

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

SAMPLING AGENCY: <u>S ROC</u>		STORET STATION NUMBER: <u>IMKFSHCK</u>	DATE (MM/DD/YY): <u>09/13/2018</u>	RECEIVING BODY OF WATER: <u>Corkscrew Swamp</u>
REMARKS:	COUNTY: <u>Collier</u>	LOCATION: <u>26.4333738, -81.4625264</u>	FIELD ID/NAME: <u>Cow Slough</u>	

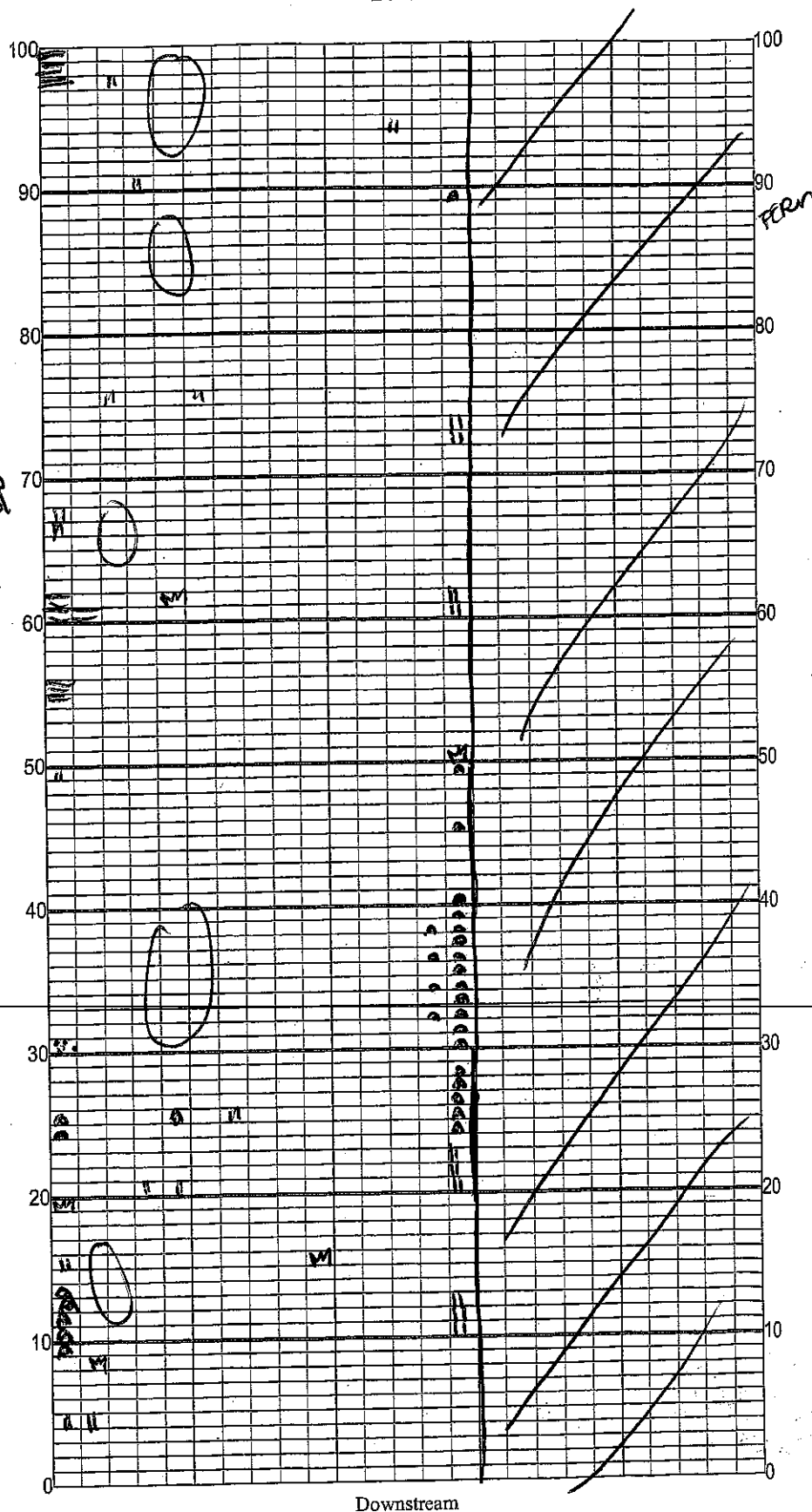
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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>7</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 <u>7</u> 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>15</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 <u>15</u> 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>13</u> Primary Score <u>47</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 <u>13</u> 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 Artificial Channelization <u>10</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 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. <u>10</u> 9 8 7 6	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>6</u> <u>7</u> Left Bank	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 9	Only meets 2 of the 3 requirements for optimal bank stability. <u>L</u> <u>R</u> 8 <u>7</u> <u>6</u>	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>5</u> <u>4</u> Left Bank	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system <u>R</u> <u>L</u> <u>5</u> <u>4</u>	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>4</u> <u>4</u> Left Bank Secondary Score <u>40</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. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. <u>R</u> <u>L</u> 5 <u>4</u>	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

