



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Yellow Fever Creek @ Littleton Rd

Date: 12/17/2019

WIN/ Field ID: G3SD0149

WBID: 3240E

Latitude: 26.6978538

(mm/dd/yyyy)

County: Lee

ORG ID: 21FLFTM

Longitude: -81.9202369

(Decimal Degrees)

(Decimal Degrees)

Receiving Body of Water: Caloosahatchee River

RQ- 2019-10-28-55

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment			
Nicole Reistad				☒	☒	☒	☒	☒	☒ Sample Container	☐ Van Dorn	☐ Pole	
Kirby Wolfe				☒	☒	☒	☒	☒	☐ Carboy	☒ Syringe		
Chris Hornmuth				☒	☒	☒	☒	☒	☐ Dipper	☐ Other		
									Depth Measured with <u>Secchi disk</u>			
									Equipment ID <u>Deeper Blue</u>			
									Collection Method			
									☒ Wading	☐ Canoe/Kayak		
									☐ From Shore	☐ Electric Motor		
									☐ Other	☐ Gasoline Motor		
Water Level: Dry/ Pooled/ Low / <u>Normal</u> / High / Flooded				Meter ID# <u>Deplorable</u>				Matrix: <u>Fresh</u> Marine / DI				
Photos: <u>Yes</u> / No				Flow: No Flow / Intestinal / <u>Flowing</u> / NA				Tide: Rising/ Falling/ Slack/ <u>NA</u>				
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	0905	0.2	0.1	0.2	3.27	38.51	6.89	0.34	699	22.85		
CEN				S								
Biological Samples Collected: None HA <u>SCI</u> RPS <u>Act</u> Algae ID LVS LVI Other:												
SBIO ID Numbers: SBIO-ID: <u>80561</u> HA-ID: <u>16455</u> RPS-ID: <u>2316</u> Macrophyte-ID: <u>11568</u> 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	SA9203100	07/22/20	☒ <2				
Metals	☒ W-ICPMS ☐ W-ICP				☒ Ice ☒ HNO3	NA		☒ <2				
Filtered Nutrients	☒ W-PO4-F ☐ Field Filtered 0.45 µm Filter				☒ Ice							
Chlorophyll	☒ CHL-SUITE-W				☒ Ice							
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CHC / W-COLOR / W-SO4-IC / W-TDS				☒ Ice							
Physical/Aggregate (Marine)	☐ Alkalinity / W-BR-IC / 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-BacR ☐ PCR-GULL2				☐ Ice							
	☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD				☐ Ice							
Tracers	☐ W-E8321-DI ☐ W-E8321-MS				☐ Ice							
Pesticides	☒ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-E8321-DI				☒ Ice							
	☐ W-PCL-SQ-R ☐ W-E8321-MS ☐ W-CARB-AA											
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C				☐ Ice							
Notes:				Field ID/WIN ID				Barcode: G3SD0149				
				Location				Barcode: YellowFever@LittletonRd				
Signature: <u>Nicole Reistad</u>				Date: 12/17/2019								

LIMS EVENT ID: 50-DIST-2019-12-19-01

WIN Import ID:

Enter Field Parameters, Verify Station ID In LIMS DMT: CH 12/20/19

QC Station ID, Field Parameters In LIMS DMT:

Scan/Save Field Sheets

Migrate Data to WIN:

Verify Data In WIN:

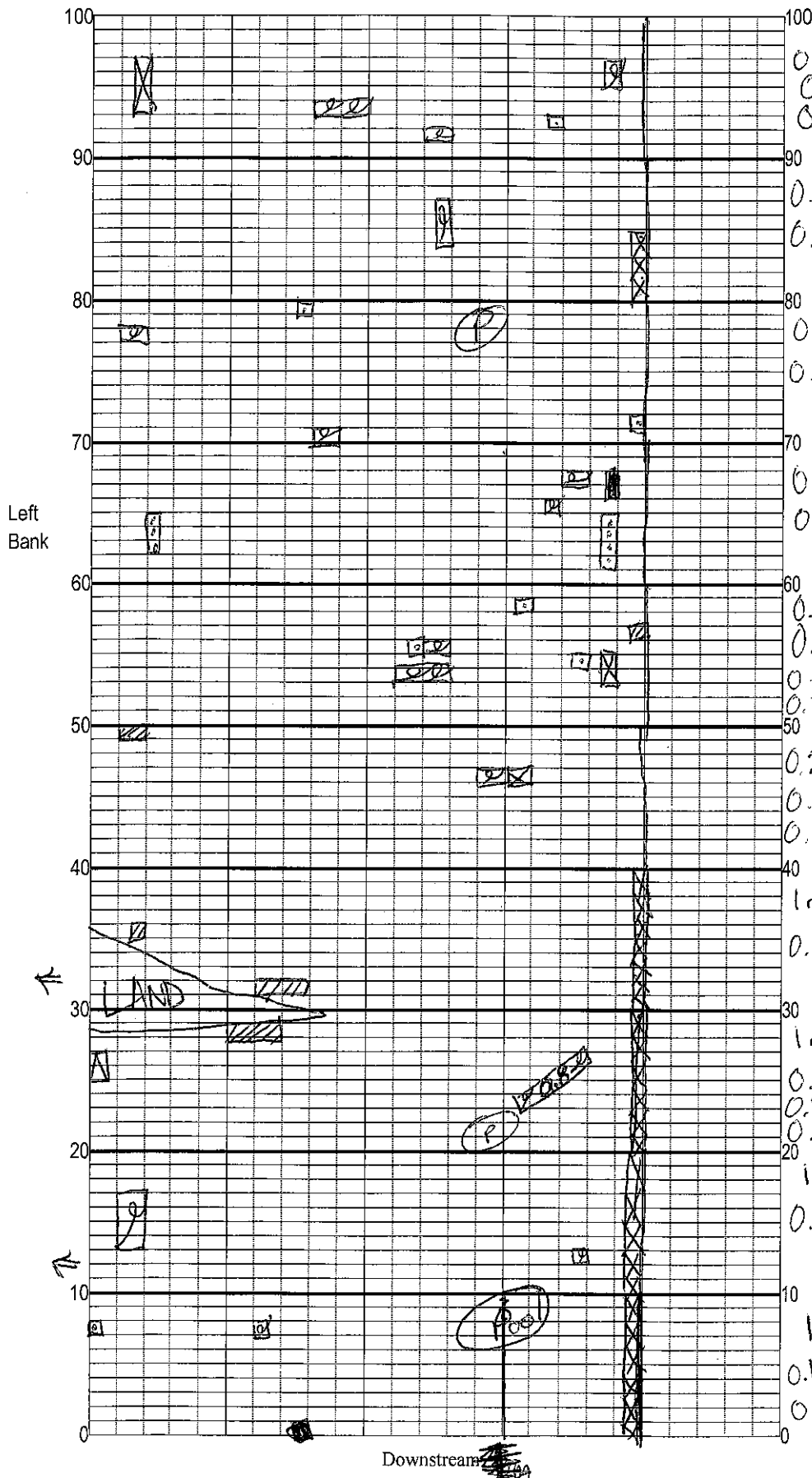
(Initials/Date)

(Initials/Date)

(Initials/Date)

(Initials/Date)

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



0.4X Location: Yellow Fever Creek
 0.8S
 0.1AM Date: 12/17/2019
 Sampler: Nicole Reistad

0.5X 100 m: Latitude _____
 Longitude _____
 0.3S 0 m: Latitude 26.6973248
 Longitude -81.9201870

0.2AM Substrates: Code key, draw proportionate habitat abundance. %
 0.4S
 [Symbol] Snags 1.1
 [Symbol] Roots/undercut banks 0.3
 [Symbol] Leaf Packs (or mats) 1.3
 [Symbol] Aquatic Macrophytes 0.35
 [Symbol] Rocks 0.05
 [Symbol] Pools total # observed = 3
 # range expected = 2-4

Average width 4 m
 Average depth _____ m

Velocity measured at _____ meter mark.

WQ & chemistry taken at _____ 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:

0.9S TOTAL 0.08 10S - 50m
 1m X 4.4m S 7S - 25m
 0.1AM 1.4m 22S - 10m
 0.1S 0.2 Rocks
 1.2 Roots

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

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

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
REMARKS:	COUNTY:	LOCATION:		FIELD ID/NAME:

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>7</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 <u>7</u> 6	5 4 3 2 1
Substrate Availability <u>3</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 <u>3</u> 2 1
Water Velocity <u>8</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 <u>8</u> 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>11</u> ----- Primary Score <u>29</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 <u>11</u>	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 Artificial Channelization <u>11</u>	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening in the past (>25 yrs) but mostly recovered. 15 14 13 12 <u>11</u>	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. <u>10 9 8 7 6</u>	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank <u>9</u> Left Bank <u>9</u>	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. 10 <u>9</u> <u>L</u> <u>R</u>	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 woody root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>10</u> Left Bank <u>3</u>	Width of vegetation greater than 18 m <u>R</u> <u>10</u> 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 <u>L</u> <u>3</u> 2 1
Riparian Zone Vegetation Quality Right Bank <u>7</u> Left Bank <u>3</u> Secondary Score <u>52</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. <u>R</u> 8 <u>7</u> 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). <u>L</u> <u>3</u> 2 1

81

TOTAL SCORE

Date: <u>12/17/2019</u>	Analyst: <u>Nicole Reistad, Kirby Wolfe, Chris Hornmuth</u>	Signature: <u>[Signature]</u>
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DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID _____ LATITUDE 26.6978538
 COUNTY Lee STORET # _____ LONGITUDE -81.9202369
 DATE 12/17/19 TIME 0905 SAMPLING AGENCY DEP SOROC
 SITE NAME Yellow Fern Creek @ Littleton Rd
 FIELD ID/NAME G3SD0149 RECEIVING BODY OF WATER Caloosahatchee

