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

SAMPLE ID 82624 ORG ID 21FLPNS LATITUDE 30.474509
COUNTY Walton WIN ID/STORET # G3NW0148 LONGITUDE 85.987566
DATE 7/01/2021 TIME 11:15 CTZ SAMPLING AGENCY FL DEP - NWROC
SITE NAME Black Creek Upstream of HWY 20 RQ- 2021-06-28-34
FIELD ID/NAME G3NW0148 RECEIVING BODY OF WATER. Choc. Bay WBID 679 Project: EcoRegRef Streams
LIMS ID: 2259587

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)
X	X	X	X	X	X		

Landscape Development Intensity Index (LDI): 1.3 55th 30th

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: 718 Right Bank: 718

Hydrologic Modification Score (per FT 3101): 1-2

High Water Mark: 1.5 (m) + 71.3 (above present water level) = 72.8 (present depth) (above bed)

Artificially Impounded: ☐ Yes ☑ No

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

0 m mk	C.8 m wide	
.33 m/s	0.4 m/s	.36 m/s
2.5sec.		2.8sec.
1.0 m deep	0.8 m deep	0.9 m deep

Artificially Channelized: ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ 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

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☐	☑	☐
Silt Smothering:	☐	☐	☑	☐
Algae Smothering:	☐	☑	☐	☐

SUBSTRATE TYPE

Assessment Tool: ☑ SCI ☑ RPS ☒ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	12.1	4	
Undercut Banks / Roots	7.6	4	
Leaf Packs or Mat	2.2	4	
Aquatic Vegetation	0.8	4	
Rock or Shell Rubble..			
Sand.....	78.1	4	
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 :	0.3	27.3	4.09	6.68	78.7	25.75	0.01	
Mid:								☑ VOB
Bottom								TOTAL DEPTH
								0.9

Meter ID: 155087

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: 5A035310 NA0344060 Exp: 4/21/2021 4/11/2022

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 ☐

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

ABUNDANCE

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

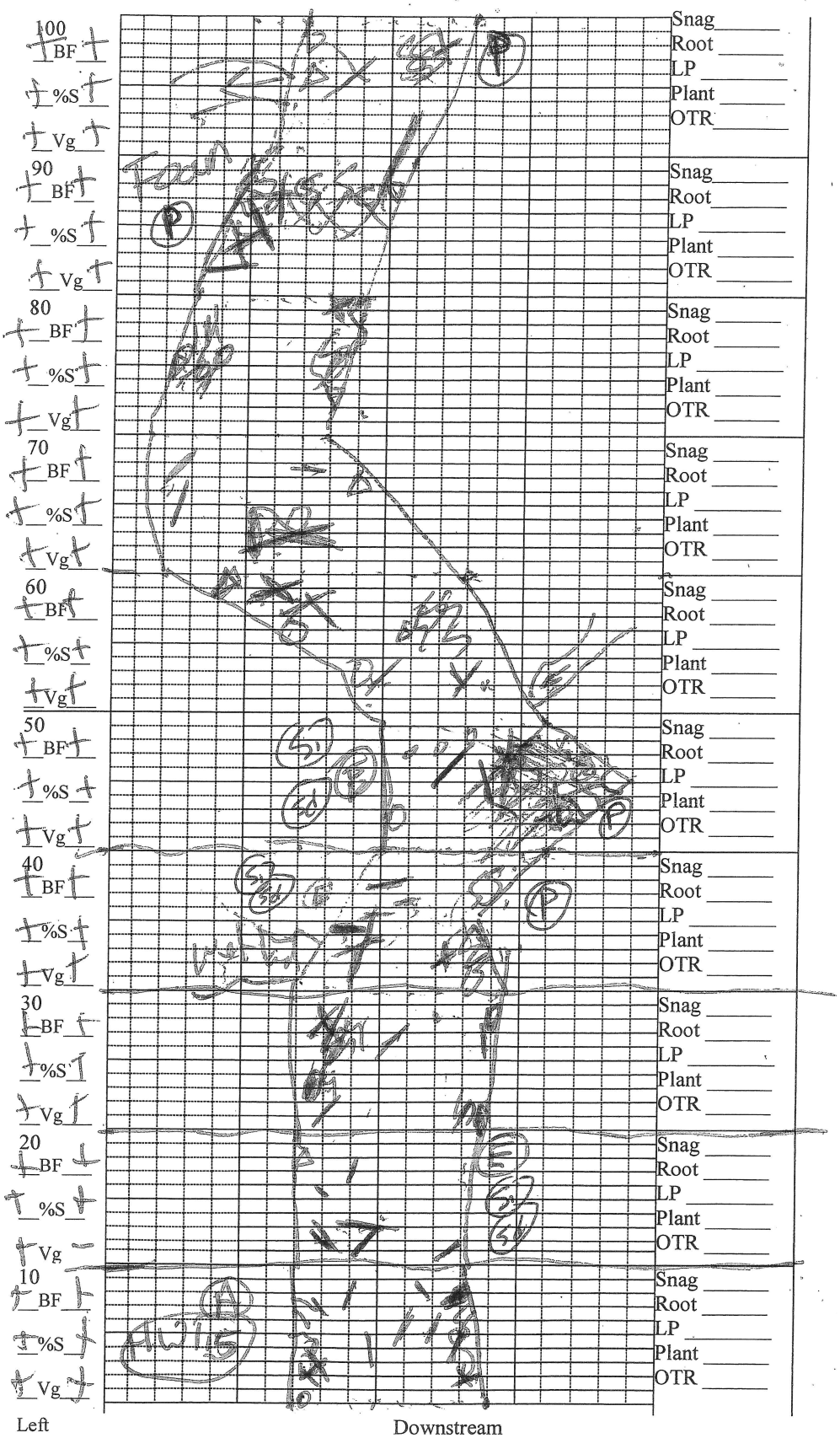
AMBIENT FIELD CONDITIONS / NOTES:
[redacted] SA035310, Exp. 4/11/2022

