

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CHAIN OF CUSTODY FORM

Date: 9/7/2021
Customer: SO-DIST
RQ: RQ-2021-09-06-62
Collected By: William Mullen, Nicole Reistad
Sampling Agency: FDEP
Project ID: SMP

PLEASE RETURN THE ORIGINAL OF THIS FORM WITH SAMPLE SUBMITTAL
FORMS AND THE COOLER PACKING WORKSHEET TO THE LAB

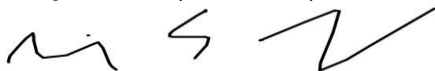
Number of Coolers Shipped: 1

Delivery Method: FedEx

FIELD ID (Labels) submitted under this RQ for this collection date.

Site Location	Field ID/WIN ID
HorseshoeCanal@NW15Ter	 G2SD0050
ShadrowCanal@ElDorado	 G2SD0051
FB	 FB_09072021

RELINQUISHED BY(SIGNATURE):



DATE/TIME: 9/7/2021 1500
EST

THIS SECTION TO BE COMPLETED BY LABORATORY

Rec'd/Inspected By:

Rec'd/Inspected

Date:



RQ-2021-09-06-62	Collected By: Nicole Reistad, William Mullen
Customer: FDEP	Field Report Prepared by: Nicole Reistad, William Mullen
Project ID: SMP	Sampling Agency: FDEP
WIN ID/Field ID:  WIN ID/Field ID: G2SD0050	Comments: Microbiology sample(s) submitted to contract laboratory

Location:
Location: HorseshoeCanal@NW15Ter

Matrix: Fresh (Check One) ☒ Grab ☐ Composite

Date and Time {EST}	DO (mg/L)	DO (%SAT)	Temp. ©	pH	Sample Depth (m)	Secchi Depth	Total Depth (m)	Sp COND (µmhos /cm)	Salinity (PPTH							
9/7/2021 1000	6.11	82	30.65	7.45	0.3	1.5	2.2	654	0.31							
Parameter Suite		Parameter Methods				Preservation		pH Check		# Bottles sent to Lab	Bottle Group					
Preserved Nutrients (P-500ML)	X	W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP				X	Ice	X	H2SO4*	X	<2	1	A			
	Lot #		SA1105060		Exp:		04/30/22									
Metals (P-500ML)		W-ICPMS			W-ICP		W-HARD		Ice		HNO3*		<2			
	Lot #				Exp:											
Filtered Nutrients (P125ML)	X	W-PO4-F		X	Field Filtered 0.45 µm Filter		x	Ice				1	A			
	Filter Lot #		17162587													
	Syringe Lot #		0079931													
Chlorophyll (BP-1L)	X	CHLSUITE-W				x	Ice					1	A			
Physical/Aggregate (Fresh) (P-1L)	X	Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W- TDS				x	Ice					1	A			
Physical/Aggregate (Marine) (P-1L)		Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY					Ice									
Macroinvertebrates (PJ-2L)		MI-FW-QLDC	Formalin Lot #					Formalin								
Periphyton (PT-50ML)		ALGAE-ID					Ice									
Microbiology (Contract Lab Bottle)	X	E Coli			F Coli		Enterococci	x				Ice		1	A	
	X	Contract Lab														
Molecular (QPCR-P-500ML)		PCR-HF183			PCR-BacR		PCR-DG3					Ice				
		PCR-GULL2			PCR-GFD											
Tracers (BG-500ML)		W-E8321-DI			W-E8321-MS			Ice								
Pesticides (BG-500ML) (BG-1L)		W-E8321-DI		W-E8321-MS		W-PSNP-TQ						Ice				
		W-PCL-TQ-R		W-CARB-AA (5 ml of MCAA** Buffer Solution)		W-CT-CL-R										
Phytoplankton		DTY-QN-C			PKD-QN-BV			Ice								



RQ-2021-09-06-62	Collected By: William Mullen, Nicole Reistad
Customer: FDEP	Field Report Prepared by: William Mullen, Nicole Reistad
Project ID: SMP	Sampling Agency: FDEP
WIN ID/Field ID:  WIN ID/Field ID: G2SD0051	Comments: Microbiology sample(s) submitted to contract laboratory

Location:
Location: ShadrowCanal@ElDorado

Matrix: Fresh (Check One) ☒ Grab ☐ Composite

Date and Time {EST}	DO (mg/L)	DO (%SAT)	Temp. ©	pH	Sample Depth (m)	Secchi Depth	Total Depth (m)	Sp COND (µmhos /cm)	Salinity (PPT _h)						
9/7/2021 1220	8.09	109.3	31.13	7.68	0.3	0.8	0.8	681	0.33						
Parameter Suite		Parameter Methods				Preservation		pH Check		# Bottles sent to Lab	Bottle Group				
Preserved Nutrients (P-500ML)	X	W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP				X	Ice	X	H2SO4*	X	<2	1	A		
	Lot #		SA1105060		Exp:		04/30/22								
Metals (P-500ML)		W-ICPMS			W-ICP		W-HARD		Ice		HNO3*		<2		
	Lot #				Exp:										
Filtered Nutrients (P125ML)	X	W-PO4-F		X	Field Filtered 0.45 µm Filter		x	Ice				1	A		
	Filter Lot #		17162587												
	Syringe Lot #		0079931												
Chlorophyll (BP-1L)	X	CHLSUITE-W				x	Ice	1				A			
Physical/Aggregate (Fresh) (P-1L)	X	Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W- TDS				x	Ice	1				A			
Physical/Aggregate (Marine) (P-1L)		Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY					Ice								
Macroinvertebrates (PJ-2L)		MI-FW-QLDC	Formalin Lot #					Formalin							
Periphyton (PT-50ML)		ALGAE-ID					Ice								
Microbiology (Contract Lab Bottle)	X	E Coli			F Coli		Enterococci	x				Ice	1	A	
	X	Contract Lab													
Molecular (QPCR-P-500ML)		PCR-HF183			PCR-BacR		PCR-DG3					Ice			
		PCR-GULL2			PCR-GFD										
Tracers (BG-500ML)		W-E8321-DI			W-E8321-MS							Ice			
Pesticides (BG-500ML) (BG-1L)		W-E8321-DI		W-E8321-MS		W-PSNP-TQ						Ice			
		W-PCL-TQ-R		W-CARB-AA (5 ml of MCAA** Buffer Solution)		W-CT-CL-R									
Phytoplankton		DTY-QN-C			PKD-QN-BV							Ice			



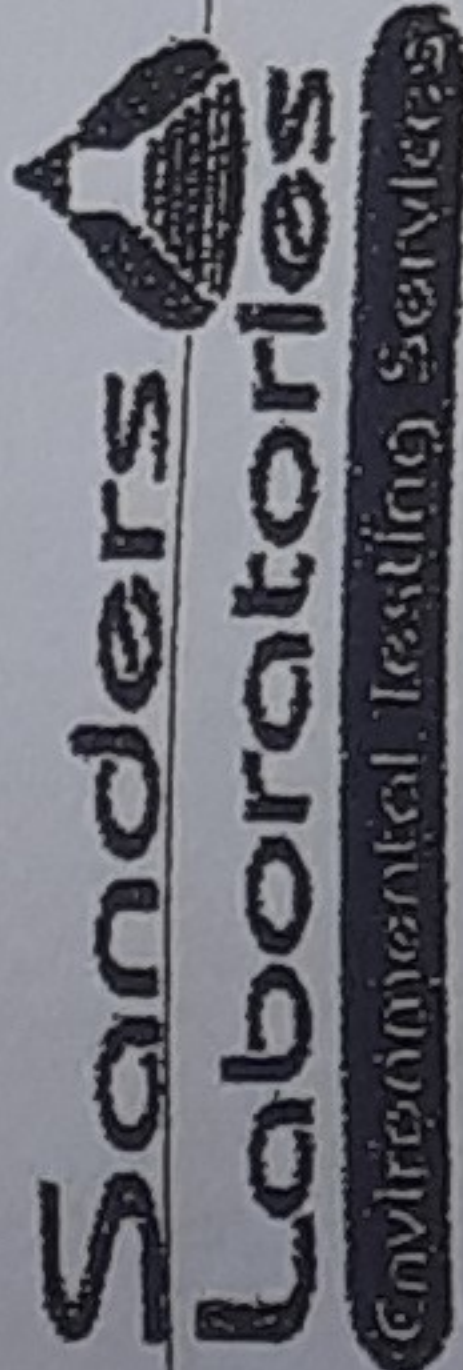
RQ-2021-09-06-62	Collected By: William Mullen, Nicole Reistad
Customer: FDEP	Field Report Prepared by: William Mullen, Nicole Reistad
Project ID: SMP	Sampling Agency: FDEP
WIN ID/Field ID:  WIN ID/Field ID: FB_09072021	Comments: Microbiology sample(s) submitted to contract laboratory

Location:
Location: FB

Matrix: DI Water

(Check One) ☒ Grab ☐ Composite

Date and Time {EST}	DO (mg/L)	DO (%SAT)	Temp. ©	pH	Sample Depth (m)	Secchi Depth	Total Depth (m)	Sp COND (µmhos /cm)	Salinity (PPTH					
9/7/2021 1230														
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							
	Lot #		Exp:											
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									
	Filter Lot #													
	Syringe Lot #													
Chlorophyll (BP-1L)	CHLSUITE-W				Ice									
Physical/Aggregate (Fresh) (P-1L)	Alkalinity / W-F / W-TSS / TURBIDITY / W-CHC / W-COLOR / W-SO4-IC / W- TDS				Ice									
Physical/Aggregate (Marine) (P-1L)	Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY				Ice									
Macroinvertebrates (PJ-2L)	MI-FW-QLDC	Formalin Lot #			Formalin									
Periphyton (PT-50ML)	ALGAE-ID				Ice									
Microbiology (Contract Lab Bottle)	E Coli		F Coli	Enterococci	Ice									
	Contract Lab													
Molecular (QPCR-P-500ML)	PCR-HF183		PCR-BacR	PCR-DG3	Ice									
	PCR-GULL2		PCR-GFD											
Tracers (BG-500ML)	W-E8321-DI		W-E8321-MS		Ice									
Pesticides (BG-500ML) (BG-1L)	W-E8321-DI	W-E8321-MS		W-PSNP-TQ	Ice									
	W-PCL-TQ-R	W-CARB-AA (5 ml of MCAA** Buffer Solution)		W-CT-CL-R										
Phytoplankton	DTY-QN-C		PKD-QN-BV		Ice									



CHAIN OF CUSTODY RECORD

Project #
(Lab Use Only)

Client
Florida Dept. of Environmental Protection

Address
2600 Blairstone Rd. Tallahassee, FL 32399

Phone
850-245-8085 239-470-0873

Fax

Report To: DEP-OverflowMicro@dep.state.fl.us

Bill to: Carina Tull

P.O. # LAB #039 896338

Preservative: HCL = H, HNO₃ = N, Na₂S₂O₃ = ST

H₂SO₄ = S, NaOH = SH, NH₄Cl = NH

Project Name: SWP

Project Location: Cape Coral

Customer Type: Florida DEP - South ROC

Kit #:

Requested Due Date:

Sampled By (PRINT)

Sampler Signature

Sample Description

F G2500050

F G2500051

Sample

Date

Time

Type

09/07/11 1005 Sub

09/07/11 1220 Sub

Preservatives

Ice

S

Analysis Requested

E. coli

Enterococci

Fecal

Sample ID #

(Lab Use Only)

Date

Relinquish Signature

Date

Time

09/07/11 1430

Samples are ambient water

2021-09-06-62

RQ-2019

Client Initial:

Samples On Ice

Yes No

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

SAMPLE ID

COUNTY

DATE

SITE NAME

FIELD ID/NAME

ORG ID

STORET #

TIME

LATITUDE

LONGITUDE

SAMPLING AGENCY

Lee

09/07/21

Shadrow Canal

GZSD0051

21FLFTM

GZSD0051

1220

26.64898

-82.02294

SOROC

RECEIVING BODY OF WATER

Matlocka Pass

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Forest/Natural

Silviculture

Field/Pasture

Agricultural

Residential

Commercial

Industry

Other (Specify)

590

0

0

0

8590

890

290

0

X

Landscape Development Intensity Index (LDI)

Local Watershed Erosion (select one) :

☒None

☐Slight

☐Moderate

☐Heavy

Local Watershed NPS Pollution :

☐No evidence

☐Slight

☐Moderate

☐Heavy

Width of Riparian Vegetation (m) on Each Buffer Side

Left Bank :

3

Right Bank :

3

Hydrologic Modification Score (per FT 3101)

High Water Mark:

2.0

+

1.5

=

3.5

(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%)

Typical Width (m) Depth (m)/Velocity (m/sec) Transect

27

m wide

6.061

m/s

m/s

m/s

1.5

m deep

m deep

m deep

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

% Coverage

Woody Debris (Snags)

0

% Coverage

Undercut Banks / Roots

0.0015

% Coverage

Leaf Packs or Mat

0

% Coverage

Aquatic Vegetation

0.44

% Coverage

Rock or Shell Rubble..

