



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

Qualified Data

October 2017

75m NW

Location/STORET Station Name: Little Wekiva River @ 300m NAE of Palm Spring Date: 12/06/2017
(mm/dd/yyyy)

STORET # G2CE0140 WBID: 2987 Latitude: 28.69182
(Decimal Degrees)

County: Seminole RQ - 2017-12-04-55 ORG ID: 21FLCEN Longitude: -81.39322
(Decimal Degrees)

Receiving Body of Water: _____ Field ID: G2CE0140

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Linger					/	/	/	/	/
Mike Drennon					/	/	/	/	/

Sampling Equipment			
☒ Sample Container	☐ Van Dorn	☐ Pole	
☐ Carboy	☒ Syringe		
☐ Dipper	☐ Other		
Equipment ID _____			
Collection Method			
☒ Wading	☐ Canoe/Kayak		
☐ From Shore	☐ Electric Motor		
☐ Other	☐ Gasoline Motor		

Water Level: Dry / Low / (Normal) / Above Normal / Flooded Meter ID# Tally 1 / AB Matrix: (Fresh) / Marine / DI

Photos: (Yes) / No Flow: No Flow / Intestinal / (Flowing) / NA Tide: Rising / Falling / Slack (NA) Tide Times: High Low

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPTH)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1400	0.3 MKL	0.4	6.4	76	6.8	0.2	0.4 (15)	353	23.9
CEN			0.2 MKL					0.2 (15) MKL		

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				☒ Ice ☒ H2SO4	SA7275010	10/2/18	☒ <2	
Metals	☐ W-ICPMS ☐ 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-Cl-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				☐ Ice				
	☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R				☐ Other				

Notes:

Site description edit by MKL on 2/1/18

Little Wekiva River @

G2CE0140

Field ID ↑

STORET ↓

G2CE0140

Date: 12/06/2017
RQ-2017-12-04-55

Signature: [Signature]

Date: 12/6/17

Field Parameters Entered into LIMS: CMD 12/22/17
(Initials/Date)

Field Parameters QC in LIMS: _____
(Initials/Date)

Date Migrated to STORET: _____
(Initials/Date)

Field Sheets Scanned/Saved: _____
(Initials/Date)

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

SAMPLE ID _____ ORG ID 21FLCEN LATITUDE 28.69187
 COUNTY Seminole STORET # 62CE0140 LONGITUDE -81.39322
 DATE 12/6/17 TIME 1200 SAMPLING AGENCY FDEP CR-ROC
 SITE NAME Little Wekiva River @ 300 NNE of Palm Spring
 FIELD ID/NAME 62CE0140 RECEIVING BODY OF WATER Wekiva River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): <u>(Based on 100m buffer)</u> Forest/Natural <u>97</u> Silviculture <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>3</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</u>								Landscape Development Intensity Index (LDI) <u>5.49</u> (Run 53 based on entire WBD)	
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>5.4</u> m wide <u>0.19</u> m/s <u>0.6</u> m deep			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>80</u> Right Bank: <u>17</u>				Hydrologic Modification Score (per FT 3101) <u>0</u>					
High Water Mark: <u>.4</u> + <u>.6</u> = <u>1.0</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 <u>Type: Sand</u> ☒ 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			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>23.9</u> <u>6.8</u> <u>6.4</u> <u>76</u> <u>353</u> <u>0.2</u> <u>0.4</u> Mid: <u>0.4</u> <u>23.9</u> <u>6.8</u> <u>6.4</u> <u>76</u> <u>353</u> <u>0.2</u> <u>0.4</u> Bottom: <u>0.4</u> <u>23.9</u> <u>6.8</u> <u>6.4</u> <u>76</u> <u>353</u> <u>0.2</u> <u>0.4</u> Meter ID: <u>Tally 1 / AB</u>					
Woody Debris (Snags) <u>.43</u> <u>5</u> Undercut Banks / Roots <u>4.6</u> <u>5</u> Leaf Packs or Mat <u>.33</u> <u>5</u> Aquatic Vegetation <u>—</u> <u>—</u> Rock or Shell Rubble <u>.13</u> <u>3</u> Sand <u>—</u> <u>2</u> Mud / Muck / Silt <u>—</u> <u>—</u> Other <u>—</u> <u>—</u> Other <u>—</u> <u>—</u>			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☒ ☐ Fish: ☐ ☐ ☐ ☒ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☐ ☐ ☒ ☐			Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SA7275010</u> Exp: <u>10/2/18</u>			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 ☐			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐		
AMBIENT FIELD CONDITIONS / NOTES: <u>- Low 80's clear</u> <u>- System recovering from recent Flooding (IRMA)</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.								
SAMPLING TEAM <u>Mike Linger / Mike Drennan</u>				SIGNATURE: <u>[Signature]</u>		DATE: <u>12/6/17</u>		