87

TOTAL SCORE

Date: <u>09/13/2018</u>	Analyst: <u>MARYANN DUGAN, NICKIE REISTAD</u>	Signature: <u>Maryann Dugan</u>
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DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet



Location: Cow Slough @ Lake Trafford Rd

Date: 09/13/2018

Sampler: MD

100 m: Latitude 26.4340478
Longitude -81.4626803
0 m: Latitude 26.4333738
Longitude -81.4625264

Substrates: Code key, draw proportionate habitat abundance. %

	Snags	<u>3</u>	<u>6.0</u>
	Roots/undercut banks	<u>1</u>	<u>2.0</u>
	Leaf Packs (or mats)	<u>0.125</u>	<u>2.5</u>
	Aquatic Macrophytes	<u>0.5</u>	<u>1.0</u>
	Rocks	<u>3.75</u>	<u>7.5</u>
	Pools	total # observed = <u>5</u> # range expected = <u>4</u>	

Average width 2.0 m

Average depth 0.3 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:

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

$$\text{velocity} = 4.5 \text{ m/s} \\ = 0.25 \text{ m/s}$$

8.375 Habitat

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

Revision Date: June 2, 2011

Date: 09/13/9

County: Collier

Waterbody: Cow Slough

MARYANN DUGAN, NUNE REISTAD

Signature:

Harvath

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**

Species for additional taxa names: bold is exotic invasive												Meter Mark												Specime n collected (check)																					
HERBACEOUS SPECIES												0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specime n collected (check)	HERBACEOUS SPECIES												0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specime n collected (check)
Alternanthera philoxeroides																							Micranthemum glomeratum																						
Bacopa caroliniana																							Micranthemum umbrosum																						
Bacopa monneri																							Myriophyllum aquaticum																						
Bidens mitis																							Najas guadelupensis																						
Boehmeria cylindrica																							Nuphar luteum																						
Centella asiatica																							Orontium aquaticum																						
Ceratophyllum demersum																							Panicum hemitomon																						
Chara sp.																							Panicum repens	X			XX																		
Cicuta maculata																							Panicum rigidulum																						
Cladium jamaicense																							Pistia stratioides																						
Colocasia esculenta																							Polygonum glabra																						
Commelina diffusa																							Polygonum hydrophyloides																						
Commelina virginica																							Polygonum punctatum																						
Crinum americanum																							Pontedaria cordata																						
Cyperus																							Potamogeton illinoensis																						
Diodia virginiana																							Ruellia simplex																						
Eichhornia crassipes																							Sacciolepis striata																						
Eleocharis (wispy viviparous)																							Sagittaria kurziana																						
Hydrilla verticillata																							Sagittaria lancifolia																						
Hydrocotyle sp.												X				X							Sagittaria latifolia																						
Hygrophila polysperma																							Salvinia minima																						
Hymenachne amplexicaulis																							Samolus parviflora																						
Hymenocallis																							Saururus cernuus																						
Lachnanthes caroliniana																							Sparganium americanum																						
Landoltia punctata																							Sphagneticola trilobata (Wedelia)																						