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

SAMPLING TEAM: Frank Butera Heather Schmuck

SIGNATURE: [signature] DATE: 07/01/2021

Stream/River Habitat Sketch Sheet, Form FD 9000-4 (June 1, 2001)_
Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).



WIN ID G3NW0148
Substrates: Code key, draw proportionate habitat abundance.

- Snags 75/620 = 12.1%
- S Roots/undercut banks 47/620 = 7.6%
- Leaf Packs (or mats) 13.5/620 = 2.2%
- Macrophytes 4.9/620 = 0.8%
- _____
- _____
- (P) Pool

Velocity: 0.4 m/s
Note where velocity measures were taken. 0 m

Habitat Smothering:
Note areas (on map) where sand or silt is something 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.

Average width 6.2 m
Average depth 0.8 m
WQ & chemistry taken @ 0 m
0.4 m/s

Black Creek upstream of HWY 20 Ecoreg Ref Streams
Project. ~~SMP / TMDL Studies~~
Sampled By/Date: 7/1/2004

0 m Latt. 30.47450
0 m Long. 85.98762
100 m Latt 30.47470
100 m Long 85.98669

Avg. W. dth = 7.8 m

0-10 meter [A]	Habitat Area (M)	Left Bank	Right Bank
	Snag 3.0	Bankfull	Bankfull
0m width (m) 7.2	Root 1.0	+	+
10m width 6.0	Leaf 1.0	Slope	Slope
Avg. Depth 0.9	Veg .10	+	+
Max Depth 1.1	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other A	Other	

10-20 meter [B]	Habitat Area (M)	Left Bank	Right Bank
4.4	Snag ~~4.0~~ 3.0	Bankfull	Bankfull
20m width	Root 3.0	+	+
6.3	Leaf 0.5	Slope	Slope
Avg. Depth 0.3	Veg 0.10	+	+
Max Depth 1.1	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	−
Rip. Buff R 7/8	Other (E) (S)	Other (S)	

20-30 meter [C]	Habitat Area (M)	Left Bank	Right Bank
	Snag 4.0	Bankfull	Bankfull
30m width 6.5	Root 3.0	+	+
	Leaf 0.5	Slope	Slope
Avg. Depth 0.9	Veg 0.1	+	+
Max Depth 1.1	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other (E)	Other	

30-40 meter [D]	Habitat Area (M)	Left Bank	Right Bank
	Snag 3.0	Bankfull	Bankfull
40m width 6.1	Root 5.0	+	+
	Leaf 1.0	Slope	Slope
Avg. Depth 1.0	Veg 0.1	+	+
Max Depth 0.2	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other (S) (S) (E) (P)	Other	

