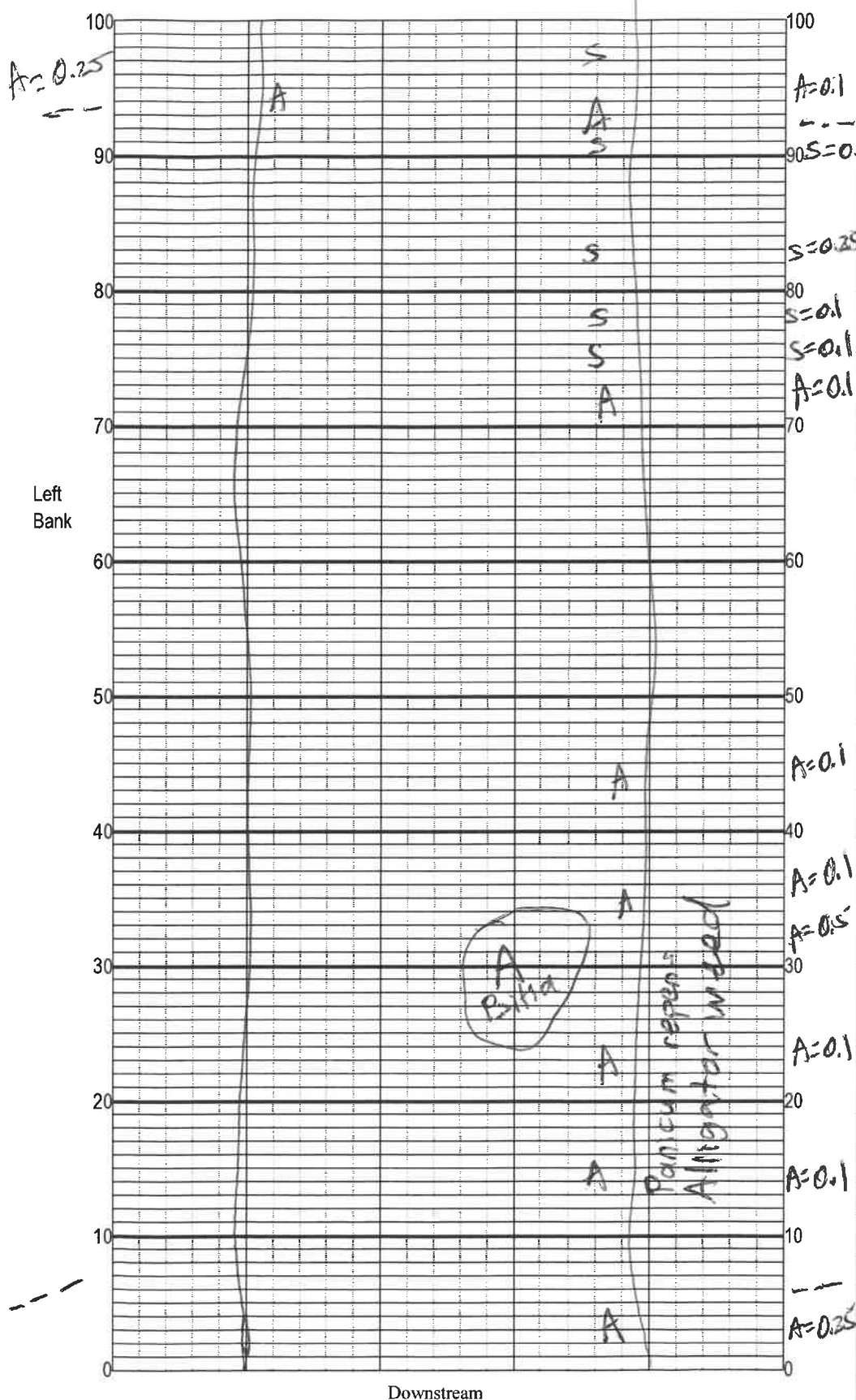


DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Ten Mile @ Gordy
Date: 10/27/22
Sampler: AL/JS

100 m: Latitude 27.403168
Longitude -80.400570
0 m: Latitude 27.403089
Longitude -80.399562

Substrates: Code key, draw proportionate habitat abundance.	%
---	---

S Snags _____

R Roots/undercut banks

L Leaf Packs (or mats)

A Aquatic Macrophytes

☐ _____

□

☐ Pools total # observed = _____
range expected = _____

Average width 50 m
Average depth 1.5 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.

Habitats	1	2	3	4	5
Sweeps Major	10	7	5	4	3
Sweeps Minor	10	6	5	4	5

Sec/Meter	Flow m/s	Secs/Meter	Flow m/s
1	1	10	0.1
2	0.5	11	0.09
3	0.33	12	0.08
4	0.25	13	0.076
5	0.2	14	0.071
6	0.16	15	0.066
7	0.14	16	0.062
8	0.12	17	0.058
9	0.11	18	0.055

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

SAMPLE ID _____ ORG ID 21 FLWPB LATITUDE 27.403
 COUNTY St. Lucie STORET # _____ LONGITUDE -80.39919
 DATE 10/27/2022 TIME _____ SAMPLING AGENCY DEP SEROC
 SITE NAME Ten Mile Creek @ Gord
 FIELD ID/NAME 625 E00001 RECEIVING BODY OF WATER Ten Mile

