

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

STRATEGIC MONITORING PLAN FIELD SHEET

January 2022

Meter Passed End

of Day CCV

☒ Yes / No

WIN Station Name: Little Wekiva Canal 85m N of Shader Rd

Date: 6/20/2022

WIN/Field ID: G2CE0266

WBID: 3004

ENR: -

Latitude: 28.58726

County: ORANGE

Org ID: 21FLCEN

Longitude: -81.43758

Receiving Body of Water: Wekiva River

RQ: 2022-03-21-23

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒	Victoria Schwartz	x	x	x	x	x
☒	Terry Riordan	x	x			
☐						
☐						

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

Water Level: ☒ Normal ☐ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded						Meter ID# SHRIMP TRAP	
Photos: YES		Flow:		Tide:		Tide Times: High: Low:	
Biological Samples Collected: ☐ None ☒ HA ☐ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:							
SBIO ID Numbers: SBIO 84617		MACROPHYTE 12210		RPS 9949		2335672	
Notes: OVERCAST							

Duplicate Sample

Time Zone: EST		Time: _____		Field ID: N/A		(WIN ID_DUP)
WIN DMT Activity ID: _____						

Blank

Time Zone: _____		Time: _____		Field ID: _____		(Blank Type_DDMMYYYY)
DI Source: _____		Location: _____				
DI Type: _____		Equipment ID: _____				
DI Container (Name/ID): _____				DI Container Type: _____		

LIMS EVENT ID: CEN-DIST-2022-06-21-01

WIN Import ID: 35062

Enter Field Parameters, Verify Station ID In LIMS DMT: KWM 7/8/22

QC Station ID, Field Parameters In LIMS DMT: EB 8/11/22

(Initials/Date)

(Initials/Date)

Scan/Save Field Sheets KWM 8/29/22

Migrate Data to WIN: KWM 8/29/22

Verify Data In WIN: _____

(Initials/Date)

(Initials/Date)

(Initials/Date)



RQ-2022-03-21-23
Customer: CEN-DIST
Project ID: STRATEGIC MONITORING PLAN

Collected By: Victoria Schwartz, Terry Riordan
Field Report Prepared By: Victoria Schwartz
Sampling Agency: FDEP

Place Label Here WIN ID/Field ID: G2CE0266 Location: Little Wekiva Canal 85m N of Shader Rd						Comments:				
Matrix: Fresh						(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 (PPT _h)
6/20/2022	1457 EST	3.78	49	28.8	6.59	0.3	0.7 ☐ VOB (S)	0.8	200.6	0.09
	EST						Central Lab please use top row for login purposes			
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	1	A
		Lot #	SA130873		Exp:	11/17/22				
Metals (P-500ML)		☐ W-ICPMS ☐ W-ICP ☐ W-HARD				☐ Ice ☐ HNO3*		☐ <2		
		Lot #			Exp:					
Filtered Nutrients (P125ML)		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter				☐ Ice			1	A
		Filter Lot #	17413308			Syringe Lot #	1335260			
BOD (BP-1L)		☐ OV-BODUNIN				☐ Ice				
Chlorophyll (BP-1L)		☒ CHLSUITE-W				☐ Ice			1	A
Physical/Aggregate (Fresh) (P-1L)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS				☐ Ice			1	A
Physical/Aggregate (Marine) (P-1L)		☐ Alkalinity / W-F / W-TSS / TURBIDITY				☐ Ice				
Macroinvertebrates (PJ-2L)		☐ MI-FW-QLDC				☐ Formalin				
Periphyton (PT-50ML)		☐ ALGAE-ID				☐ Ice				
Microbiology (Contract Lab Bottle)		☐ E Coli ☐ F Coli ☐ Enterococci ☐ Contract Lab				☐ Ice				
Molecular (QPCR-P-500ML)		☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3 ☐ PCR-GULL2 ☐ PCR-GFD ☐				☐ Ice				
Tracers (BG-500ML)		☐ W-E8321-DI ☐ W-E8321-MS				☐ Ice		MCAA Exp. Prepreserved		
Pesticides (BG-500ML) (BG-1L)		☒ W-E8321-DI	☒ WE8321-MS	☒ W-PSNP-TQ	☒ W-CT-Cl-R	☒ Ice		MCAA Lot#	8	A
		☒ W-PCL-TQ-R	☒ W-CARB-AA (5 ml of MCAA** Buffer Solution)	☒ W-TR-SQ-R				Prepreserved		
		☐ W-PCB-TQ-R								
Phytoplankton/Periphyton				DTY-QN-C		PKD-QN-C	☐ Ice			
Name: Victoria Schwartz Terry Riordan				Signature:				Date: 06/20/2022		