40 - 50 meter [E]	Habitat Area (M)	Left Bank	Right Bank
45m 6.4	Snag 1.0	Bankfull	Bankfull
50m width	Root 1.3	+	+
*6.4	Leaf 5.0	Slope	Slope
Avg. Depth 0.6	Veg 0.1	+	+
Max Depth 1.3	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other (E) (S) (S) (P)	Other	

Avg. W. dth 7.8

50-60 meter [F]	Habitat Area (M)	Left Bank	Right Bank
55 = 11.4	Snag 5.0	Bankfull	Bankfull
60m width	Root 4.0	+	+
* 11.4	Leaf 0.5	Slope	Slope
Avg. Depth 0.8	Veg 1.5	+	+
Max Depth 1.0	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other	Other	

60-70 meter [G]	Habitat Area (M)	Left Bank	Right Bank
	Snag 1.0	Bankfull	Bankfull
70m width 6.5	Root 3.0	+	+
	Leaf 0.5	Slope	Slope
Avg. Depth 0.7	Veg 0.5	+	+
Max Depth 1.0	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other	Other	

70-80 meter [H]	Habitat Area (M)	Left Bank	Right Bank
	Snag 6.0	Bankfull	Bankfull
80m width 6.0	Root 4.0	+	+
	Leaf 1.0	Slope	Slope
Avg. Depth 0.9	Veg 1.0	+	+
Max Depth 1.2	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other	Other	

80-90 meter [I]	Habitat Area (M)	Left Bank	Right Bank
	Snag 1.5	Bankfull	Bankfull
90m width 6.4	Root 5	+	+
	Leaf 2.0	Slope	Slope
Avg. Depth 0.8	Veg 0.3	+	+
Max Depth 1.3	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other Foam (P)	Other	

90 - 100 meter [J]	Habitat Area (M)	Left Bank	Right Bank
	Snag 8.0	Bankfull	Bankfull
100m width 6.8	Root 6.0	+	+
	Leaf 1.0	Slope	Slope
Avg. Depth 0.9	Veg 1.0	+	+
Max Depth 1.1	Gravel	Veg	Veg
Rip. Buff L 7/8	Rock	+	+
Rip. Buff R 7/8	Other (P)	Other	

Avg. W. dth 7.8

Bank Stability Score. Left Bank 3.4 Right Bank 2.9 Category Left Bk Optimal Right Bk Optimal

Add all plus signs (Max. 30 possible) and Divide by 10. Scoring. **Poor:** 0.0 - 0.9 pts. **Marginal:** 1.0-1.9 pts. **Suboptimal:** 2.0 - 2.9 **Optimal:** 2.1 +

Notes.

Station Name

Black Creek upstream HWY ~~30~~ 25

Storet: G3NW0148

Date 7/01/2021

0 meter (Dec Deg)

30.47450

85.95763

100 meter (Dec Deg)

30.47478

85.98669

Water Quality Measured at 4m

Stream Velocity and location.

0.4 m/s 4 meter mark

Number of Pools & Location

(4) 43, 50, 88, 98 m

High Water:

Silt smothering @

B, D, E

Sand Smothering @

B, D, E

Algae Smothering @

(A)

Degraded Banks @

B, D, E

Fe/Sulfur Bact. @

N/A

Total Habitat	Sq. Meters	Percent
Snags	75	12.1
Roots	47	7.6
Leaf	13.5	2.2
Veg	4.9	0.8
Rock		
Gravel		
Sand	484.5	78.1
Other		
Sum 1° Habitat		22.6

Avg. Depth	Max. Depth	Avg. Width
0.8	71.3	6.2

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

SAMPLING AGENCY: 21FLPNS FL DEP NWROC		STORET STATION NUMBER: G3NW0148	DATE (MM/DD/YY): 07/01/21	RECEIVING BODY OF WATER: Choctawhatchee Bay
REMARKS: WBID 679	COUNTY: Walton	LOCATION: Freeport, North of SR 20		FIELD ID/NAME: Black Creek up. SR20

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 17	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 14	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 22.6% 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 20	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 0.4 m/s ≥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 19 Primary Score 79	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** 20	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 10 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful 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 10 Left Bank 10	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 10 Left Bank 10 Secondary Score 80	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

150 **TOTAL SCORE** 159/160 = 93.8%

Date: 7/01/2021	Analyst: F. Butler	Signature:

SBIO ID: 82624 HA ID: 16387

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Black Creek upstream of HWY 20 | County: Walton | Date: 7/01/2021 | Investigators: Frank Butera

STORET Station Number: G3NW0148

VOB

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
10	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
20	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
30	1			
	2			
	3			
	4			
	5			95
	6			
	7			
	8			
	9			
40	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
50	1			
	2			
	3			
	4			
	5			88
	6			
	7			
	8			
	9			

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
70	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
80	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
90	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
100	1			
	2			
	3			
	4			
	5			92
	6			
	7			
	8			
	9			

Secchi depth	0.9
Estimated?	

# points ranked 4-6	0
total points assessed	58
% 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-2021-06-28-34	

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

SBIO Visit ID. 82624

Macro ID. 9732

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 FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: Black Creek upstream HWY 20	Date: 07/01/2024	County: Walton	Storet Number: G3NW0148
Analyst: F. Butera		Signature:	

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m^2 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.

SBIO ID: 82624

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
Magnolia V.											
Eleocharis											
Peltandra											
Smilax											
If no Dominant or Co-Dominant were selected, indicate with "X"	X	X	X	X	X	X	X	X	X	X	
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

Macro ID: 11849

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
Eleocharis											
Cyperus											
Woolwortia A											
Panicum virgatum											
Fontinalis											
Acer											
Xyris											
Water Oak											
Elephant grass											
Cane (Arundinaria?)											
Brunichia gintea											

Field ID: G3NW0148	RPS ID 9732	SBIO ID 82624	Macro ID 11849
LIMS ID 2259587			

Station: Black Creek Upstream of HWY 20
GPS: 30.474509 X -85.987566
Storet: G3NW0148 Field ID G3NW0148
SBIO Sample ID : 82624
Macro ID: 11849

Sampled : 07/01/2021
Sampled By. F. Butera, H. Schmuki
Location. Freeport, Walton
Receiving Waters: Chochwhatchee Bay
LIMS ID: 2259587

	Taxa	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	C of C	Coll.	Verified
1	*Arundinaria gigantea*				1	1	1		1			5.25	Y	FB
2	*Fontinalis* sp.	1	1	1	1		1		1		1			
3	*Juncus marginatus*										1	3.65		
4	*Juncus repens*				1							6.91		
5	*Ludwigia* sp. (native)			1	1		1							
6	*Ludwigia repens*				1	1						5.20		
7	*Panicum virgatum*	1	1	1	1	1	1	1	1	1	1		Y	FB
8	*Peltandra virginica*						1		1			7.31		
9	*Rhynochospora* sp.				1	1	1	1			1			
10	*Saururus cernuus*		1	1										
11	*Woodwardia areolata*		1	1	1	1	1	1				7.68		
12	*Xyris* sp.				1					1				
	Total	2	4	5	9	5	7	3	4	2	4			
	Taxa per section	2	4	5	9	5	7	3	4	2	4	Herb. Taxa		10
	Exotic Present	0	0	0	0	0	0	0	0	0	0	Woody Taxa		0
	Avg. taxa per section	5										Ferns		2
	sections with exotics	0										Macro Algae		0
	Exotic Taxa	0	Exotics per Section: 0.0									Total Taxa		12

Taxa seen within water channel, but not counted.

Taxa	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	C of C	Coll.	Verified
Acer rubrum		1			1						4.65		
Cliftonia monophylla	1	1	1		1	1	1			1	5.63		
Cyrilla racemiflora	P	P	P	P	P	P	P	P	P	P	5.20		
Ilex opaca				1				1			4.55		
Ilex vomitoria		1	1		1	1	1	1	1	1	3.00		
Magnolia virginiana	1		1	1							9.44		
Quercus nigra				1	1	1					4.14		
Rhododendron viscosum var. *serrulatum*						1							
Smilax sp.*								1					

Photo Log
Storet G3NW0148
Station Name: Black Creek Upstream of HWY 20
Date: 7/1/2021
Samplers. Frank Butera

1 N
2 E
3 S
4 W
5 Up
6 Down

at Dunbar rock

7
8
9
10
11
12
13
14
15
16
17

Notes.