



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

March 2017

PAGE 1 OF 1

Data Qualified?
Yes / No

Location/STORET Station Name: Deep Creek E of Hub Bailey Rd Date: 05/31/17
STORET # G2NE0003 WBID: 2549 Latitude: 29.686528
County: St Johns RQ - 2017-05-29-10 ORG ID: 21FLA Longitude: 81.469032
Receiving Body of Water: LSSR Field ID: See Label

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
J. Parrish						X	X		
P. O'Connor						X	X	X	X

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Equipment ID OrthoKit # <u>1</u>		

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

Water Level: Dry / Pooled / <u>Low</u> / Normal / High / Flooded					Matrix: <u>Fresh</u> Marine / DI					
Meter ID# <u>Quant #1</u>			Photos: <u>Yes</u> / No			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 (µmhos/cm)	Temp. (C°)
EST	<u>1005</u>	<u>0.3</u>	<u>0.4</u>	<u>4.5</u>	<u>54.7</u>	<u>7.0</u>	<u>1.69</u>	<u>0.45</u>	<u>3240</u>	<u>25.3</u>
CEN										

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other _____

SBIO ID Numbers: SBIO-ID: _____ RPS-ID: _____ Macrophyte-ID: _____ LIMS#: _____

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			☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ 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			
Periphyton	☐ ALGAE-ID	☐ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococci ☐ qPCR	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

Notes: High Specific Conductance Due to Irrigation (agricultural) Runoff to Deep Creek

Signature: P O Connor Date: 05-31-17

Place Label Here (If Available)

Field Parameters Entered into LIMS: _____ (Initials/Date) Field Parameters QC in LIMS: _____ (Initials/Date)

Date Migrated to STORET: _____ (Initials/Date) Field Sheets Scanned/Saved: _____ (Initials/Date)

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

77654

SAMPLING AGENCY: NE ROC		STORET STATION NUMBER: G2NE0003	DATE (MM/DD/YY): 5/31/17	RECEIVING BODY OF WATER: L. S. R.
REMARKS:	COUNTY: St. Johns co.	LOCATION: Deep Cr. East of Hib Bailey		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>11</u>	20 19 18 17 16	15 14 13 12 <u>(11)</u>	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 <u>5</u> <u>4</u> <u>3</u> 2 1
Water Velocity <u>14</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 <u>(14)</u> 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 space occurring: > 1 m/sec < 0.05 0.04 0.03 0.01 < 0.01 5 4 3 2 1
Habitat Smothering <u>10</u> Primary Score <u>38</u> <u>39</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). <u>(10)</u> 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>19</u>	20 19 18 17 16	15 14 13 12 <u>(11)</u>	10 <u>(9)</u> 8 7 6	5 4 3 2 1
Bank Stability	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.	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 root zone with raw, eroded areas.
Right Bank <u>3</u> <u>4</u> Left Bank	10 9	8 7 6	5 <u>(4)</u>	<u>(3)</u> 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation > 12 to 18 m	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>10</u> Left Bank <u>10</u>	<u>(10)</u> 9	8 7 6	5 4	3 2 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>9</u> Left Bank <u>9</u>	10 <u>(9)</u>	8 7 6	5 4	3 2 1
Secondary Score <u>54</u>				

17
21

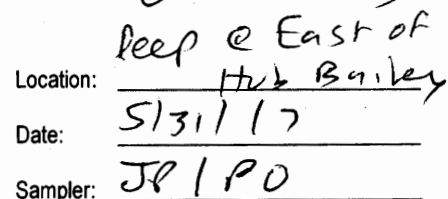
20
18
16
14
12
10
8
6
4
2
0

TOTAL SCORE

93

Date: <u>5/31/17</u>	Analyst: <u>Jeremy Parnz</u>	Signature: <u>Jeremy Parnz</u>
----------------------	------------------------------	--------------------------------

