



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2016

PAGE ____ OF ____

Check box if data qualified

STORET Station Name: Sweetwater Creek @ 75m E of Marville Cr Date: 02/22/2016
(mm/dd/yyyy)

STORET Station ID: G5CE0051 Latitude: N 29.0996
(Decimal Degrees)

WBID: 2666 A RQ- 2016-02-22-52 ORG ID: 21FLCEN Longitude: W 81.0181
(Decimal Degrees)

Receiving Body of Water: Spruce Creek Field ID: G5CE0051 County: Volusia

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Duplicate Collection	Blank Collection
Mike Linger								
Mike Drennan								
Terry Riordan								

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	

Equipment ID: _____

Collection Method	
☒ Wading	☐ Via Boat
☐ From Shore	☐ Canoe/Kayak
☐ Other (note below)	☐ Electric Motor
	☐ Gasoline Motor

Water Level: Dry / Low / Normal / High / Flooded Matrix: Fresh / Marine / DI
Meter ID# 11C / 11E Photos: Yes / No Tide Falling: Yes / No / NA

Sample Type: Field Sample / Duplicate / Field Blank / Equipment Blank Equipment ID# _____

Time Zone	Time	Total Depth (m)	Sample Depth	Temp (°C)	DO (mg/L)	DO (%SAT)	COND (µmhos/cm)	Salinity (ppt)	pH	Secchi Disk (m)
<u>EST</u>	<u>1000</u>	<u>5</u>	<u>3</u>	<u>18.8</u>	<u>6.3</u>	<u>68</u>	<u>547</u>	<u>.27</u>	<u>7.1</u>	<u>.5(5)</u>
CEN										

Biological Samples Collected: None HA SCI LVS RPS LVI Other _____

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ TKN / TP / NOx / NH3 / TOC / TN ☐ Other _____	☐ Ice ☒ H ₂ SO ₄	<u>5259080</u>	<u>9/16/16</u>	☒ < 2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ < 2
Filtered Nutrients	☒ oP ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Macroinvertebrates	☒ MI-FW-QLDC	☒ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ QPCR	☐ Ice			
Periphyton	☐ ALGAE-ID	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PSCL-TQA ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other _____			

Place Preservative Sticker(s) Here (If Available)

Notes: NO LVS < 2m² veg

RQ-2016-02-22-52
Date: 02/22/16
Time: _____

Signature: Mike Linger Mike Drennan Date: 2/22/16

G5CE0051
Field ID ↑
STORET ↓
G5CE0051

Field Parameters Entered into LIMS: MKL 2/24 (Initials/Date) Field Parameters QC in LIMS: NA MKL 4/5/16 (Initials/Date)
Date Migrated to STORET: NA 4/4 (Initials/Date) Field Sheets Scanned/Saved: _____ (Initials/Date)

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

SAMPLE ID 75830 ORG ID 21PLEN LATITUDE 29.099600
 COUNTY Volusia STORET # 65CE0051 LONGITUDE -81.018100
 DATE 2/22/16 TIME 1100 SAMPLING AGENCY FDEP CE BOC
 SITE NAME Sweetwater Creek @ 75 m E of Marville Cr
 FIELD ID/NAME 65CE0051 RECEIVING BODY OF WATER Spruce Creek

