



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

Data Qualified?

Yes / No

April 2018

WIN Station Name: Powell Creek

Date: 11/20/2018

WIN/ Field ID: G3SD0144

WBID: 3240L

Latitude: 26.6875533

(mm/dd/yyyy)

County: Lee

ORG ID: 8082

Longitude: -81.8755899

(Decimal Degrees)

Receiving Body of Water: Caloosahatchee

RQ-2018- 11-12-60

(Decimal Degrees)

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment			
Steve Cofone					X				☒ Sample Container	☐ Van Dorn	☐ Pole	
Gary Snorek				X		X			☐ Carboy	☒ Syringe		
Chase Conley							X		☐ Dipper	☐ Other		
									Depth Measured with Secchi			
									Equipment ID Deeper Blue			
									Collection Method			
									☒ Wading	☐ Canoe/Kayak		
									☐ From Shore	☐ Electric Motor		
									☐ Other	☐ Gasoline Motor		
Water Level: Dry/ Pooled/ Low / Normal / High / Flooded				Meter ID# Keys				Matrix: Fresh / Marine / DI				
Photos: Yes / No		Flow: No Flow / Intestinal / Flowing / NA		Tide: Rising/ Falling/ Slack/ NA		Tide Times: High		Low				
Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (umhos/cm)	Temp. (C°)		
EST	940	0.2	0.1	0.2 ^s	1.94	22.6	7.09	0.27	558	23.45		
CEN			0.1									
Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other:												
SBIO ID Numbers:		SBIO-ID: 79070		HA-ID: 15523		RPS-ID: 972		Macrophyte-ID: NA		LIMS#:		
Parameter Suite		Parameter Methods				Preservation		Lot#		Expiration pH Check		
Preserved Nutrients		☒ W-NH3 / ☒ W-NO2NO3 / ☒ W-TKN / ☒ W-TOC / ☒ W-S-A-TP				☒ Ice ☒ H2SO4		SAB197090		07/16/19 <2		
Metals		☒ W-ICPMS ☒ W-ICP				☒ Ice ☒ HNO3		809110		04/09/19 <2		
Filtered Nutrients		☒ W-PO4-F ☐ Field Filtered 0.45 um Filter				☒ Ice						
Chlorophyll		☒ CHLSUITE-W				☒ Ice						
Physical/Aggregate (Fresh)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CLIC / 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				☒ Ice						
Molecular		☐ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD				☐ Ice						
Tracers		☐ W-E8321-DI ☐ W-E8321-MS				☐ Ice						
Pesticides		☐ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-E8321-DI ☐ W-PCL-SQ-R ☐ W-E8321-MS ☐ W-CARB-AA				☐ Ice ☐ Other						

Notes:

Field ID/WIN ID

Location

Signature:

Date:

Enter Field Parameters, Verify Station ID In LIMS DMT:

QC Station ID, Field Parameters In LIMS DMT:

Scan/Save Field Sheets

Migrate Data to WIN:

Verify Data In WIN:

(Initials/Date)

(Initials/Date)

(Initials/Date)

G3SD0144

Powell Creek

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

SAMPLING AGENCY: FDOP SOBOLC 8052		STORET STATION NUMBER: —	DATE (MM/DD/YY): 11/20/18	RECEIVING BODY OF WATER: CAUDONATONGE RIVER
REMARKS: —	COUNTY: LEE	LOCATION: POWELL CREEK	FIELD ID/NAME: GSD0144	

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>13</u>	20 19 18 17 16	15 14 <u>13</u> 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>JB 6</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 <u>JB</u> 10 9 <u>8</u> <u>7</u> <u>6</u>	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>10</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 <u>10</u> 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>37</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 <u>6</u>	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 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>11</u>	20 19 18 17 16	15 14 13 12 <u>11</u>	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>8</u> Left Bank <u>5</u>	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>R</u> <u>8</u> 7 6	Only meets 1 of the 3 requirements for optimal bank stability. <u>L</u> <u>5</u> 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>2</u> Left Bank <u>1</u>	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 <u>R</u> <u>L</u> 3 <u>2</u> <u>1</u>
Riparian Zone Vegetation Quality Right Bank <u>1</u> Left Bank <u>1</u> ----- Secondary Score <u>29</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. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). <u>L+R</u> 3 2 <u>1</u>

3 66 69 TOTAL SCORE

Date: 11/20/18	Analyst: JOHN BARRINGTON	Signature: 
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Storet Number: ^ put sticker here	Date:	County:	Waterbody:
Applicant:		Signature:	

Analyst:

Comments:

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**

Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453
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spaces for additional taxa names. bold is exotic invasive											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											X	X	X	X	X	X	X	X	X	X	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	X	X	X	X	X	X	X	X	X	X	
Colocasia esculenta											X										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											X			X							Sagittaria lancifolia											
Hydrocotyle sp.											X						X	X			Sagittaria latifolia											
Hygrophila polysperma											X	X	X	X	X	X	X	X			Salvinia minima	X										
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																																

Site: Dowell Creek County: LEE Date: 11/26/18 Investigators: SC, GS, CC, JS

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6)	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6)	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6)	Canopy Cover
0	1	22	96	40	1	22	96	80	1	22	96
	2	22			2	22					
	3	22			3	22					
	4	22			4	22					
	5	22			5	22					
	6	22			6	22					
	7	22			7	22					
	8	22			8	22					
	9	22			9	22					
10	1	22	95	50	1	22	94	90	1	22	89
	2	22			2	22					
	3	22			3	22					
	4	22			4	22					
	5	22			5	22					
	6	22			6	22					
	7	22			7	22					
	8	22			8	22					
	9	22			9	22					
20	1	22	95	60	1	22	96	100	1	22	92
	2	22			2	22					
	3	22			3	22					
	4	22			4	22					
	5	22			5	22					
	6	22			6	22					
	7	22			7	22					
	8	22			8	22					
	9	22			9	22					
30	1	22	95	70	1	22	96		1	22	
	2	22			2	22					
	3	22			3	22					
	4	22			4	22					
	5	22			5	22					
	6	22			6	22					
	7	22			7	22					
	8	22			8	22					
	9	22			9	22					

 # points ranked 4-6 11
 total points assessed 11
 % points ranked 4-6 100
Secchi depth: 0.25
 Check accompanying data collected at same site/date.
 Algal mat sample ☒
 Habitat Assessment ☒
 Linear Veg. Survey ☒
 SC/Biorecon (circle 1) ☒
 Water sample ☒
 RA: 2018-11-12-60

Algal Thickness Rank

 N rough, no algae; slimy; algae to 1 mm
 3 >1mm - 6 mm
 4 >6 - 20 mm
 5 >20 mm - 10 cm
 6 >10 cm

Record "N" for points deeper than the Secchi depth; algae are presumed absent. Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. Note if thickness estimated for deep points which can be seen but not reached.

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 an 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%.

(This fits with paper margins * and orientation.)

 User Defined Space.
 Location, directions, samplers, whatever...

Date: 1/2/34

11/2-2013-10-01-12



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

SAMPLE ID _____ ORG ID 8052 LATITUDE _____
 COUNTY LEE STORET # _____ LONGITUDE _____
 DATE 11/20/18 TIME 0940 SAMPLING AGENCY FDAP SOROC
 NAME POWELL CREEK
 FIELD ID/NAME G3SD0144 RECEIVING BODY OF WATER CALOUSANSTCH66 RIVER

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>2</u> Silviculture _____ Field/Pasture _____ Agricultural _____ Residential <u>88</u> Commercial <u>10</u> 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 _____ <u>2</u> m wide _____ m/s _____ m/s _____ m/s _____ m deep _____ m deep _____ m deep				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>2</u> Right Bank: <u>2</u>				Hydrologic Modification Score (per FT 3101) _____				
High Water Mark: <u>1.5</u> + <u>0.2</u> = <u>1.7</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 ☒
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SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☒ RPS ☒ LVS

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	<u>2.25</u>	<u>5</u>	
Undercut Banks (Roots)	<u>2.45</u>	<u>5</u>	
Leaf Packs or Mat	<u>0.45</u>		
Aquatic Vegetation	<u>0.1</u>		
Rock or Shell Rubble	<u>1.55</u>	<u>5</u>	
Sand		<u>5</u>	
Mud / Muck / Silt			
Other GRAVEL			
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>0.1</u>	<u>23.45</u>	<u>7.09</u>	<u>1.94</u>	<u>22.6</u>	<u>558</u>	<u>0.27</u>	<u>0.2</u>
Mid:								☒ VOB
Bottom:								

Meter ID: KEYS TOTAL DEPTH 0.2

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 ☐

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☐	☐	☒
Fish:	☐	☒	☐	☐
Aquatic Plants:	☐	☒	☐	☐
n/Sulfur Bacteria:	☒	☐	☐	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) _____

AMBIENT FIELD CONDITIONS / NOTES:

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

SAMPLING TEAM

JOHN BARRINGTON, CLARE CONLEY
GARY SNURCK, STEVE COFONE

SIGNATURE:

DATE:

11/20/18