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Cow Slough</u>					County: <u>Collier</u>		Date: <u>09/13/18</u>		Investigators: <u>Nicole Reistad, Maryann Dugan</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					2				
	3					3				
	4					4				
	5			54		5			95	
	6					6				
	7					7				
	8					8				
	9					9				
10	1	N			70	1	N			
	2					2				
	3					3				
	4					4				
	5			54		5			94	
	6					6				
	7					7				
	8					8				
	9					9				
20	1	N			80	1	N			
	2					2				
	3					3				
	4					4				
	5			95		5			94	
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N			90	1	N			
	2					2				
	3					3				
	4					4				
	5			93		5			67	
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N			100	1	N			
	2					2				
	3					3				
	4					4				
	5			95		5			85	
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N				1	N			
	2					2				
	3					3				
	4					4				
	5			96		5				
	6					6				
	7					7				
	8					8				
	9					9				

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%.

STORET Station Number: WIN
IMKFSHCK

Secchi depth 0.4
Estimated? No

points ranked 4-6 0
total points assessed 99
% points ranked 4-6 0

Check accompanying data collected at same site/date

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

RQ-2018-09-10-70

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

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 RQ-2018-09-10-72 ARG ID 8052
 COUNTY Collier SAMPLING AGENCY SROC
 DATE 09/13/2018 TIME 1111
 SITE NAME Low Slough @ Lake Trafford Rd
 FIELD ID/NAME IMKFSHCV RECEIVING BODY OF WATER Corkscrew Swamp

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>10</u> Silviculture <u>0</u> Field/Pasture <u>30</u> Agricultural <u>30</u> Residential <u>20</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</u>								Landscape Development Intensity Index (LDI) <u>0</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>2.0</u> m wide <u>0.25</u> m/s <u>0.25</u> m/s <u>0.25</u> m/s <u>0.3</u> m deep <u>0.3</u> m deep <u>0.3</u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>8</u> Right Bank: <u>10</u>				Hydrologic Modification Score (per FT 3101) <u>0</u>				
High Water Mark: <u>0.5</u> + <u>0.3</u> = <u>0.8</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 Woody Debris (Snags) <u>0</u> <u>0</u> <u>0</u> Undercut Banks /Roots <u>0</u> <u>0</u> <u>0</u> Leaf Packs or Mat <u>0</u> <u>0</u> <u>0</u> Aquatic Vegetation <u>0</u> <u>0</u> <u>0</u> Rock or Shell Rubble <u>0</u> <u>0</u> <u>0</u> Sand/Silt <u>0</u> <u>0</u> <u>0</u> Sand/Gravel <u>0</u> <u>0</u> <u>0</u> Mud/Muck/Silt <u>0</u> <u>0</u> <u>0</u> Other <u>0</u> <u>0</u> <u>0</u>			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.5</u> <u>28.5</u> <u>5.87</u> <u>3.90</u> <u>51.3</u> <u>189</u> <u>0.09</u> <u>0.3</u> Mid: <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> Bottom: <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> <u>0</u> Meter ID: <u>SNEK</u> Meter Verify: ☒ Y ☐ N <u>0.3</u>					
ABUNDANCE Periphyton: ☒ Absent ☐ Rare ☐ Common ☐ Abundant Fish: ☐ Absent ☐ Rare ☒ Common ☐ Abundant Aquatic Plants: ☐ Absent ☒ Rare ☐ Common ☐ Abundant Iron/Sulfur Bacteria: ☒ Absent ☐ Rare ☐ Common ☐ Abundant			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>SAC101020</u> Exp: <u>01/11/19</u>			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐		
			Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: <u>0</u> Exp: <u>0</u>			Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐		
			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐					
			WEATHER CONDITIONS / NOTES: <u>partly cloudy, hot</u>					
			☒ The antecedent hydrologic conditions have been met to my best knowledge.					
SAMPLING TEAM <u>MARYANN DUGAN, NICOLE REISTAD</u>			SIGNATURE: <u>Maryann Dugan</u>			DATE: <u>09/13/2018</u>		