



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

Data Qualified?
Yes / No

January 2018

WIN Station Name: POWELL CREEK Date: 8/22/18
(mm/dd/yyyy)

WIN/ Field ID: G3SD0144 WBID: 32402 Latitude: 26.704243
(Decimal Degrees)

County: LEE ORG ID: _____ Longitude: 81.800209
(Decimal Degrees)

Receiving Body of Water: CALOOSAHATCHEE RQ-2018- 07-0230

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
<u>Larry Snare</u>		X	X	X	X	X
<u>Steve Cofane</u>			X	X	X	X

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☒ Syringe	
☐ Dipper	☐ Other	
Depth Measured with <u>Secchi Disk</u>		
Equipment ID <u>Deepse Blue</u>		

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

Water Level: Dry/ Pooled/ Low / Normal / High / Flooded Meter ID# keys Matrix: Fresh / Marine / DI
Photos: Yes / No Flow: No Flow / Intertidal / 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 (PPT)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1145	1.2	0.3	1.2	5.76	75.8	6.5	0.12	260	29.67
CEN										

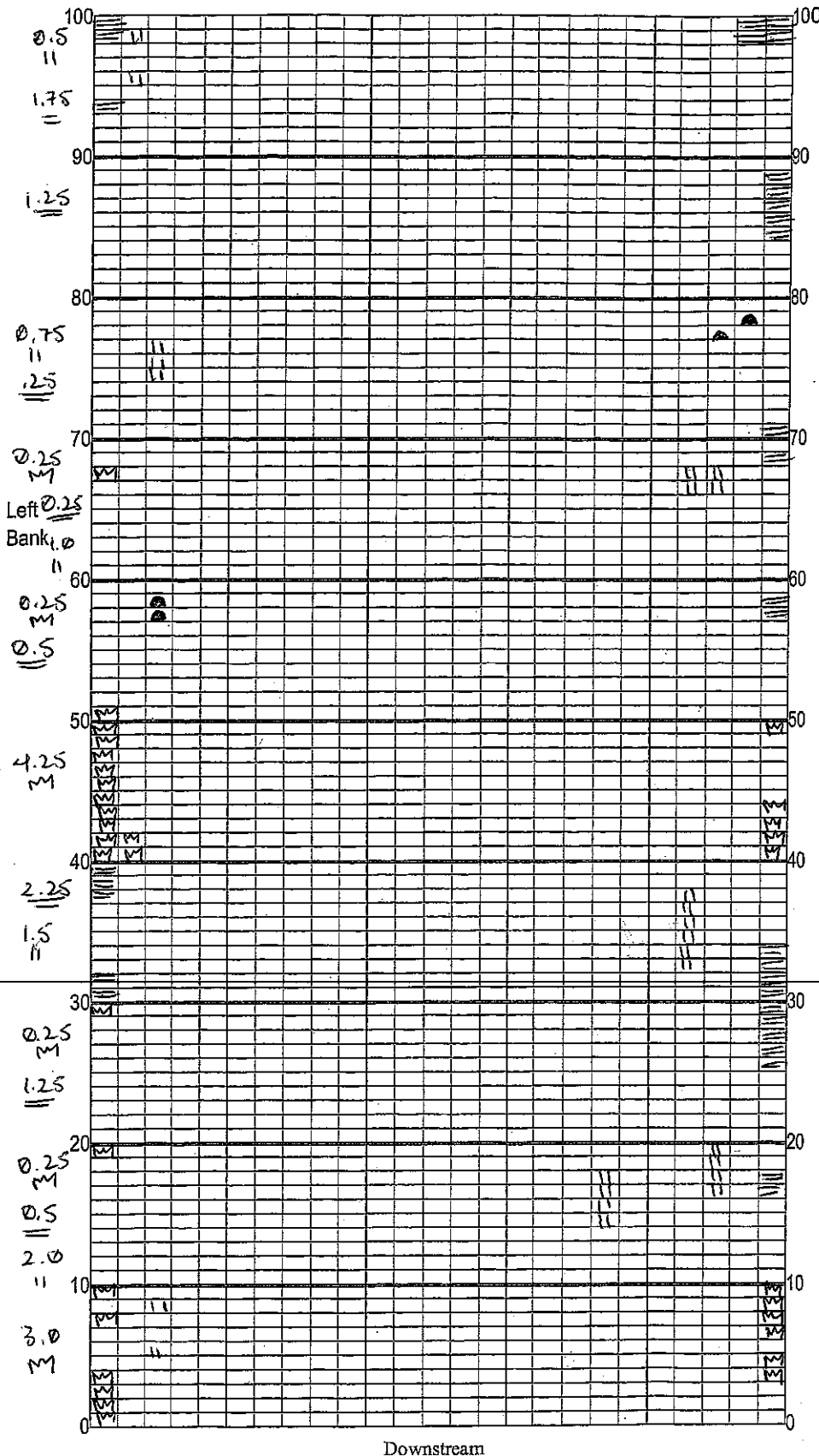
Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other: _____
SBIO ID Numbers: SBIO-ID: 78908 HA-ID: 15398 RPS-ID: 9095 Macrophyte-ID: 11081 LIMS#: _____

