



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

Data Qualified?
Yes / No

January 2019

WIN Station Name: Bull Creek Canal 1.0M Upstr of Dead Lake Date: 10/30/19

WIN/ Field ID: G2NE1194 WBID: 2615 Latitude: 29.43226

County: Putnam ORG ID: 21FLA Longitude: -81.43517

Receiving Body of Water: SSR RQ: 2019-10-28-18

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
J. Parvish									
K. Appleby									

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Depth Measured with <u>Ortho #44</u>		
Equipment ID <u>Well #1</u>		

Collection Method	
☐ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other	☒ Gasoline Motor

Water Level: Dry/ Pooled/ Low / Normal / High / Flooded Meter ID# DS 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 (µmhos/cm)	Temp. (C)
<u>EST</u>	<u>1015</u>	<u>1.3</u>	<u>0.3</u>	<u>NA</u>	<u>2.89</u>	<u>36.9</u>	<u>6.77</u>	<u>0.33</u>	<u>688</u>	<u>27.1</u>
CEN										

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

SBIO ID Numbers: SBIO-ID: HA-ID: RPS-ID: Macrophyte-ID: 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	<u>SA9203100</u>	<u>7/2020</u>	☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO3	<u>NA9189080</u>	<u>7/2020</u>	☒ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	<u>RA9A86815</u>		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / ☒ W-F / ☒ W-TSS / ☒ TURBIDITY / ☒ W-CI-IC / ☒ W-COLOR / ☒ W-SO4-IC / ☒ W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / ☐ W-BR-IC / ☐ 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-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ 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 ☐ WE8321-MS ☐ W-CARB-AA	☒ Ice			
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C	☐ Ice			

Notes:

WIN ID/Field ID: G2NE1194

Bull Creek Ditch 1 mile Upstream of Dead Lake

Signature: [Signature] Date: 10/30/19

LIMS EVENT ID: WIN Import ID: 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:

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

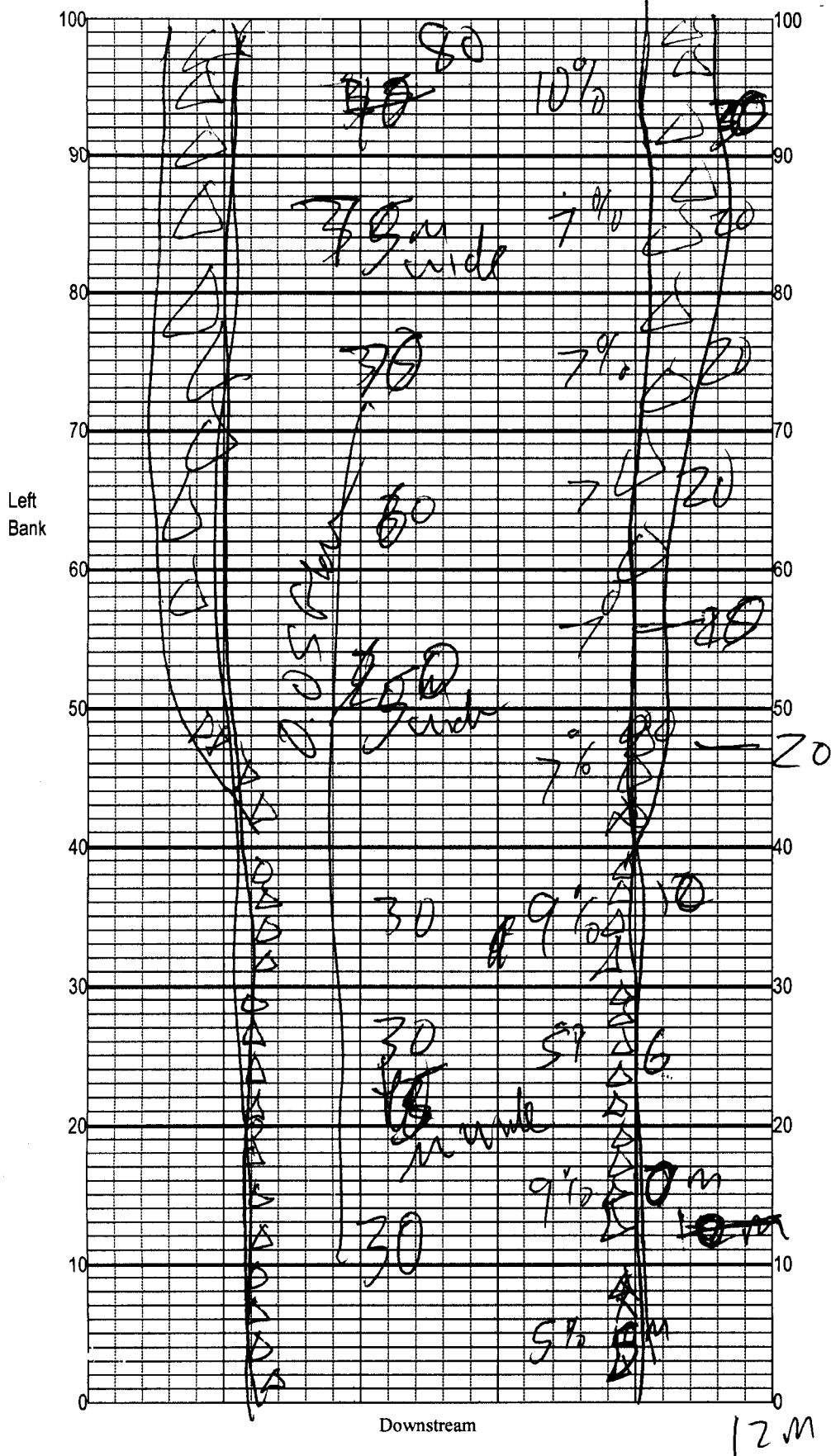
SAMPLING AGENCY:		STORET STATION NUMBER: 62 NE 194	DATE (MM/DD/YY): 10/30/19	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: Putnam	LOCATION: Bull Creek 1.0 m up head of lake		FIELD ID/NAME:

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 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability 63	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 S	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 S Primary Score 2017	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 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 18	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	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. 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 woody 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 8 Left Bank 8 Secondary Score 72	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: 10/30/19	Analyst: Jeremy Carr	Signature: Jeremy Carr
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Bullcreek 1 mile upstream
 Date: 10/30/19
 Sampler: SPM

100 m: Latitude _____	Longitude _____
0 m: Latitude _____	Longitude _____
Substrates: Code key, draw proportionate habitat abundance. %	
☐ Snags	_____ %
☐ Roots/undercut banks	_____ %
☐ Leaf Packs (or mats)	_____ %
☒ Aquatic Macrophytes	<u>6</u> %
☐ Pools	_____ %
total # observed = _____	
# range expected = _____	
Average width _____ m	
Average depth _____ m	
Velocity measured at _____ meter mark.	
WQ & chemistry taken at _____ 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:

2500 total
plants +
5000 total

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

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

SAMPLE ID _____ ORG ID _____ LATITUDE _____
 COUNTY _____ STORET # 62 NE 1194 LONGITUDE _____
 DATE 10/30/19 TIME 10:15 SAMPLING AGENCY _____
 SITE NAME Bull Cr. In: upshen
 FIELD ID/NAME _____ RECEIVING BODY OF WATER _____

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) ☐								Landscape Development Intensity Index (LDI) <u>50</u>
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution: ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy						Typical Width (m) <u>50</u> Depth (m)/Velocity (m/sec) Transect m/s <u>0.05</u> m/s ☐ m/s ☐ m deep <u>1.3</u> m deep ☐ m deep ☐		
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>15</u> Right Bank: <u>>15</u>				Hydrologic Modification Score (per FT 3101) ☐		High Water Mark: <u>0.8</u> + <u>1.3</u> = <u>1.8</u> (m) (above present water level) (present depth) (above bed)		
Artificially ☒ No ☐ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe				Artificially Impounded ☐ Yes ☒ No 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 ☐		
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon INVERT PERI % # Times # Times Coverage Sampled Sampled Woody Debris (Snags) ☐ ☐ ☐ Undercut Banks / Roots ☐ ☐ ☐ Leaf Packs or Mat ☐ ☐ ☐ Aquatic Vegetation <u>3</u> ☐ ☐ 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: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Mid: <u>0.3</u> <u>27.1</u> <u>6.77</u> <u>2.84</u> <u>36.9</u> <u>688</u> <u>0.33</u> ☐ VOB Bottom: <u>1.3</u> ☐ ☐ ☐ ☐ ☐ ☐ ☐ Meter ID: _____ TOTAL DEPTH ☐					
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☒ ☐ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			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: _____ Exp: _____			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐			Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐		
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			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 <u>Jan</u>			SIGNATURE: <u>Jan</u>			DATE: <u>10/30/19</u>		

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:					County:		Date:		Investigators:	
Transec t (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transec t (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	STORET Station Number:
0	1	N	N		60	1	N	N		Secchi depth Estimated?
	2	N	N			2		N		
	3	N	N			3		N		
	4	N	N			4		N		
	5	N	N			5		N		
	6	N	N			6		N		
	7	N	N			7		N		
	8	N	N			8		N		
	9	N	N			9		N		
10	1	N	N		70	1	N	N		# points ranked 4-6 total points assessed % points ranked 4-6
	2	N	N			2		N		
	3	N	N			3		N		
	4	N	N			4		N		
	5	N	N			5		N		
	6	N	N			6		N		
	7	N	N			7		N		
	8	N	N			8		N		
	9	N	N			9		N		
20	1	N	N		80	1	N	N		Check accompanying data collected at same site/date. Algal mat sample Linear Veg Survey Habitat Assessment SCI/Biorecon Water sample RQ-
	2	N	N			2		N		
	3	N	N			3		N		
	4	N	N			4		N		
	5	N	N			5		N		
	6	N	N			6		N		
	7	N	N			7		N		
	8	N	N			8		N		
	9	N	N			9		N		
30	1	N	N		90	1	N	N		Algal Thickness Rank
	2	N	N			2		N		
	3	N	N			3		N		
	4	N	N			4		N		
	5	N	N			5		N		
	6	N	N			6		N		
	7	N	N			7		N		
	8	N	N			8		N		
	9	N	N			9		N		
40	1	N	N		100	1	N	N		N rough, no algae, slimy, algae up to 1mm 3 >1mm - 6mm 4 >6mm - 20mm 5 >20mm - 10 cm 6 >10 cm
	2	N	N			2		N		
	3	N	N			3		N		
	4	N	N			4		N		
	5	N	N			5		N		
	6	N	N			6		N		
	7	N	N			7		N		
	8	N	N			8		N		
	9	N	N			9		N		
50	1	N	N		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%.					
	2	N	N							
	3	N	N							
	4	N	N							
	5	N	N							
	6	N	N							
	7	N	N							
	8	N	N							
	9	N	N							

