$

$$\left(\frac{100}{12 * \text{W}} \right) * 2 =$$

# of Sweeps	Conversion	m ²	%
Snag	÷ 8	m ²	
Root	÷ 8	m ²	
Leaf	÷ 8	m ²	
Macrophyte	÷ 8	m ²	
Rock	÷ 8	m ²	
Total Available Habitat		m ²	
Total Area		m ²	
Total Unavailable Habitat		m ²	

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

Entered by: 11/9/20
NonField cn 2/10/20

SAMPLE ID 80422 ORG ID 21FLWQA LATITUDE 30.23458
 COUNTY Wakulla STORET # 44059 LONGITUDE -84.29447
 DATE 10/23/19 TIME _____ SAMPLING AGENCY FAEP
 SITE NAME Wakulla at Boat Tram
 FIELD ID/NAME 44059 RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>78</u> Silviculture _____ Field/Pasture <u>2</u> Agricultural <u>1</u> Residential <u>17</u> Commercial <u>1</u> Industry <u>1</u> Other (Specify) <u>1 (water)</u>							Landscape Development Intensity Index (LDI) <u>1.2</u>
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 _____ m wide _____ m/s <u>0.33</u> m/s _____ m/s _____ m deep <u>1.1</u> m deep _____ m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>7/8</u> Right Bank: <u>7/8</u>				Hydrologic Modification Score (per FT 3101) <u>3-4</u>			
High Water Mark: <u>0.1</u> + <u>1.1</u> = <u>1.2</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%</u> _____ Undercut Banks / Roots _____ Leaf Packs or Mat _____ Aquatic Vegetation <u>730%</u> _____ Rock or Shell Rubble _____ Sand _____ 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>21.3</u> <u>7.56</u> <u>4.01</u> <u>48.2</u> <u>332.9</u> <u>0.16</u> _____ Mid: _____ Bottom: _____ Meter ID: <u>18J104543</u> <u>1.1</u> Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>See Field</u> Exp: <u>Sheet</u> Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>ICE</u> Exp: _____ Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) _____ 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) ☒ <u>Spring Run</u> AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.		
SAMPLING TEAM <u>Blake Spencer, Evelyn Becerra, Mike Fables</u>			SIGNATURE: <u>[Signature]</u>		DATE: <u>10/23/19</u>

Entered by: ~~688~~ 1/9/20
 QC by: Ann 2/7/20
 Authorized on 2/16/20

SPIO: 80422 RPS: 9524

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Wakulla at Boat Tram</u>					County: <u>Wakulla</u>		Date: <u>10/23/19</u>		Investigators: <u>Blake Spencer + Evelyn Barerra</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	
0 ✓	1	X	Y	0 ✓	60 ✓	1	N	Y	0 ✓	
	2	G	Y							
	3	N	Y							
	4	N	Y							
	5	G	Y							
	6	N	Y							
	7	N	Y							
	8	G	Y							
	9	N	Y							
10 ✓	1	X	Y	0 ✓	70 ✓	1	X	Y	0 ✓	
	2	G	Y							
	3	G	Y							
	4	G	Y							
	5	N	Y							
	6	N	Y							
	7	G	Y							
	8	G	Y							
	9	G	Y							
20 ✓	1	X	Y	0 ✓	80 ✓	1	X	Y	0 ✓	
	2	G	Y							
	3	G	Y							
	4	G	Y							
	5	G	Y							
	6	N	Y							
	7	N	Y							
	8	G	Y							
	9	N	Y							
30 ✓	1	X	Y	0 ✓	90 ✓	1	X	Y	0 ✓	
	2	N	Y							
	3	G	Y							
	4	G	Y							
	5	G	Y							
	6	G	Y							
	7	G	Y							
	8	N	Y							
	9	G	Y							
40 ✓	1	X	Y	0 ✓	100 ✓	1	X	Y	0 ✓	
	2	G	Y							
	3	G	Y							
	4	G	Y							
	5	G	Y							
	6	N	Y							
	7	G	Y							
	8	N	Y							
	9	G	Y							
50 ✓	1	N	Y	0 ✓		1	X	Y	0 ✓	
	2	N	Y							
	3	G	Y							
	4	N	Y							
	5	G	Y							
	6	N	Y							
	7	G	Y							
	8	G	Y							
	9	N	Y							

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%.