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☒ 95 ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☒ 5 ☐ Commercial ☐ Industry ☐ Other (Specify) ☐								Landscape Development Intensity Index (LDI) ☒ 1.0
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 ☒ 50 m wide ☐ m/s ☒ 0.14 m/s ☐ m/s ☐ m deep ☒ 1.5 m deep ☐ m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: ☒ 718 Right Bank: ☒ 718				Hydrologic Modification Score (per FT 3101) ☒ 9-10				
High Water Mark: ☒ 0.5 + ☒ 1.5 = ☒ 2.0 (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>☐</td><td>☐</td></tr> <tr><td>Undercut Banks / Roots</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Leaf Packs or Mat</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Aquatic Vegetation</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Rock or Shell Rubble..</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Sand.....</td><td>☐</td><td>☐</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)	☐	☐	☐	Undercut Banks / Roots	☐	☐	☐	Leaf Packs or Mat	☐	☐	☐	Aquatic Vegetation	☐	☐	☐	Rock or Shell Rubble..	☐	☐	☐	Sand.....	☐	☐	☐	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>☒ 24.1</td><td>☒ 7.37</td><td>☒ 4.67</td><td>☒ 56</td><td>☒ 1937</td><td>☒ 0.98</td><td>☒ 1.0</td></tr> <tr><td>Mid:</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Bottom</td><td>☒ 1.0</td><td>☒ 23.9</td><td>☒ 7.39</td><td>☒ 4.63</td><td>☒ 55.3</td><td>☒ 1936</td><td>☒ 0.98</td><td>☒ 1.5</td></tr> </tbody> </table> Meter ID: <u>Hedder</u>							Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	☒ 0.3	☒ 24.1	☒ 7.37	☒ 4.67	☒ 56	☒ 1937	☒ 0.98	☒ 1.0	Mid:	☐	☐	☐	☐	☐	☐	☐	☐	Bottom	☒ 1.0	☒ 23.9	☒ 7.39	☒ 4.63	☒ 55.3	☒ 1936	☒ 0.98	☒ 1.5
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Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☒ No Lot Number: _____ Exp: _____			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐			Clarity Clear ☐ Slightly Turbid ☐ Turbid ☒ Opaque ☐																																																																														
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AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																																																																				

SAMPLING TEAM

AL / JS

SIGNATURE :

[Signature]

DATE :

10/27/2022

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

SAMPLING AGENCY: <u>FDEP SEROC</u>		STORET STATION NUMBER:	DATE (MM/DD/YY): <u>10/27/22</u>	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: <u>St. Lucie County</u>	LOCATION: <u>Ten Mile Creek</u>	FIELD ID/NAME: <u>62SE0009</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>6</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 <u>6</u>	5 4 3 2 1
Substrate Availability <u>1</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 <u>1</u>
Water Velocity <u>12</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 <u>12</u> 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>5</u> ----- Primary Score <u>24</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. <u>5</u> 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 <u>7</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 <u>7</u> 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 <u>3</u> Left Bank <u>3</u>	10 9	8 7 6	5 4	<u>3</u> 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>10</u> Left Bank <u>10</u>	<u>10</u> 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> Left Bank <u>8</u> ----- Secondary Score <u>49</u>	10 9	<u>8</u> 7 6	5 4	3 2 1

73 TOTAL SCORE

Date: <u>10/27/22</u>	Analyst: <u>AL/JS</u>	Signature: <u>[Signature]</u>
-----------------------	-----------------------	-------------------------------

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Tea Mile Creek County: St. Lucie Date: 10/27/2022 Investigators: AL/JS

STORET Station Number:

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

Secchi depth 160
Estimated?

points ranked 4-6
total points assessed
% points ranked 4-6

Check accompanying data collected at same site/date

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

RQ-

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

Waterbody: Ten Mile Creek	Date: 10/2/12	County: St. Lucie County	Storet Number:
Analyst: AL/JS	Signature:		
Comments:			

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	

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

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

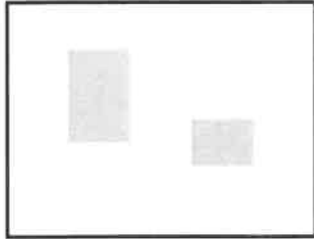
5% Macrophyte Coverage



5% Macrophyte Coverage



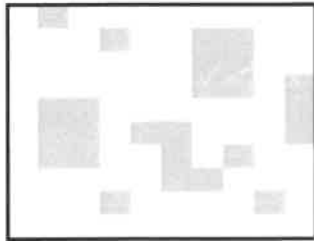
10% Macrophyte Coverage



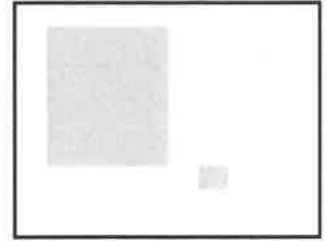
10% Macrophyte Coverage



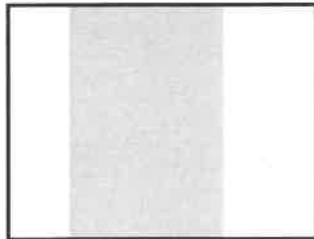
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage

