



RQ-2017-08-14-57
8/10/2017

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

2082A

G2SD081017-2

Field ID

Pirate Canal Middle CHARHB0097FTM

STORET STATION
NUMBER:

DATE

(MM/DD/YY)

SAMPLING AGENCY:

FIELD ID/NAME:

COUNTY:

LOCATION:

FDEP South ROC

RECEIVING BODY OF WATER:

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>3</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 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 (3) 2 1
Water Velocity <u>13</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 2 1
Habitat Smothering <u>6</u> Primary Score <u>25</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 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 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>3</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 (3) 2 1
Bank Stability Right Bank <u>4</u> Left Bank <u>4</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	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) LR	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>8</u> Left Bank <u>9</u>	Width of vegetation greater than 18 m 10 (9)	Width of vegetation >12 to 18m R (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 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>8</u> Left Bank <u>8</u> Secondary Score <u>44</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. LR (8) 7 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). 3 2 1

69 TOTAL SCORE

Date: 8/10/17

Analyst:

Ben Paswater

Signature:

Ben Paswater

8/10/2017

2082A

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000-3 Physical/Chemical Characterization Field Sheet

Pirate Canal Middle CHARHB0097FTM

LATITUDE 26.814972
LONGITUDE -81.992506
SAMPLING AGENCY SOROC

SITE NAME

FIELD ID/NAME

RECEIVING BODY OF WATER *Gulf of Mexico*

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural 90 Silviculture Field/Pasture 10 Agricultural Residential Commercial Industry Other (Specify)							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) Depth (m)/Velocity (m/sec) Transect 4 m wide			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: 18 Right Bank: 18			Hydrologic Modification Score (per FT 3101)					
High Water Mark: 1.3 + 0.8 = 2.1 (m) (above present water level) (present depth) (above bed)			Artificially Impounded ☐ Yes ☒ No					
Artificiality ☐ No ☒ <u>und</u> Channelized: ☒ <u>Some recovery</u> ☐ Recent, severe			Canopy Cover % ☐ Open ☒ <u>Lightly Shaded (11-45%)</u> ☐ 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 % Coverage Woody Debris (Snags) <u>few</u> Undercut Banks / Roots Leaf Packs or Mat Aquatic Vegetation <u>4.8</u> Rock or Shell Rubble.. Sand..... Mud / Muck / Silt Other Other..... INVERT # Times Sampled PERI # Times Sampled 		WATER QUALITY <table border="1" style="width: 100%; border-collapse: collapse;"> <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> <tr> <td>Top :</td> <td><u>0.3</u></td> <td><u>32.3</u></td> <td><u>6.9</u></td> <td><u>9.2</u></td> <td><u>44</u></td> <td><u>116</u></td> <td><u>/</u></td> <td><u>0.8</u></td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>☒ VOB</td> </tr> <tr> <td>Bottom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>TOTAL DEPTH <u>1.8</u></td> </tr> </table> Meter ID: <u>#17</u>					Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top :	<u>0.3</u>	<u>32.3</u>	<u>6.9</u>	<u>9.2</u>	<u>44</u>	<u>116</u>	<u>/</u>	<u>0.8</u>	Mid:								☒ VOB	Bottom								TOTAL DEPTH <u>1.8</u>
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Mid:								☒ VOB																																	
Bottom								TOTAL DEPTH <u>1.8</u>																																	
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☒ ☐ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☐ ☒ ☐ Iron/Sulfur Bacteria: ☐ ☐ ☒ ☐		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"> Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ </td> <td colspan="2"> Water Surface Oils Normal ☒ Sheen ☒ Globbs ☐ Slick ☐ Other ☐ </td> </tr> <tr> <td colspan="2"> Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____ </td> <td colspan="2"> Color Tannic ☒ Green (Algae) ☐ Clear ☒ Other (Specify) ☐ </td> </tr> <tr> <td colspan="2"> Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____ </td> <td colspan="2"> Clarity Clear ☐ Slightly Turbid ☒ Turbid ☒ Opaque ☐ </td> </tr> </table>				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: _____ Exp: _____		Color Tannic ☒ Green (Algae) ☐ Clear ☒ Other (Specify) ☐		Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____		Clarity Clear ☐ Slightly Turbid ☒ Turbid ☒ Opaque ☐																									
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System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☒ <u>Canal</u>		AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge. <u>Water level had been recently high</u>																																							

SAMPLING TEAM

Ben Paswater, Chase Conley, Maryann Puzos

SIGNATURE _____

SIGNATURE: 

DATE _____

8/10/17

8/10/2017

2082A

G2SD081017-2

Field ID

STORET

Pirate Canal Middle CHARHB0097FTM

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD

Date:

County:

Charlotte

Waterbody:

Pirate Canal

Signature:

B. Jones

Comments:

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**

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 sp.												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											
Cyperus												Potamogeton illinoensis											
Diodia virginiana												Ruellia simplex											
Eichhornia crassipes												Sacciolepis striata											
Eleocharis (wispy viviparous)												Sagittaria kurziana											
Hydrilla verticillata												Sagittaria lancifolia											
Hydrocotyle sp.												Sagittaria latifolia											
Hygrophila polysperma												Salvinia minima											
Hymenachne amplexicaulis												Samolus parviflora											
Hymenocallis												Saururus cernuus											
Lachnanthes caroliniana												Sparganium americanum											
Landoltia punctata												Sphagneticola trilobata (Wedelia)											
Lemna sp.												Typha sp.											
Limnophila sessiflora												Urochloa mutica (Brachiaria)	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Ludwigia leptocarpa												Vallisneria americana											
Ludwigia palustris												Zizania aquatica											
Ludwigia peruviana										✓		Phragmites Aus				✓							
Ludwigia repens																							
Luziola fluitans						✓																	
If no Dominant or Co-Dominant were selected, indicate with "X"																							
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																							

8/10/2017

2082A



G2SD081017-2

Field ID

STORET

Pirate Canal Middle

CHARHB0097FTM

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

County: Charlotte

Investigators

BP MD CC

STORET Station Number:

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				60	1			
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
10	1				70	1			
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
20	1				80	1			
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
30	1				90	1			
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
40	1				100	1			
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
50	1					1			
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								

Secchi depth 0.8
Estimated? N

points ranked 4-6 0
total points assessed 96
% 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- 2017-08-14-57

Algal Thickness Rank

N	
1	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%.

DEP-SOP-001/01 Form FD 9000-4
Stream/River Habitat Sketch Sheet

RQ-2017-08-14-57

8/10/2017

2082A

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Field ID

STORET

Pirate Canal Middle CHARHB0097FTM



Location: _____
Date: 8/10/2017
Sampler: Ben Pauer

100 m: Latitude 26.815134
Longitude -81.991748
0 m: Latitude 26.814902
Longitude -81.992726

Substrates: Code key, draw proportionate habitat abundance. %

☒ Snags few

☐ Roots/undercut banks _____

☐ Leaf Packs (or mats) _____

☒ Aquatic Macrophytes 4-8

☐ _____

☐ _____

☒ Pools total # observed = 0
range expected = 4

Average width 4 ~~20~~ m
Average depth 0.8 m

Velocity measured at 05 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.

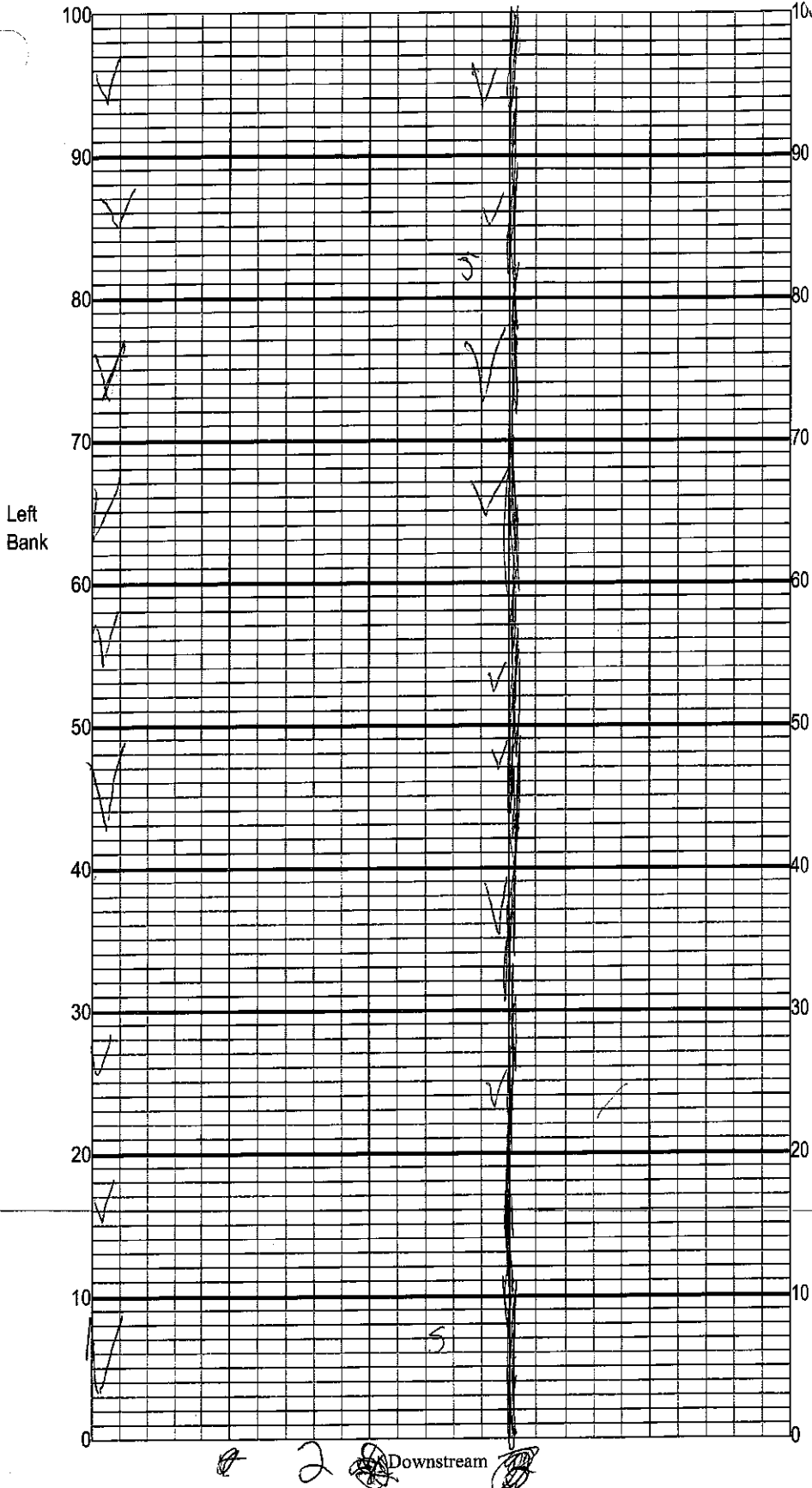
Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

iron shaw

V = 71

S = 3



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

Revision Date: June 2, 2011