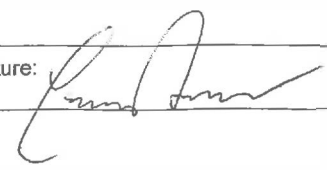
DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDEP-CEROC</u>		STORET STATION NUMBER: <u>G2CE0140</u>	DATE (MM/DD/YY): <u>12/6/17</u>	RECEIVING BODY OF WATER: <u>Wekiva River</u>
REMARKS:	COUNTY: <u>Seminole</u>	LOCATION: <u>Little Wekiva River</u>	FIELD ID/NAME: <u>G2CE0140</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>13</u>	20 19 18 17 16	15 14 13 12 11	10 9 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 6	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 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>17</u> ----- Primary Score <u>49</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	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>20</u>	20 19 18 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> <u>18</u> Left Bank <u>9</u>	10 9	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>9</u> <u>19</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	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>8</u> <u>17</u> Left Bank <u>9</u> ----- Secondary Score <u>74</u>	10 9	8 7 6	5 4	3 2 1

123

TOTAL SCORE

Date: <u>12/6/17</u>	Analyst: <u>Mike Drennon / Mike Linger</u>	Signature: 
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Hand-drawn sketch map of a stream/river habitat assessment. The map is on a grid with a vertical axis from 0 to 100 and a horizontal axis from 0 to 100. The stream is depicted as a winding line. Key features include:

- Left Bank:** Labeled on the left side.
- excellent roots (cypress):** Note near the top right.
- Sandy Substrate throughout, minimal smothering:** Note in the upper right.
- Good flow:** Note in the upper right.
- Banks w/ root Armoring < 60° slope:** Note in the middle left.
- Anoxic sections Absent:** Note in the middle left.
- good meanderings:** Note in the middle left.
- Pool (1.2m):** Note near the center right.
- Shallow:** Note near the center right.
- Pool:** Note near the center right.
- Down Tree:** Note near the center right.
- Shrubs down branches:** Note near the bottom right.
- Palm Spring:** Note at the bottom left.
- Downstream:** Note at the bottom center.

The map includes various handwritten notes and symbols, such as "RRR" and "RRR" along the left bank, and "RRR" and "RRR" along the right bank. The stream is labeled "RRR" and "RRR".

Sampler: Mike Drennan / Mike Linger

Riparian Buffer Width:
Note areas (on map) where natural vegetation
is altered or eliminated.

- Canopy dominated by toxicus
- Secondary are palms + Myrsine
- Understory (Primary growth)
- Scoured by Hurricane Irma
- High water has since returned to normal

Revision Date: March 1, 2014

62-160.800, F.A.C

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

BF = 4 above H₂O level
BH = 8 above BF

$$\begin{aligned}\bar{z} &= .6 \text{ m} \\ \bar{v} &= .185 \text{ m/s} \\ \bar{\lambda} &= .59 \text{ m}\end{aligned}$$

62-160.800, F.A.C

S	2.3
R	24.8
L	1.8
A	1.1
Ru	.7

1.95
1.4
7-354 | 2.35

29.7/540 = 5.5%
habitat

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Little Wekiva River</u>					County: <u>Seminole</u>		Date: <u>12/6/17</u>		Investigators: <u>Mike Linger</u>	
					STORET Station Number: <u>62LE0140</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	N			60	1	N		
	2	3				2	N		
	3	N				3	3		
	4	N				4	N		
	5	N		76		5	N		84
	6	3				6	N		
	7	3				7	N		
	8	N				8	N		
	9	N				9	N		
10	1	N			70	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		84		5	N		72
	6	N				6	N		
	7	3				7	N		
	8	N				8	N		
	9	N				9	N		
20	1	3			80	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		64		5	N		64
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
30	1	N			90	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		68		5	N		68
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
40	1	N			100	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		68		5	N		72
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
50	1	N							
	2	N							
	3	N							
	4	N							
	5	N		88					
	6	N							
	7	N							
	8	N							
	9	N							

Secchi depth	<u>0.40</u>
Estimated?	

# points ranked 4-6	<u>4</u>
total points assessed	<u>99</u>
% points ranked 4-6	<u>4 %</u>

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	☒
SCM Biorecon	☒
Water sample	☒
RQ-2017-12-04-55	

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%.

Waterbody: Little Wekiva River	Date: 12/6/17	County: Seminole	Storet Number: 62CE0140
Analyst: Mike Linger	Signature: <i>Mike Linger</i>		
Comments: NO LVS, < 2m ² of vegetation			

	Meter Mark									Specimen collected (check)		Meter Mark									Specimen collected (check)
HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90		90-100	HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	

62-160.800, F.A.C. page 1 of 2 Revision Date: March 1, 2014