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>SA8085170</u>	<u>3/26/19</u>	☒ <2
Metals	☐ W-JCPMS ☐ 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-CH-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	☐ Ice			
Molecular	☐ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-UHERB-AA ☐ W-AHERB-AA ☐ W-CARB-AA ☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

Notes: SBIO Visit ID: <u>78908</u>	Field ID/WIN ID	
	Location	<u>G3SD0144</u> <u>Powell Creek</u>
Signature: <u>[Signature]</u>	Date: <u>8/22/18</u>	

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ QC Station ID, Field Parameters In LIMS DMT: _____
(Initials/Date) (Initials/Date)
Scan/Save Field Sheets _____ Migrate Data to WIN: _____ Verify Data In WIN: _____
(Initials/Date) (Initials/Date) (Initials/Date)

DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet



Location: POWELL CREEK

Date: 08/22/2008

Sampler: MD, NR, SC, GS

100 m: Latitude 26.6880221
Longitude -81.8756201

0 m: Latitude 26.6875533
Longitude -81.8755899

Substrates: Code key, draw proportionate habitat abundance. %

	Snags	<u>0.89</u>	<u>6.25</u>
	Roots/undercut banks	<u>1.14</u>	<u>8.00</u>
	Leaf Packs (or mats)	<u>-</u>	<u>-</u>
	Aquatic Macrophytes	<u>1.18</u>	<u>8.25</u>
	ROCKS	<u>0.14</u>	<u>1.0</u>
	Pools	total # observed = <u>0</u> # range expected = <u>1</u>	

Average width 7.0 m.

Average depth 1.0 m

Velocity measured at 0 meter mark.

WQ & chemistry taken at 0 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:

$$1 \text{ box} = 1/4 \text{ m}^2$$

$$\text{velocity} = 3.5 \text{ m/s} = 0.33 \text{ m/s}$$

3.35% AVAILABLE HABITAT

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

PUT STICKER UP ^ HERE		STORET STATION NUMBER: <u>G3SD0144</u>	DATE (MM/DD/YY): <u>08/22/2018</u>	SAMPLING AGENCY: FDEP South ROC
FIELD ID/NAME: <u>POWELL CREEK</u>	COUNTY: <u>LEE</u>	LOCATION: <u>26.704243 -81.800209</u>	RECEIVING BODY OF WATER: <u>Caloosahatchee</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>12</u>	20 19 18 17 16	15 14 13 <u>12</u> 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>4</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 <u>4</u> 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>0</u> ----- Primary Score <u>44</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 <u>9</u> <u>8</u> 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>0</u>	20 19 <u>18</u> 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>9</u> Left Bank <u>9</u>	10 <u>9</u> <u>8</u>	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>5</u> Left Bank <u>4</u>	10 9	8 7 6	<u>5</u> <u>4</u>	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>5</u> Left Bank <u>5</u> ----- Secondary Score <u>55</u>	10 9	8 7 6	<u>5</u> 4	3 2 1

99

TOTAL SCORE

Date: <u>08/22/2018</u>	Analyst: <u>MD, NR, SC, GS</u>	Signature: <u>Konjane Jagan</u>
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DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD

Storet Number: ^ put sticker here

Date: 6/22/18

County: Lee

Waterbody: POWELL CREEK

Analyst: MD, NR, SC, GS

Signature: Ryan J. Jager

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. **bold is exotic invasive**

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	
<i>Alternanthera philoxeroides</i>	X	X										<i>Micranthemum glomeratum</i>											
<i>Bacopa caroliniana</i>		X										<i>Micranthemum umbrosum</i>											
<i>Bacopa monnieri</i>												<i>Myriophyllum aquaticum</i>											
<i>Bidens mitis</i>												<i>Najas guadelupensis</i>											
<i>Boehmeria cylindrica</i>												<i>Nuphar luteum</i>											
<i>Centella asiatica</i>												<i>Orontium aquaticum</i>											
<i>Ceratophyllum demersum</i>												<i>Panicum hemitomon</i>											
<i>Chara</i> sp.												<i>Panicum repens</i>	X	X	X								
<i>Cicuta maculata</i>												<i>Panicum rigidulum</i>											
<i>Cladium jamaicense</i>												<i>Pistia stratioides</i>	X	X	X	X	X	X	X	X	X	X	X
<i>Colocasia esculenta</i>	X											<i>Polygonum glabra</i>											
<i>Commelina diffusa</i>												<i>Polygonum hydropiperoides</i>											
<i>Commelina virginica</i>												<i>Polygonum punctatum</i>	X										
<i>Crinum americanum</i>												<i>Pontedaria cordata</i>											
<i>Cyperus</i>												<i>Potamogeton illinoensis</i>											
<i>Diodia virginiana</i>												<i>Ruellia simplex</i>											
<i>Eichhornia crassipes</i>												<i>Sacciolepis striata</i>											
<i>Eleocharis (wispy viviparous)</i>												<i>Sagittaria kurziana</i>											
<i>Hydrilla verticillata</i>												<i>Sagittaria lancifolia</i>											
<i>Hydrocotyle</i> sp.	X									X		<i>Sagittaria latifolia</i>	X	X	X	X	X	X	X	X	X	X	X
<i>Hygrophila polysperma</i>												<i>Salvinia minima</i>											
<i>Hymenachne amplexicaulis</i>												<i>Samolus parviflorus</i>											
<i>Hymenocallis</i>												<i>Saururus cernuus</i>											
<i>Lachnanthes caroliniana</i>												<i>Sparganium americanum</i>											
<i>Landoltia punctata</i>												<i>Sphagneticola trilobata (Wedelia)</i>											
<i>Lemna</i> sp.	X											<i>Typha</i> sp.											
<i>Limnophila sessiflora</i>												<i>Urochloa mutica (Brachiaria)</i>											
<i>Ludwigia leptocarpa</i>												<i>Vallisneria americana</i>											
<i>Ludwigia palustris</i>												<i>Zizania aquatica</i>											
<i>Ludwigia peruviana</i>												wild coffee (<i>Psychotria nervosa</i>)											
<i>Ludwigia repens</i>												<i>Peltandra virginica</i>	X	X	X	X	X	X	X	X	X	X	X
<i>Luziola fluitans</i>												<i>EGRIA</i>	X	X	X	X	X	X	X	X	X	X	X
												<i>Mexican Petunia (Ruellia simplex)</i>											
												<i>Magnolia grandiflora</i>	X										
												<i>leather fern (Acrostichum sp.)</i>											
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																							

DEP-SOP-001/01: Form FD 9000-3 (9/19/12)
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

RQ-2013-10-07-72

Date: 1/2/34

ABCDEFGH

Field ID ↑

STORET ↓

1234567890123456

User Defined Space.
 Location, directions,
 samplers, whatever...

SAMPLE ID _____ ORG ID _____
 COUNTY LEE SAMPLING AGENCY S RDC
 DATE 08/22/2008 TIME _____
 SITE NAME POWELL CREEK
 FIELD ID/NAME G3SD00144 RECEIVING BODY OF WATER Caloosahatchee

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>35</u> Siliculture _____ Field/Pasture _____ Agricultural <u>60</u> Residential <u>5</u> 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 <u>7.0</u> m wide <u>0.33</u> m/s <u>0.33</u> m/s <u>0.33</u> m/s <u>1.1</u> m deep <u>1.2</u> m deep <u>1.1</u> m deep	
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>6</u> Right Bank: <u>10</u>				Hydrologic Modification Score (per FT 3101) _____			
High Water Mark: <u>0.4</u> + <u>1.0</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 % Coverage: <u>0.89</u> # Times Sampled: _____ PERI # Times Sampled: _____ Woody Debris (Snags) <u>1.14</u> Undercut Banks /Roots _____ Leaf Packs or Mat _____ Aquatic Vegetation <u>1.18</u> Rock or Shell Rubble... <u>0.14</u> Sand/Silt _____ Sand/Gravel _____ Mud/Muck/Silt _____ Other _____			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> <u>29.67</u> <u>6.80</u> <u>5.76</u> <u>75.8</u> <u>260</u> <u>0.12</u> <u>1.2</u> Mid: _____ Bottom: _____ Meter ID: <u>KEYS</u> Meter Verify: Y ☒ N ☐ SITE DEPTH: <u>1.2</u>					
ABUNDANCE Absent 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: <u>SAB005170</u> Exp: <u>03/26/19</u> 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) _____			WEATHER CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.					

SAMPLING TEAM

MD, NR, SC, GS

SIGNATURE:

Manjain Jagan

DATE:

08/22/2008

Site: Powell Creek County: LEE Date: 08/22/2018 Investigators: MO, NR, GS, SC

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6)	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6)	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6)	Canopy Cover
0	1	N	90	40	1	N	90	80	1	N	90
	2	X			2	X			2	X	
	3				3				3		
	4				4				4		
	5				5				5		
	6				6				6		
	7				7				7		
	8				8				8		
	9				9				9		
10	1	N	92	50	1	N	90	90	1	N	94
	2	X			2	X			2	X	
	3				3				3		
	4				4				4		
	5				5				5		
	6				6				6		
	7				7				7		
	8				8				8		
	9				9				9		
20	1	N	90	60	1	N	92	100	1	N	90
	2	X			2	X			2	X	
	3				3				3		
	4				4				4		
	5				5				5		
	6				6				6		
	7				7				7		
	8				8				8		
	9				9				9		
30	1	N	90	70	1	N	90		1	N	
	2	X			2	X			2	X	
	3				3				3		
	4				4				4		
	5				5				5		
	6				6				6		
	7				7				7		
	8				8				8		
	9				9				9		

points ranked 4-6: 0
 total points assessed: 22
 % points ranked 4-6: 0

Secchi depth: 1.25

Check accompanying data collected at same site/date.
 Algal mat sample: X
 Habitat Assessment: X
 Linear Veg. Survey: X
 SC/Biorecon (circle 1): X
 Water sample: X
 RO: 2018-07-02-39

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

Record "N" for points deeper than the Secchi depth; algae are presumed absent. Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. Note if thickness estimated for deep points which can be seen but not reached.

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 an 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%.