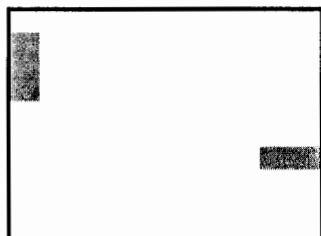
DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: <u>Suit Creek</u>		Date: <u>10/30/19</u>	County:	Storet Number:																			
Analyst: <u>J. Parrish & K. Appleby</u>		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.																							
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	P	P	P	P	P	P	P	P	P	P		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				P			P	P	P	P		Pistia stratioides	P	P	P	P	P	P	P	P	P		
Colocasia esculenta												Polygonum glabra											
Commelina diffusa												Polygonum hydropiperoides											
Commelina virginica												Polygonum punctatum											
Crinum americanum												Pontedaria cordata											
Diodia virginiana												Potamogeton illinoensis											
Eichhornia crassipes												Ruellia simplex											
Eleocharis (wispy viviparous)												Sacciolepis striata				P		P	P				
Hydrilla verticillata												Sagittaria kurziana											
Hydrocotyle	P	P	P	P	P	P	P	P	P	P		Sagittaria lancifolia											
Hygrophila polysperma												Sagittaria latifolia											
Hymenocallis												Salvinia minima	P	P	P	P	P	P	P	P	P		
Lachnanthes caroliniana												Samolus parviflora											
Landoltia punctata												Saururus cernuus											
Lemna												Sparganium americanum											
Limnophila sessiflora												Typha											
Ludwigia leptocarpa												Vallisneria americana											
Ludwigia palustris												Zizania aquatica											
Ludwigia peruviana	P	P	P	P	P	P	P	P	P	P		Myrica	P	P	P	P	P	P	P	P	P		
Ludwigia repens												Taxodium	P	P	P	P	P	P	P	P	P		
Luziola fluitans												Cephalanthus	P	P	P	P	P	P	P	P	P		
												Mikania	P	P	P	P	P	P	P	P	P		
												Alex	P	P	P	P	P	P	P	P	P		
												Rhyncho spora											
												Ceratopteris				P							
												Salix					P	P		P			
If no Dominant or Co-Dominant were selected, indicate with "X"												Oxycorram								P	P		
Indicate % cover macrophytes per section												Hibiscus								P	P		
0-5% Macrophyte Coverage																							
>5 and ≤10% Macrophyte Coverage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓													
>10 and ≤25% Macrophyte Coverage																							
>25 and ≤50% Macrophyte Coverage																							
> 50% Macrophyte Coverage																							

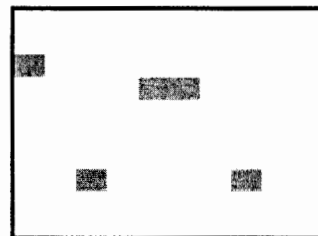
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

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

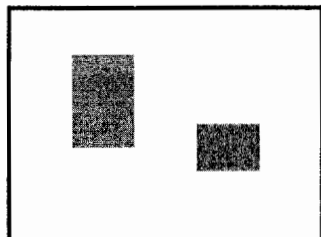
5% Macrophyte Coverage



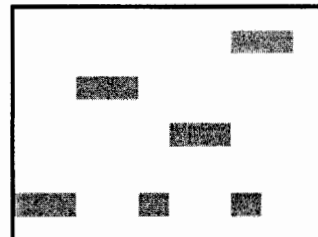
5% Macrophyte Coverage



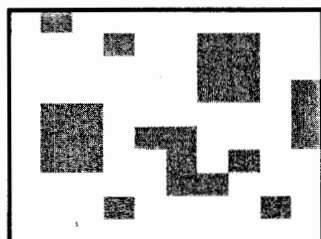
10% Macrophyte Coverage



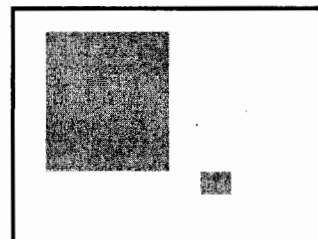
10% Macrophyte Coverage



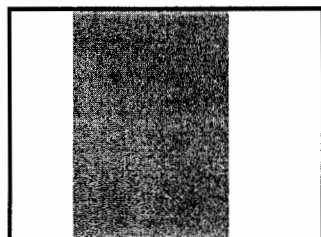
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage