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>40</u> Silviculture <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>40</u> Commercial <u>20</u> Industry <u>0</u> Other (Specify) <u>0</u>								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) <u>4</u> Depth (m)/Velocity (m/sec) Transect _____ m/s <u>0.08</u> m/s _____ m/s _____ m deep <u>0.2</u> m deep _____ m deep			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>6</u> Right Bank: <u>18+</u>						Hydrologic Modification Score (per FT 3101) <u> </u>			
High Water Mark: _____ + _____ = _____ (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			WATER QUALITY							
			Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top:			<u>0.1</u>	<u>22.85</u>	<u>6.89</u>	<u>3.27</u>	<u>38.11</u>	<u>699</u>	<u>0.39</u>	<u>0.2</u>
Mid:										☒ VOB
Bottom:										
Meter ID: <u>Deplorable</u>			TOTAL DEPTH <u>0.2</u>							
Woody Debris (Snags) <u>1.1</u> <u>7</u> Undercut Banks / Roots <u>0.3</u> <u>2</u> Leaf Packs or Mat <u>1.3</u> <u>7</u> Aquatic Vegetation <u>0.35</u> <u>2</u> Rock or Shell Rubble.. <u>0.05</u> <u> </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 ☐				
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SA9203100</u> Exp: <u>07/02/20</u>			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐			Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐				
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No <u>CH</u> Lot Number: <u>SA9203100</u> Exp: <u>07/02/20</u>			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐							
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☐ ☒ ☐ Iron/Sulfur Bacteria: ☐ ☒ ☐ ☐			AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.							
SAMPLING TEAM <u>Chris Harmonik, Nicole Perstad, Kirby Wolfe</u>						SIGNATURE 		DATE: <u>12-20-19</u>		

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

Waterbody: Yellow Fever Creek Date: 12/12/12 County: Lee Storet Number: _____
 Analyst: Chris Hornum 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	
Alternanthera philoxeroides												Micranthemum glomeratum											
Bacopa caroliniana												Micranthemum umbrosum											
Bacopa monnieri												Myriophyllum aquaticum											
Bidens mitis												Najas guadelupensis											
Boehmeria cylindrica												Nuphar luteum											
Centella asiatica												Orontium aquaticum											
Ceratophyllum demersum												Panicum hemitomon											
Chara												Panicum repens											
Cicuta maculata												Panicum rigidulum											
Cladium jamaicense												Pistia stratioides											
Colocasia esculenta												Polygonum glabra											
Commelina diffusa												Polygonum hydropiperoides											
Commelina virginica												Polygonum punctatum											
Crinum americanum												Pontedaria cordata											
Diodia virginiana												Potamogeton illinoensis											
Eichhornia crassipes												Ruellia simplex											
Eleocharis (wispy viviparous)												Sacciolepis striata											
Hydrilla verticillata												Sagittaria kurziana											
Hydrocotyle												Sagittaria lancifolia											
Hygrophila polysperma												Sagittaria latifolia											
Hymenocallis												Salvinia minima											
Lachnanthes caroliniana												Samolus parviflora											
Landoltia punctata												Saururus cernuus											
Lemna												Sparganium americanum											
Limnophila sessiflora												Typha											
Ludwigia leptocarpa												Vallisneria americana											
Ludwigia palustris												Zizania aquatica											
Ludwigia peruviana												<u>Nymphaea</u>	<u>1</u>	<u>1</u>			<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>			
Ludwigia repens												<u>Home Depot spp.</u>	<u>1</u>	<u>1</u>						<u>1</u>	<u>1</u>		
Luziola fluitans																							
If no Dominant or Co-Dominant were selected, indicate with "X"	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>													
Indicate % cover macrophytes per section																							
0-5% Macrophyte Coverage	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>													
>5 and ≤10% Macrophyte Coverage																							
>10 and ≤25% Macrophyte Coverage																							
>25 and ≤50% Macrophyte Coverage																							
> 50% Macrophyte Coverage																							

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:					County:		Date:		Investigators:	
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	STORET Station Number:
2				2						
3				3						
4				4						
5			64	5			50			
6				6						
7				7						
8				8						
9				9						
10	1	N			70	1	N			# points ranked 4-6 total points assessed % points ranked 4-6
	2					2				
	3					3				
	4					4				
	5			73		5			58	
	6					6				
	7					7				
	8					8				
	9					9				
20	1	N			80	1	N			Check accompanying data collected at same site/date. Algal mat sample Linear Veg Survey Habitat Assessment SCI/Biorecon Water sample RQ-
	2					2				
	3					3				
	4					4				
	5			72		5			72	
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N			90	1	N			Algal Thickness Rank
	2					2				
	3					3				
	4					4				
	5			73		5			77	
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N			100	1	N			N rough, no algae, slimy, algae up to 1mm 3 >1mm - 6mm 4 >6mm - 20mm 5 >20mm - 10 cm 6 >10 cm
	2					2				
	3					3				
	4					4				
	5			70		5			91	
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N				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 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%.
	2					2				
	3					3				
	4					4				
	5			64		5				
	6					6				
	7					7				
	8					8				
	9					9				

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