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

SAMPLE ID	ORG ID	LATITUDE
COUNTY <u>Orange</u>	STORET # <u>G2CE0266</u>	LONGITUDE <u>-81.43758</u>
DATE <u>6/20/22</u>	TIME <u>14:57</u>	SAMPLING AGENCY <u>21 FL CEN</u>
SITE NAME <u>Little Wekiva canal 85m N of Shader Rd.</u>		
FIELD ID/NAME <u>G2CE0266</u>	RECEIVING BODY OF WATER <u>Wekiva River</u>	

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>10</u> Silviculture <u> </u> Field/Pasture <u> </u> Agricultural <u> </u> Residential <u>20</u> Commercial <u>20</u> Industry <u>50</u> Other (Specify) <u> </u>		Landscape Development Intensity Index (LDI) <u> </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 <u>25 sec avg.</u> <u>8</u> m wide <u> </u> m/s <u>0.04</u> m/s <u> </u> m/s <u> </u> m deep <u>0.8</u> m deep <u> </u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>518</u> Right Bank: <u>6</u>		Hydrologic Modification Score (per FT 3101) <u> </u>
High Water Mark: <u>0.5</u> + <u>0.8</u> = <u>1.3</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): <u> </u>		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			
Invert <u> </u> PERI <u> </u> % Coverage # Times Sampled # Times Sampled		Depth (M) <u>0.3</u> Temp. (°C) <u>28.8</u> pH (SU) <u>6.59</u> D.O. (MG/L) <u>3.78</u> D.O. Sat (%) <u>49</u> Cond. (UMHO/CM) <u>200.6</u> Salinity (PPT) <u>0.09</u> SECCHI (M) <u>0.1</u>	Top: <u> </u> Mid: <u> </u> Bottom: <u> </u>		TOTAL DEPTH <u>0.8</u>
Woody Debris (Snags) <u> </u> Undercut Banks / Roots <u> </u> Leaf Packs or Mat <u> </u> Aquatic Vegetation <u> </u> Rock or Shell Rubble <u> </u> Sand <u> </u> Mud / Muck / Silt <u> </u> Other <u> </u> Other <u> </u>		Meter ID: <u>Shrimp Trap</u>		Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ 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>SA130873</u> Exp: <u>11/17/22</u>		Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐	
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: <u> </u> Exp: <u> </u>		Clarity Clear ☐ Slightly Turbid ☐ Turbid ☒ Opaque ☐		System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☒ <u>Canal</u>	
AMBIENT FIELD CONDITIONS / NOTES: <u>Overcast/hot. All bio conducted from right shore due to inaccessibility canal accessibility (soft muck substrate).</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.		SAMPLING TEAM <u>Victoria Schwarz/Terry Riordan</u>			
SIGNATURE: <u>V. Schwarz</u>		DATE: <u>6/20/22</u>			

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

Shader

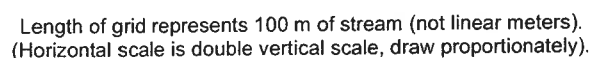
SAMPLING AGENCY: 21 FL CEN		STORE STATION NUMBER: G2CE0266	DATE (MM/DD/YY): 6/20/22	RECEIVING BODY OF WATER: Wekiva River
REMARKS:	COUNTY: Orange	LOCATION: Lime wekiva canal 85m N of Shader Rd.	FIELD ID/NAME: G2CE0266	

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 3	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability 16	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 4	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 2	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae.	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae.	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth).	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation.
Primary Score 25	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	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 or straightening 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 6	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 woody 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 woody root zone with raw, eroded areas.
Right Bank 7 Left Bank 9	L 10 R 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 4 Left Bank 10	L 10 R 9	8 7 6	5 4 1/8	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 4 Left Bank 9	L 10 R 9	8 7 6	5 4	3 2 1
Secondary Score 49	10 9	8 7 6	5 4	3 2 1

TOTAL SCORE

Date: 6/20/22	Analyst: Victoria Schwartz / Terry Rorden	Signature: VET [Signature] / [Signature]
----------------------	--	---

Shader



Canal starting to get choked out by *Eichornia* crass. (+ other veg)

Shades

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Little Wepunga Canal 85m N
of Shades Rd.

