



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

June 2016

PAGE ____ OF ____

Data Qualified?

Yes ☒ No ☐

STORET Station Name: Crane Creek at Country Club Road Date: 08/10/2016

(mm/dd/yyyy)

STORET Station ID: 27010338 WBID: 3085 Latitude: 28.0725139

(Decimal Degrees)

County: Brevard RQ - 2016-08-08-45 ORG ID: 21FLCEN Longitude: -80.6247972

(Decimal Degrees)

Receiving Body of Water: Indian River Field ID: G5CE0068

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Linger								
Mike Drennan								

Sampling Equipment			
☒ Sample Container	☐ Van Dorn	☒ Pole	
☐ Carboy	☐ Syringe		
☐ Dipper	☐ Other		
Equipment ID			

Collection Method			
☐ Wading	Via Boat		
☒ From Shore	☐ Canoe/Kayak		
☐ Other (note below)	☐ Electric Motor		
	☐ Gasoline Motor		

Water Level: Dry / Low / <u>Normal</u> / High / Flooded				Matrix: <u>Fresh</u> Marine / DI			
Meter ID# <u>11C / AR</u>				Photos: <u>Yes</u> / No <u>NWSE</u>			
Tide Falling: Yes / No / <u>NA</u>							

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (umhos/cm)	Temp. (C°)
<u>EST</u>	<u>11:06</u>	<u>0.3</u>	<u>0.4</u>	<u>5.9</u>	<u>75</u>	<u>7.5</u>	<u>0.4</u>	<u>0.4 (s)</u>	<u>800</u>	<u>27.3</u>
CEN										

Biological Samples Collected: None HA SCI LVS RPS LVI Other

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4	<u>6168040</u>	<u>6/16/17</u>	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO2			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 um Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
BOD	☐ BOD-UNIN	☐ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococcus ☐ QPCR	☐ Ice			
Periphyton	☐ ALGAE-ID	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PVR-AA-R ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Notes: Flow for rivers/streams: 0.21 m/s
DO failed post check = J

Crane Creek at Country Club Road

G5CE0068

Field ID ↑

STORET ↓

Date: 08/10/2016
RQ-2016-08-08-44

27010338

Signature: [Signature] Date: 8/10/16

Field Parameters Entered into LIMS: LAD 8/23/16 T.Sheet Updated: ☐ Field Parameters QC in LIMS: ☐ T.Sheet Updated: ☐

Date Migrated to STORET: (Initials/Date) T.Sheet Updated: ☐ Field Sheets Scanned/Saved: (Initials/Date) T.Sheet Updated: ☐

FDEP FORM FD 9000-3: PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID 76676 ORG ID 21 FL CEN LATITUDE 28.0725139
 COUNTY Brevard STORET # 27010338 LONGITUDE -80.6247972
 DATE 8/10/16 TIME 11:00 SAMPLING AGENCY FDEP CE-ROC
 SITE NAME Crane Creek
 FIELD ID/NAME G5CE0068 RECEIVING BODY OF WATER Indian River

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) <u>Park/Church</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) Depth (m)/Velocity (m/sec) Transect 4 m wide 0.17 m/s 0.21 m/s 0.13 m/s 0.2 m deep 0.3 m deep 0.2 m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u><1</u> Right Bank: <u><1</u>				Hydrologic Modification Score (per FT 3101) ☐				
High Water Mark: <u>0.3</u> + <u>.3</u> = <u>.6</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 Type: Sandy

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 ☐
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SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon % Coverage Woody Debris (Snags) ☐ ☐ ☐ Undercut Banks / Roots ☐ ☐ ☐ Leaf Packs or Mat ☐ ☐ ☐ Aquatic Vegetation ☐ ☐ ☐ Rock or Shell Rubble ☐ ☐ ☐ Sand ☐ ☐ ☐ Mud / Muck / Silt ☐ ☐ ☐ Other ☐ ☐ ☐ Other ☐ ☐ ☐	WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> <u>27.3</u> <u>7.5</u> <u>5.9</u> <u>75</u> <u>800</u> <u>0.4</u> <u>0.4 (5)</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ VOB Bottom: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Meter ID: <u>11C / AB</u> TOTAL DEPTH <u>0.4</u>
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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: <u>6168040</u> Exp: <u>6/16/17</u>	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 ☐

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: <u>J=DO failed post check</u> <u>90's clear/humid</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.
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SAMPLING TEAM

Mike Liagar, Mike Drennan

SIGNATURE:

[Signature]

DATE:

8/10/16

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

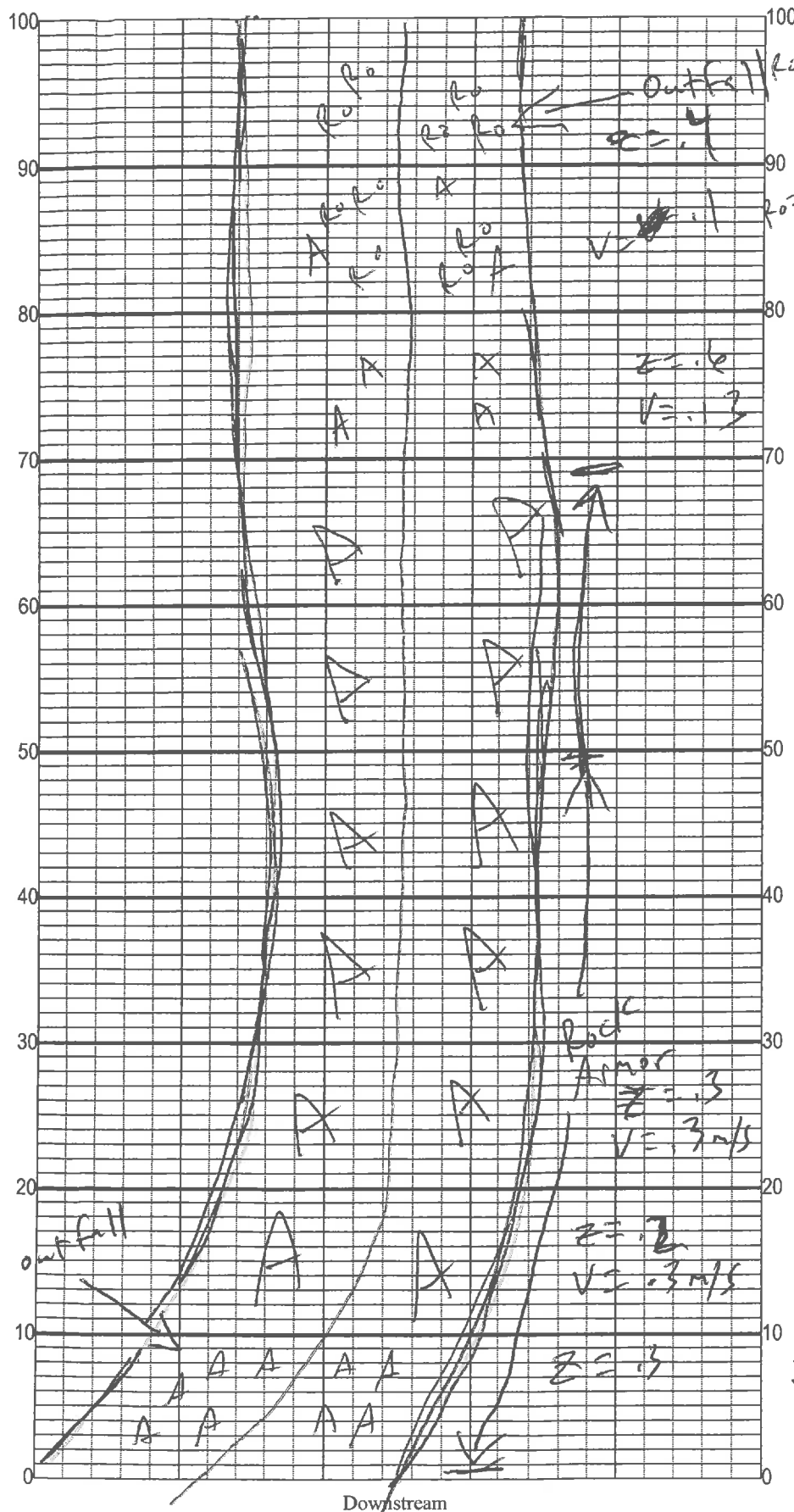
SAMPLING AGENCY: FDEP CE - ROC		STORET STATION NUMBER: 27010338	DATE (MM/DD/YY): 08/10/16	RECEIVING BODY OF WATER: Indian River
REMARKS:	COUNTY: Brevard	LOCATION: Crane Creek at Country Club Road	FIELD ID/NAME: G5CE0068	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity 9	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock) 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 19	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 14	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 10 ----- Primary Score 52	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 Artificial Channelization 3	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 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. 10 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 7 Left Bank 14	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	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 2.4 Left Bank 2.4	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 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 2.4 Left Bank 2.4 ----- Secondary Score 25	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. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

TOTAL SCORE

Date: 8/10/16	Analyst: Mike Linger Mike Drennan	Signature: 
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Crane Creek
 Date: 8/10/16
 Sampler: Mike Drennon / J. J. J.

100 m: Latitude 28.072220
 Longitude -80.624477
 0 m: Latitude 28.071534
 Longitude -80.623793

Substrates: Code key, draw proportionate habitat abundance. %

☒	Snags	_____
☒	Roots/undercut banks	_____
☒	Leaf Packs (or mats)	_____
☒	Aquatic Macrophytes	_____
☐	_____	_____
☐	_____	_____
☐	Pools	total # observed = <u>0</u> # range expected = <u>2-4</u>

Average width 4 m
 Average depth .36 m

Velocity measured at .21 meter mark

WQ & chemistry taken at 150 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:

$\bar{W} = 4m$
A. valisneria, *Hydrilla*,
Hygrophilla, *C. repens*
 0-20m = 75% plants

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

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Crane Creek at Country Club Road					County: Brevard		Date: 8/10/16		Investigators: Mike Linger	
STORET Station Number: 27010338										

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	Y		60	1	N	Y		
	2					2				
	3					3				
	4					4				
	5					5				20
	6					6				
	7					7				
	8					8				
	9	N				9	N			
10	1	N			70	1	N			
	2					2				
	3					3				
	4					4				
	5					5				8
	6					6				
	7					7				
	8					8				
	9	N				9	N			
20	1	N			80	1	N			
	2					2				
	3					3				
	4					4				
	5					5				16
	6					6				
	7					7				
	8					8				
	9	N				9	N			
30	1	N			90	1	N			
	2					2				
	3					3				
	4					4				
	5					5				80
	6					6				
	7					7				
	8					8				
	9	N				9	N			
40	1	N			100	1	N			
	2					2				
	3					3				
	4					4				
	5					5				88
	6					6				
	7					7				
	8					8				
	9	N				9	N			
50	1	N				1	N			
	2					2				
	3					3				
	4					4				
	5					5				
	6					6				
	7					7				
	8					8				
	9	N				9	N			

Secchi depth	0.4 m
Estimated?	

# 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-2016-08-08-44	

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%.