STORET Station Number:

44059

Secchi depth 1.1
 Estimated? N

points ranked 4-6 46
 total points assessed 86
 % points ranked 4-6 54%

(Exclude X's)

Check accompanying data collected at same site/date.

Algal mat sample ☒
 Linear Veg Survey ☒
 Habitat Assessment ☒
 SCI/Biorecon ☒
 Water sample ☒

RQ- 2019-10-21-23

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

(> 3 considered smothered)

(N to 1 mm)

(3) 6mm

(4) 20mm

(5) 10cm

(6)

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

Waterbody: Wakulla River at Boat Tram

Date: 10/23/19

County: Wakulla

Storet Number: 44059

Analyst: Blake Spencer

Signature: 

Comments: BMAP Sampling

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.

HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Alternanthera philoxeroides												Myriophyllum heterophyllum											
Bacopa caroliniana												Najas guadelupensis											
Bacopa monnieri												Nuphar luteum											
Bidens mitis												Orontium aquaticum											
Boehmeria cylindrica												Panicum hemitomon											
Centella asiatica												Panicum repens											
Ceratophyllum demersum												Panicum rigidulum											
Chara												Peltandra virginica											
Cicuta maculata	✓	X	X	X	X	X	X	X	X	X		Pistia stratioides											
Cladium jamaicense	✓	X	X	X	X	X	X	X	X	X		Polygonum glabra	✓	X	X	X	X	X	X	X	X	X	
Colocasia esculenta												Polygonum hydropiperoides											
Commelina diffusa												Polygonum punctatum	✓	X	X	X	X	X	X	X	X		
Commelina virginica												Pontedaria cordata	✓	X	X	X	X	X	X	X	X		
Crinum americanum												Potamogeton illinoensis											
Diodia virginiana												Rhynchospora inundata	✓									X	
Eichhornia crassipes												Rosa palustris						X	X	X	X		
Eleocharis (wispy viviparous)												Ruellia simplex	✓					X	X	X	X		
Hydrilla verticillata												Rumex verticillatus	✓			X			X	X			
Hydrocotyle	✓	X	X	X	X					X		Sacciolepis striata											
Hygrophila polysperma												Sagittaria kurziana	✓	X	X	X	X	X	X	X	X		
Hymenocallis												Sagittaria lancifolia	✓	X	X	X	X	X	X	X	X		
Lachnanthes caroliniana												Sagittaria latifolia											
Landoltia punctata												Salvinia minima											
Lemna	✓	X	X	X	X	X	X	X	X	X		Samolus parviflora											
Limnophila sessiflora												Saururus cernuus	✓									X	
Ludwigia leptocarpa												Scirpus (schenoplectus) californicus	✓	X	X	X	X	X	X	X	X		
Ludwigia palustris												Sparganium americanum											
Ludwigia peruviana												Typha	✓	X	X								
Ludwigia repens	✓	X	X	X	X	X	X	X	X	X		Vallisneria americana	✓						X				
Luziola fluitans												Zizania aquatica											
Micranthemum glomeratum												<i>lobelia cardinalis</i>	✓	X		X					X		
Micranthemum umbrosum																							
Mikania scandens	✓	X	X	X	X	X	X	X	X	X													
Myriophyllum aquaticum																							
If no Dominant or Co-Dominant were selected, indicate with "X"																							
Indicate % cover macrophytes per section												Notes:											
0-5% Macrophyte Coverage																							
>5 and ≤10% Macrophyte Coverage																							
>10 and ≤25% Macrophyte Coverage																							
>25 and ≤50% Macrophyte Coverage												X X X X X X X X X X											
> 50% Macrophyte Coverage																							

□ < 2m2

Entered by: ~~888~~ 1/9/20

QC by: ~~AWM~~ 2/7/20

Revision Date: March 1, 2014

Authorized CM 2/16/20

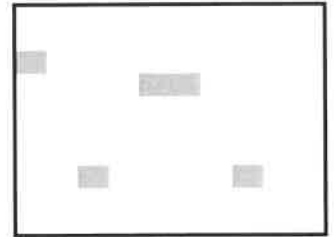
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

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

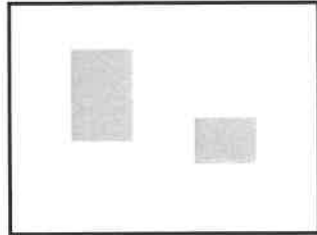
5% Macrophyte Coverage



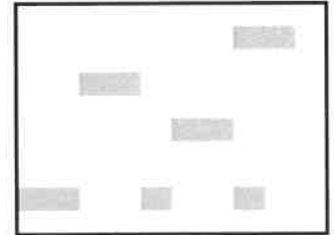
5% Macrophyte Coverage



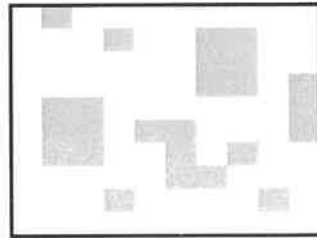
10% Macrophyte Coverage



10% Macrophyte Coverage



25% Macrophyte Coverage



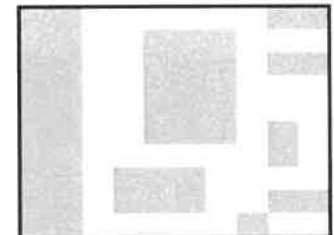
25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage



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: 18J104543

RQ-

Project: WAKWILA BMAP

- 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	Baro-meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Evelyn Becerra	10/23/19	7:32	20.1	760.0	9.07	9.07	100.0	-	1.0460	(P) F	(L) F
ICV			7:35	20.2	760.1	9.06	9.05	100.0	-	-	(P) F	(L) F
CCV			15:21	21.6	759.5	8.81	8.81	100.1	-	-	(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 μ hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.	Evelyn Becerra	10/23/19	7:45	190618F	06/20	1000	1000	(P) F	(L) F
ICV			7:49	2908081	08/21	100	104.6	(P) F	(L) F
CCV			15:26	190618F	06/20	1000	1023	(P) F	(L) F
CCV								P / F	L / F

Conductivity Acceptance criteria $\pm 5\%$

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.	Evelyn Becerra	10/23/19	7:59	190618B	12/2020	7.02	20.8	7.02	-50.9	(P) F	(L) F
Calibr.			8:05	190618A	12/2020	4.00	21.0	4.00	123.1	(P) F	(L) F
Calibr.			8:09	190618C	12/2020	10.04	21.1	10.04	-217.3	(P) F	(L) F
ICV			8:11	190618C	12/2020	10.04	21.1	10.01	-217.2	(P) F	(L) F
CCV			15:29	190618A	12/2020	4.00	21.2	4.006	118.5	(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 $+180 \pm 50$;

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	Evelyn Becerra	10/23/19	8:10	0.00	0.00	(P) F	(L) F

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

COMMENTS:

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Customer: WAS-SECT

Requester: Curtis Musson

Field Report Prepared By: Blake Spencer

Project ID: BMAP

Collected By: Blake Spencer, Evelyn Becerra, Mike EcklesSampling Agency: FAEP

Location		WIN ID / Field ID →  44059		☐ Comp ☒ Grab	Collection (comp begin or grab) Date <u>10/23/19</u> Time <u>12:14</u>		☒ Eastern ☐ Central	Composite end Date _____ Time _____		Bottle Group(s) (See pg 2) A	
Field ID				Matrix (type, e.g., Salt, Fresh, etc) <u>Fresh</u>		Diss. Oxygen <u>45.2</u>		☐ mg/L ☒ % sat	Total Res. Chlorine (mg/L) _____		
WIN/STORET #		Location  Wakulla River at boat tram		Temp (C) <u>21.3</u>		pH <u>7.56</u>		Sample Depth <u>0.3</u>	☐ ft ☒ m		Sp. Conductance (umho/cm) <u>332.9</u>
Latitude		☐ dd ☐ dms	Longitude		☐ dd ☐ dms	Salinity (ppt) <u>0.16</u>		Comments			
Location		WIN ID / Field ID →  44059		☐ Comp ☒ Grab	Collection (comp begin or grab) Date <u>10/23/19</u> Time <u>11:35</u>		☒ Eastern ☐ Central	Composite end Date _____ Time _____		Bottle Group(s) B	
Field ID				Matrix (type, e.g., Salt, Fresh, etc) <u>Biological</u>		Diss. Oxygen _____		☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L) _____		
WIN/STORET #		Location  Wakulla River at boat tram		Temp (C) _____		pH _____		Sample Depth _____	☐ ft ☐ m		Sp. Conductance (umho/cm) _____
Latitude		☐ dd ☐ dms	Longitude		☐ dd ☐ dms	Salinity (ppt) _____		Comments <u>2 SCI Jugs / 1 algal ID</u>			
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: <u>Blake Spencer</u>	Date/Time <u>10/23/19 15:43</u>	Shipping Method <u>Hand Delivered</u>	Number of Coolers Shipped: <u>1</u>	Received By: <u>Tan McCoy</u>	Date/Time <u>10/23/19 15:44pm</u>
--	------------------------------------	--	--	----------------------------------	--------------------------------------

Group: A	Bottle Type:	P-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ALKALINITY						
	TURBIDITY						
	W-CL-IC						
	W-COLOR						
	W-F						
	W-SO4-IC						
	W-TDS						
	W-TSS						
Group: A	Bottle Type:	BP-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	CHLSUITE-W						
Group: A	Bottle Type:	P-120ML-WC-THI	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	2
	ECOLI-18QT						
Group: A	Bottle Type:	BG-500ML	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	W-E8321-DI						
	W-E8321-MS						
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	HNO3	Enter Number of Bottles Sent to Lab	1
	W-ICP						
	W-ICPMS						
					HNO3 LOT# NA9189080 F-EXP: 07/08/20		
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	ICE And H2SO4	Enter Number of Bottles Sent to Lab	1
	W-NH3						
	W-NO2NO3						
	W-S-A-TP						
	W-TKN						
	W-TOC						
Group: A	Bottle Type:	P-125ML	# of Bottles: 1	Preservative:	FILTER-ICE	Enter Number of Bottles Sent to Lab	1
	W-PO4-F						
Group: A	Bottle Type:	BG-1L	# of Bottles: 4	Preservative:	ICE	Enter Number of Bottles Sent to Lab	4
	W-PSNP-TQ						
Group: B	Bottle Type:	PT-50ML	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ALGAL_ID						
Group: B	Bottle Type:	PJ-2L	# of Bottles: 2	Preservative:	Formalin	Enter Number of Bottles Sent to Lab	2

Group: B

Bottle Type:

PJ-2L

of Bottles: 2

Preservative:

Formalin

Enter Number of Bottles Sent to Lab

2

MI-FW-QLDC

Cooler Packing Worksheet for Request: RQ-2019-10-21-23

Wakulla BMAP

Ship Cooler On: 10/17/2019

Customer/Project: WAS-SECT/BMAP

Assigned To: MCCOY_I

Requester: Curtis Musson

Priority: 3

850-245-8453

2600 Blair Stone Rd

Tallahassee, FL 32399

Attn: Curtis Musson

Comments:

Group A: Nutrients, Metals, Tracers, Q-PSNP-TQ

Group B: SCI, Algae_ID

Packing Notes:

No FedEx Labels

No Trash Bag

1 - case of sulfuric acid/2 sets labels

1 - case of nitric acid/2 sets of labels

Requested Analyses:

Bottle Group: A

of Sites: 1

Container ID: P-1L

Qty: 1

Preservation: ICE

Lot #

00073319

Description: Plastic Bottle 1L

Analysis

ALKALINITY

TURBIDITY

W-CL-IC

W-COLOR

W-F

W-SO4-IC

W-TDS

W-TSS

Description

Alkalinity in aqueous matrices as mg CaCO3/L

Turbidity in aqueous matrices

Chloride in aqueous matrices

True Color measured at 450 nm

Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)

Sulfate in aqueous matrices

Total Dissolved Solids in aqueous matrices

Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample

Container ID: BP-1L

Qty: 1

Preservation: ICE

Lot #

129820

Description: Brown Plastic Bottle 1L

Analysis

CHLSUITE-W

Description

Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry

Container ID: P-120ML-WC-THI

Qty: 2

Preservation: ICE

Lot #

8L05-TN

Description: 120 ml Sterilized White Cap with tablet

Analysis

ECOLI-18QT

Description

Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems

Container ID: BG-500ML

Qty: 1

Preservation: ICE

Lot #

00075246

Description: Brown Glass Bottle 500ML

Affix BLUE dot to container.

Analysis

W-E8321-DI

W-E8321-MS

Description

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Container ID: P-500ML

Qty: 1

Preservation: HNO3

Lot #

00075526

Description: Plastic Bottle 500 mL

Affix RED nitric acid dot to container.

Analysis

W-ICP

W-ICPMS

Description

Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

Container ID: P-500ML

Qty: 1

Preservation: ICE And H2SO4

Lot #

00075526

Description: Plastic Bottle 500 mL

Affix YELLOW sulfuric acid dot to container.

Analysis

W-NH3

W-NO2NO3

W-S-A-TP

W-TKN

W-TOC

Description

Ammonia in aqueous matrices as mg N/L

Nitrite/Nitrate in aqueous matrices as mg N/L

Total Phosphorus in aqueous matrices as mg P/L

Total Kjeldahl Nitrogen in aqueous matrices

Nonpurgeable Organic Carbon in aqueous matrices

Container ID: P-125ML

Qty: 1

Preservation: FILTER-ICE

Lot #

00075427

Description: Plastic Bottle 125 mL

Analysis

W-PO4-F

Description

Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

Container ID: BG-1L

Qty: 4 Preservation: ICE

Lot #

Description: Brown Glass Bottle 1L

Affix BLUE dot to container.

00068849
~~000f~~
IM
10/14/19

Analysis

W-PSNP-TQ

Description

Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS

Bottle Group: B

of Sites: 1

Container ID: PT-50ML

Qty: 1 Preservation: ICE

Lot #

Description: Plastic Tube 50 mL

21718023

Analysis

ALGAL_ID

Description

Qualitative assessment of algal taxa present without counts

Container ID: PJ-2L

Qty: 2 Preservation: Formalin

Lot #

Description: Plastic Jar 2 L

Bio-Wash

Analysis

MI-FW-QLDC

Description

No. Taxa of FW macroinverts, qual samp, 20 dipnets.

Cooler Packed By:

IM

Number of Coolers:

2

Date:

10/14/19

Kit must also include:

- ☒ Field Sheets
- ☒ Temperature Control Bottle
- ☐ FedEx Bills, if applicable
- ☐ Plastic Bags/Zip Ties
- ☒ Acid Labels (sets of 24)

If Preservation Included:

1/ HNO3	Exp _____	Lot # _____
1/ LOT# NA9189080	Exp _____	Lot # _____
1/ EXP: 07/08/2020	Exp _____	Lot # _____
1/ H2SO4	Exp _____	Lot # _____
1/ LOT# SA9203100	Exp _____	Lot # _____
1/ EXP: 07/22/2020	Exp _____	Lot # _____

PLEASE RETURN ALL COOLERS FOR RQ-2019-10-21-23