GZNE0003

Plants observed / other notes:

$$\Delta \text{snag} = 1 + 1.5 + 1 + 0.5 + 1.5 + 3$$

$$\text{cost} = 1 + 1 + 0.75 + 0.5 + 0.5$$

$$\text{rent} = 2 - \frac{3}{m} = < 1\%$$

Revision Date: March 1, 2014

77654
DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21FLA LATITUDE 29.686526
 COUNTY Putnam STORET # 20030844 G2NE0003 LONGITUDE 81.469032
 DATE 05-31-17 TIME _____ SAMPLING AGENCY DEAR NEON
 SITE NAME Cow Creek @ E. River Rd Deep Cr E of Hub Bailey Rd
 FIELD ID/NAME _____ RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

Meter ID: QUANTA #1

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):								Landscape Development Intensity Index (LDI)	
Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)		
<u>5</u>		<u>45</u>	<u>50</u>	<u>5</u>					
Local Watershed Erosion (select one): ☐ None ☐ Slight ☒ Moderate ☐ Heavy								Typical Width (m) Depth (m) Velocity (m/sec) Transect	
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy								<u>5</u> m wide	
Width of Riparian Vegetation (m) on Each Buffer Side				Hydrologic Modification Score (per FT 3101)					
Left Bank: <u>>18</u>		Right Bank: <u>>18</u>							
High Water Mark: <u>0.8</u> + <u>0.4</u> = <u>1.2</u>				Artificially Impounded					
(m) (above present water level) (present depth) (above bed)				☐ Yes ☒ No					
Artificially ☐ No ☐ Mostly recovered, more sinuous				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%)					
Channelized: ☐ Some recovery ☒ Recent, severe				☒ Heavily Shaded ☐ Moderate Shaded (46-80%)					

SEDIMENT / SUBSTRATE

Sediment Oils			Sediment Odors			Smothering of Substrates					
☒ Absent ☐ Slight			☒ Normal ☐ Sewage ☐ Petroleum			Sand Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐					
☐ Moderate ☐ Profuse			☐ Chemical ☐ Anaerobic			Silt Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐					
			☐ Other (Specify):			Algae Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐					
SUBSTRATE TYPE						WATER QUALITY					
Assessment Tool: ☐ SCI ☒ RPS ☒ LVS						Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M)					
☐ LCI ☐ BioRecon						Top: <u>0.3</u> <u>25.3</u> <u>7.0</u> <u>4.5</u> <u>54.7</u> <u>3240</u> <u>1.69</u> <u>0.45</u>					
Woody Debris (Snags) <u>2.5</u>						Mid: <u>0.3</u> <u>25.3</u> <u>7.0</u> <u>4.5</u> <u>54.7</u> <u>3240</u> <u>1.69</u> <u>0.45</u>					
Undercut Banks / Roots <u>1.5</u>						Bottom: <u>0.3</u> <u>25.3</u> <u>7.0</u> <u>4.5</u> <u>54.7</u> <u>3240</u> <u>1.69</u> <u>0.45</u>					
Leaf Packs or Mat <u>1</u>						System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☒ <u>Ditch</u>					
Aquatic Vegetation <u>1</u>						Water Odors Normal ☒ Petroleum ☐					
Rock or Shell Rubble <u>1</u>						Sewage ☐ Chemical ☐ Other ☐					
Sand <u>1</u>						Water Sample Taken? ☒ Yes ☐ No					
Mud / Muck / Silt <u>95</u>						Sample Preserved? ☐ Yes ☐ No					
Other <u>1</u>						Lot Number: <u>7093010</u> Exp: <u>04-03-18</u>					
Other <u>1</u>						Algae Sample Taken? ☐ Yes ☒ No					
						Sample Preserved? ☐ Yes ☐ No					
						Lot Number: <u>N/A</u> Exp: <u>—</u>					
						Water Surface Oils Normal ☒ Sheen ☐					
						Globs ☐ Slick ☐ Other ☐					
						Color Tannic ☐ Green (Algae) ☐					
						Clear ☒ Other (Specify) ☐					
						Clarity Clear ☒ Slightly Turbid ☐					
						Turbid ☐ Opaque ☐					
ABUNDANCE						AMBIENT FIELD CONDITIONS / NOTES:					
Not Obs. Rare Common Abundant						<u>HIGH CONDUCTIVITY DUE to Agricultural Irrigation</u>					
Periphyton: ☐ ☒ ☐ ☐						Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☒ 5-6 ☐ 7-8 ☐ 9-10					
Fish: ☐ ☐ ☒ ☐						☐ The antecedent hydrologic conditions have been met to my best knowledge.					
Aquatic Plants: ☒ ☐ ☐ ☐											
Iron/Sulfur Bacteria: ☐ ☐ ☒ ☐											
SAMPLING TEAM <u>J. Parrish, P.O'Connor</u>						SIGNATURE: <u>[Signature]</u>					

77654

RRS 8702

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Deep Cr. E. of Hwy 6A Bailey Rd County: St Johns Date: 05-31-17 Investigators: J. Parrish, P. O'Connor

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	N		60	1	N	N	
	2	N				2			
	3	N				3			
	4	X				4			
	5	X		96		5			88
	6	X				6			
	7	X				7			
	8	X				8			
	9	N				9			
10	1	N			70	1	N		
	2					2			
	3					3			
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9					9			
20	1	N			80	1	N		
	2					2			
	3					3			
	4					4			
	5			96		5			88
	6					6			
	7					7			
	8					8			
	9					9			
30	1	N			90	1	N		
	2					2			
	3					3			
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9					9			
40	1	N			100	1	N		
	2					2			
	3					3			
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9					9			
50	1	N				1	N		
	2					2			
	3					3			
	4					4			
	5			92		5			
	6					6			
	7					7			
	8					8			
	9					9			

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-	

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%.

G2NLE0003

Comments:	NO AQUATIC PLANTS
-----------	-------------------

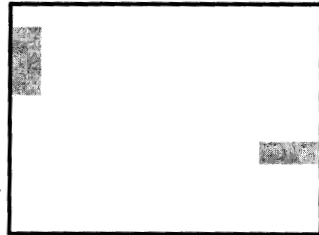
	Meter Mark										Specimen collected (check)		Meter Mark										Specimen collected (check)
HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100		HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Alternanthera philoxeroides											Micranthemum 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											Pontederia 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																							
Ludwigia repens																							
Luiziola fluitans																							
If no Dominant or Co-Dominant were selected, indicate with "X"																							
Indicate % cover																							

LZMZ
AQUATIC
PLANTS

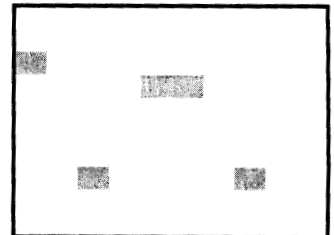
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

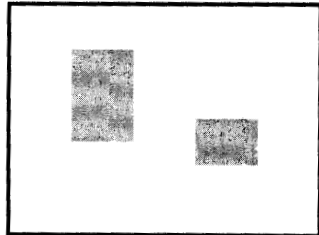
5% Macrophyte Coverage



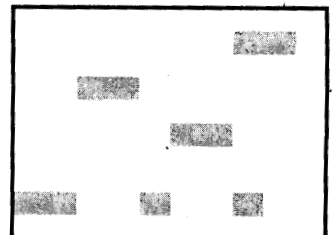
5% Macrophyte Coverage



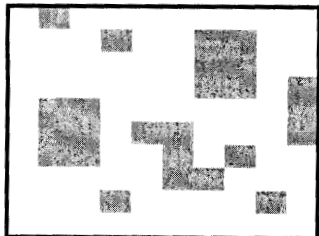
10% Macrophyte Coverage



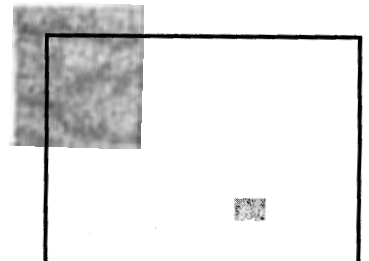
10% Macrophyte Coverage



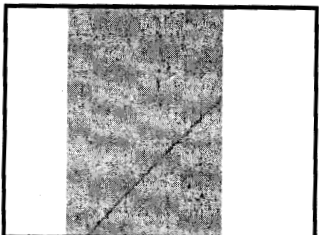
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage