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) ☐								Landscape Development Intensity Index (LDI)
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 2.5 m wide m/s 0.2 m/s m/s m deep 0.5 m deep m deep		
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>12</u>				Hydrologic Modification Score (per FT 3101)				
High Water Mark: <u>0.6</u> + <u>0.5</u> = <u>1.1</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 <table border="1"> <thead> <tr> <th></th> <th>% Coverage</th> <th>INVERT # Times Sampled</th> <th>PERI # Times Sampled</th> </tr> </thead> <tbody> <tr> <td>Woody Debris (Snags)</td> <td></td> <td>7</td> <td></td> </tr> <tr> <td>Undercut Banks / Roots</td> <td></td> <td>7</td> <td></td> </tr> <tr> <td>Leaf Packs or Mat</td> <td></td> <td>2</td> <td></td> </tr> <tr> <td>Aquatic Vegetation</td> <td></td> <td>2</td> <td></td> </tr> <tr> <td>Rock or Shell Rubble..</td> <td></td> <td>1</td> <td></td> </tr> <tr> <td>Sand.....</td> <td></td> <td>1</td> <td></td> </tr> <tr> <td>Mud / Muck / Silt</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				% Coverage	INVERT # Times Sampled	PERI # Times Sampled	Woody Debris (Snags)		7		Undercut Banks / Roots		7		Leaf Packs or Mat		2		Aquatic Vegetation		2		Rock or Shell Rubble..		1		Sand.....		1		Mud / Muck / Silt				Other				Other				WATER QUALITY <table border="1"> <thead> <tr> <th></th> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top:</td> <td>0.3</td> <td>18.8</td> <td>7.1</td> <td>6.3</td> <td>68</td> <td>547</td> <td>0.3</td> <td>0.5</td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>☒ VOB</td> </tr> <tr> <td>Bottom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>TOTAL DEPTH</td> </tr> </tbody> </table> Meter ID: <u>11C / 11E</u>							Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	0.3	18.8	7.1	6.3	68	547	0.3	0.5	Mid:								☒ VOB	Bottom								TOTAL DEPTH
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			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) ☐																																																																																	
			AMBIENT FIELD CONDITIONS / NOTES: <u>NO LVS <2m² veg</u> <u>70's clear</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																																																																	
SAMPLING TEAM <u>Mike Liger, Mike Drennan, Terry Ribsdan</u>			SIGNATURE <u>[Signature]</u>			DATE: <u>2/22/16</u>																																																																														

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Sweetwater Creek 75m E of Marlville Cr County: Volusia Date: 2/22/16 Investigators: Mike Lyle

Transect (m) Point 1=right 9=left Algal Thickness Rank (N-6, X) Estimated Canopy Cover

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STORET Station Number: 65CE0051

Secchi depth 0.5m
Estimated?

points ranked 4-6 0
total points assessed 99
% 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- 2016-02-22-52

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

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

SAMPLING AGENCY: <u>FDEP</u>		STORET STATION NUMBER: <u>65CE0051</u>	DATE (MM/DD/YY): <u>2/22/16</u>	RECEIVING BODY OF WATER: <u>Spring Creek</u>
REMARKS:	COUNTY: <u>Volusia</u>	LOCATION: <u>Sweetwater Creek @ 75 m E of Marville Cr</u>	FIELD ID/NAME: <u>65CE0051</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>8</u>	20 19 18 17 16	15 14 13 12 11	10 <u>9</u> 8 7 6	5 4 3 2 1
Substrate Availability <u>6</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 <u>6</u>	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>13</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 <u>7</u> 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>13</u> ----- Primary Score <u>40</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 <u>13</u> 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>15</u>	<u>20</u> 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>8</u> Left Bank <u>6</u>	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>9</u> Left Bank <u>5</u>	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 <u>8</u> Left Bank <u>8</u> ----- Secondary Score <u>68</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

103

TOTAL SCORE

Date: <u>2/22/16</u>	Analyst: <u>Mike Linger</u>	Signature: 
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Left Bank

Downstream

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

62-160.800, F.A.C.

100 m:	Latitude	<u>29.099277</u>
	Longitude	<u>-81.017566</u>
0 m:	Latitude	<u>29.098425</u>
	Longitude	<u>-81.017288</u>

S	Snags	2.75	<u>1.25</u>
R	Roots/undercut banks	1	<u>0.5</u>
L	Leaf Packs (or mats)	1.5 ⁺	<u>0.68</u>
P	Aquatic Macrophytes		_____
		_____	_____
		_____	_____
O	Pools	total # observed = 5	
		# range expected = 4-6	

Velocity measured at 8 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:

$0.3 + 0.7 = 1.1$
 $1.26 + 1.5 = 2.76$
 $0.6 + 0.9 = 1.5$

Revision Date: _____

5- 1- upper section

Waterbody: Sweetwater Creek @ 75m E of 2	Date: 2/22/16	County: Volusia	Store Number: GSCE0051
Analyst: Mike Linder, Mike Brennan, TR ³ Marville Cr	Signature: <i>Dr. K. L.</i>		

Comments: no ivs preformed $\leq 2m^2$ vegetation

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]