County: Orange

Date: 6/20/22

Investigators: Victoria Schwartz / Terry Rodan

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	(15) X 3			60	1	(4)		
	2	X 3				2	(5)		
	3	X N				3	N		
	4	X N				4	N		
	5	N		0		5	N		0
	6	X				6	X		
	7	X				7	X		
	8	X				8	X		
	9	X				9	X		
10	1	N			70	1	3		
	2	3				2	3		
	3	N				3	N		
	4	N				4	N		
	5	N		0		5	N		0
	6	X				6	X		
	7	X				7	X		
	8	X				8	X		
	9	X				9	X		
20	1	N			80	1	(5)		
	2	N				2	3		
	3	N				3	N		
	4	N				4	N		
	5	N		0		5	N		0
	6	X				6	X		
	7	X				7	X		
	8	X				8	X		
	9	X				9	X		
30	1	X			90	1	X		
	2	X				2	X		
	3	X				3	N		
	4	X				4	N		
	5	N		0		5	N		0
	6	X				6	X		
	7	X				7	X		
	8	X				8	X		
	9	X				9	X		
40	1	X			100	1	3		
	2	X				2	3		
	3	N				3	N		
	4	N				4	N		
	5	N		0		5	N		0
	6	X				6	X		
	7	X				7	X		
	8	X				8	X		
	9	X				9	X		
50	1	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 densitometer 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	(15) X 3							
	3	N							
	4	N							
	5	N		0					
	6	X							
	7	X							
	8	X							
	9	X							

Secchi depth	0.7
Estimated?	

# points ranked 4-6	5
total points assessed	47
% points ranked 4-6	11%

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	✓
Habitat Assessment	✓
SCI/Biorecon	
Water sample	✓
RQ- 2022-03-21-23	

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

Had to stand on shore of right bank. Left not accessible due to deep muck. Canopy cover estimated as 0 due to open canopy + inaccessibility

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

Waterbody: Little Wekiva Canal 85m N of Shader Rd Date: 6/20/22 County: Orange Storet Number: G2CE0266

Analyst: Terry Riordan Signature: [Signature]

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² 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	
<i>Alternanthera philoxeroides</i>	/	/	/	/	/	/	/	/	/	/		<i>Micranthemum glomeratum</i>			/		/	/	/	/			
<i>Bacopa caroliniana</i>								/				<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>												<i>Panicum repens</i>	/	/	/	/	/	/	/	/	/		
<i>Cicuta maculata</i>												<i>Panicum rigidulum</i>											
<i>Cladium jamaicense</i>												<i>Pistia stratioides</i>											
<i>Colocasia esculenta</i>												<i>Polygonum glabra</i>											
<i>Commelina diffusa</i>												<i>Polygonum hydropiperoides</i>											
<i>Commelina virginica</i>												<i>Polygonum punctatum</i>		/									
<i>Crinum americanum</i>	/	/	/	/								<i>Pontedaria cordata</i>											
<i>Diodia virginiana</i>	/	/	/	/								<i>Potamogeton illinoensis</i>							/	/			
<i>Eichhornia crassipes</i>	/	/	/	/	/	/	/	/	/	/		<i>Ruellia simplex</i>											
<i>Eleocharis (wispy viviparous)</i>												<i>Sacciolepis striata</i>											
<i>Hydrilla verticillata</i>												<i>Sagittaria kurziana</i>											
<i>Hydrocotyle</i>	/			/	/	/	/	/	/	/		<i>Sagittaria lancifolia</i>											
<i>Hygrophila polysperma</i>												<i>Sagittaria latifolia</i>											
<i>Hymenocallis</i>												<i>Salvinia minima</i>	/		/	/	/	/	/	/	/		
<i>Lachnanthes caroliniana</i>												<i>Samolus parviflora</i>											
<i>Landoltia punctata</i>												<i>Saururus cernuus</i>											
<i>Lemna</i>												<i>Sparganium americanum</i>											
<i>Limnophila sessiflora</i>												<i>Typha</i>											
<i>Ludwigia leptocarpa</i>												<i>Vallisneria americana</i>											
<i>Ludwigia palustris</i>												<i>Zizania aquatica</i>											
<i>Ludwigia peruviana</i>	/	/	/	/	/	/	/	/	/	/		<i>Urochloa mutica</i>	/	/	/	/	/	/	/	/	/		
<i>Ludwigia repens</i>	/								/	/		<i>Mikania scandens</i>	/		/	/	/	/	/	/	/		
<i>Luziola fluitans</i>												<i>Phyla nodiflora</i>	/	/	/	/	/	/	/	/	/		
<i>Rumex verticillatus</i>								/	/	X		<i>Ludwigia hexapetala-grandifolia</i>			/	/	/	/	/	/	/		
<i>Wedelia</i>								/	/			<i>unable to collect</i>											
												<i>appeared closer to hex w/ more rounded leaf</i>											
If no Dominant or Co-Dominant were selected, indicate with "X"	D	X	X	D	D	D	C	X	X	X		entered as Ludwigia unknown nativity- kwm											
Indicate % cover macrophytes per section																							
0-5% Macrophyte Coverage	/																						
>5 and ≤10% Macrophyte Coverage		/																					
>10 and ≤25% Macrophyte Coverage	/							/	/														
>25 and ≤50% Macrophyte Coverage			/	/	/	/	/	/	/	/													
> 50% Macrophyte Coverage																							