0

% Coverage

Sand.....

% Coverage

Mud / Muck / Silt

% Coverage

Other

% Coverage

Other

INVERT

Times Sampled

PERI

Times Sampled

WATER QUALITY

Depth (M)

Temp. (°C)

pH (SU)

D.O. (MG/L)

D.O. Sat (%)

Cond. (UMHO/CM)

Salinity (PPT)

SECCHI (M)

Top :

0.3

31.13

7.68

8.09

109.3

681

0.33

0.8

Mid:

☒VOB

Bottom

Meter ID:

Old Man Jenkins

0.8

Water Odors

Normal

☒Petroleum

☐

Sewage

☐Chemical

☐Other

☐

Water Surface Oils

Normal

☒Sheen

☐

Globs

☐Slick

☐Other

☐

Water Sample Taken?

☒Yes

☐No

Sample Preserved?

☒Yes

☐No

Lot Number:

SANOS060

Exp:

04/30/22

Algae Sample Taken?

☐Yes

☒No

Sample Preserved?

☐Yes

☐No

Lot Number:

SANOS060

Exp:

04/30/22

Color

Tannic

☒Green (Algae)

☐

Clear

☐Other (Specify)

☐

Clarity

Clear

☐Slightly Turbid

☒

Turbid

☐Opaque

☐

ABUNDANCE

Not Obs.

Rare

Common

Abundant

Periphyton:

☒

☐

☐

☐

Fish:

☐

☐

☒

☐

Aquatic Plants:

☐

☒

☐

☐

Iron/Sulfur Bacteria:

☒

☐

☐

☐

System Type:

Stream

☐Lake

☐Wetland

☐Estuary

☐Other(Specify)

☒Canal

AMBIENT FIELD CONDITIONS / NOTES:

☐The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM

SOROC

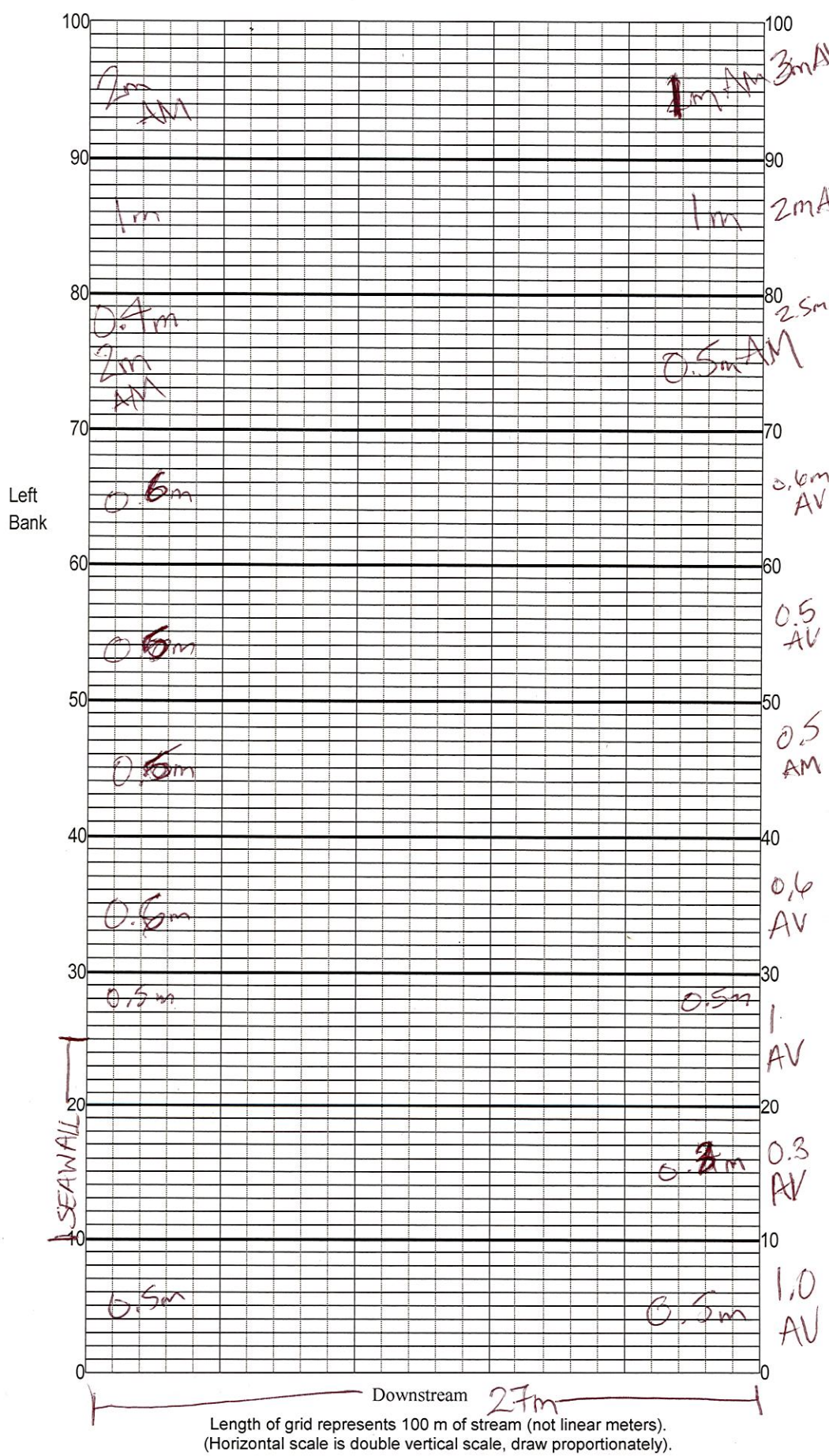
SIGNATURE :

RS

DATE:

09/09/2021

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



Location: G2SD0051 Shadow Canal

Date: 09/07/21

Sampler: Nicole Reistad

100 m: Latitude 26.6489645
Longitude -82.0220251

0 m: Latitude 26.6489759
Longitude -82.0230874

Substrates: Code key, draw proportionate habitat abundance. %

☒	Snags	<u>0</u>
☒	Roots/undercut banks	<u>0.0015</u>
☒	Leaf Packs (or mats)	<u>0</u>
☒	Aquatic Macrophytes	<u>0.44</u>
☒	<u>Rocks</u>	<u>0</u>
☐		
☐	Pools	total # observed = <u>0</u> # range expected = <u>1-2</u>

Average width 27 m
Average depth 1.5 m

Velocity measured at 80 meter mark.

WQ & chemistry taken at 80 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:
12m AV
Visit ID
83047

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

SAMPLING AGENCY: <u>4DEP - SROC</u>		STORET STATION NUMBER: <u>GZSD0051</u>	DATE (MM/DD/YY): <u>09/07/21</u>	RECEIVING BODY OF WATER: <u>Charlotte Harbor</u>
REMARKS:	COUNTY: <u>Lee</u>	LOCATION: <u>Shadow Canal</u>	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>2</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 <u>2</u> 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 <u>2</u> 1
Water Velocity <u>1</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 <u>2</u> 1
Habitat Smothering <u>2</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 <u>2</u> 1
Primary Score <u>6</u>				
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>2</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 <u>2</u> 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>4</u> Left Bank <u>4</u>	10 9	8 7 6	5 <u>4</u>	<u>3</u> <u>2</u> 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>2</u> Left Bank <u>2</u>	10 9	8 7 6	5 4	<u>3</u> <u>2</u> 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>2</u> Left Bank <u>2</u>	10 9	8 7 6	5 4	<u>3</u> <u>2</u> 1
Secondary Score <u>18</u>				
<u>24</u>	TOTAL SCORE			

Date: <u>09/07/21</u>	Analyst: <u>Nicole Reistad</u>	Signature: <u>[Signature]</u>
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Site: Shadrow Canal

County: Lee

Date: 09/07/21

Investigators:

Nicole Reistad

STORET Station Number:

Secchi depth	
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- 2021-09-06-62

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: Shadow Canal
Analyst: Nicole Reistad
Date: 09/07/2 County: Lee
Comments:
Instructions: Note taxa growing in the water with a checkmark in the boxes below.
Signature: Nicole Reistad Storet Number: GZSD0051

62-160.800, F.A.C.