



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2020

Meter Passed End

of Day CCV

☒ Yes / ☐ No

WIN Station Name: Hart Branch @ 100m DS of Boardwalk

Date: 12/10/2020

WIN/Field ID: G4CE0201

WBID: 3171EB

ENR:

Latitude: 28.420496

County: Orange

Org ID: 21FLCEN

Longitude: -81.217677

Receiving Body of Water: Lake Hart

RQ- 2020-12-07-26

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒ Leif Boman	☒	☒			
☒ Victoria Schwartz	☒	☒	☒	☒	☒
☐					
☐					

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☒ Syringe	☐ Pole
Depth measured with: Secchi	
Secchi Equipment ID: Knothead	
Collection Method	
☒ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other	☐ Gasoline Motor

Water Level: ☒ Normal ☐ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded		Meter ID# CRAW DADDY	
Photos: YES	Flow: FLOW	Tide:	Tide Times: High: Low:
Biological Samples Collected: ☐ None ☒ HA ☒ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:			
SBIO ID Numbers: SBIO 81747 RPS 9637		No LVS, box shouldn't be checked- KM LIMS 2212596	
Notes:			

Duplicate Sample

Time Zone: EST	Time: N/A	Field ID: N/A	(WIN ID_DUP)
WIN DMT Activity ID:			

Blank

Time Zone:	Time: N/A	Field ID: N/A	(Blank Type_DDMYYYY)
DI Source: N/A	Location: N/A		
DI Type: N/A	Equipment ID: N/A		

LIMS EVENT ID: CEN-DIST-2020-12-11-01

WIN Import ID: 24003

Enter Field Parameters, Verify Station ID In LIMS DMT: KWM 1/4/21

QC Station ID, Field Parameters In LIMS DMT: TR 1/11/2021

(Initials/Date)

(Initials/Date)

Scan/Save Field Sheets KWM 2/15/21

Migrate Data to WIN: KWM 2/15/21

Verify Data In WIN:

(Initials/Date)

(Initials/Date)

(Initials/Date)



RQ-2020-12-07-26

Customer: WQAP

Project ID: SMP

Collected By: Leif Boman, Victoria Schwartz

Field Report Prepared By: Leif Boman

Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID:



G4CE0201

Location: Hart Branch @ 100m DS of Boardwalk

Comments: Please add ECOLI-18QT (Qty 1 Bottle Group A) and MI-FW-QLDC (Qty 2 Bottle Group A) to RQ-2020-12-07-26

Matrix: Fresh

(Check one)

☒ GRAB☐ COMPOSITE

Date	Time	DO (mg/L)	DO (%SAT)	Temp. (C°)	pH	Sample Depth (m)	Secchi Disk (m)	Total Depth (m)	Sp COND (µmhos/cm)	Salinity (PPTH)
12/10/2020	1305 EST	7.98	74.9	12.5	5.83	0.15	0.3 ☒ VOB (S)	0.3	116.4	0.05

Central Lab please use top row for login purposes

EST										
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Parameter Suite	Parameter Methods	Preservation	pH Check	# Bottles sent to Lab	Bottle Group
Preserved Nutrients (P-500ML)	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP Lot # 112544 Exp: 12/20/20	☒ Ice ☒ H2SO4*	☒ <2	1	A
Metals (P-500ML)	☒ W-ICPMS ☒ W-ICP ☒ W-HARD Lot # NA9354060 Exp: 12/20/20	☒ Ice ☒ HNO3*	☒ <2	1	A
Filtered Nutrients (P125ML)	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter Filter Lot # 16930280 Syringe Lot # 9149785	☒ Ice		1	A
Chlorophyll (BP-1L)	☒ CHLSUITE-W	☒ Ice		1	A
Physical/Aggregate (Fresh) (P-1L)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice		1	A
Physical/Aggregate (Marine) (P-1L)	☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates (PJ-2L)	☒ MI-FW-QLDC	☒ Formalin		2	A
Periphyton (PT-50ML)	☐ ALGAE-ID	☐ Ice			
Microbiology (Contract Lab Bottle)	☒ E Coli ☐ F Coli ☐ Enterococci ☐ Contract Lab	☒ Ice		1	A
Molecular (QPCR-P-500ML)	☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3 ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers (BG-500ML)	☐ W-E8321-DI ☐ W-E8321-MS	☐ Ice			
Pesticides (BG-500ML) (BG-1L)	☒ W-E8321-DI ☒ WE8321-MS ☒ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-PCL-SQ-R ☐ W-CARB-AA (5 ml of MCAA** Buffer Solution)	☒ Ice		5	A
		☐ Ice			

Name:
Leif Boman
Victoria Schwartz

Signature:

Victoria Schwartz

Date:

12/10/20

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

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

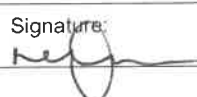
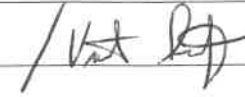
SAMPLING AGENCY: FDEP / 21PCEN		STORET STATION NUMBER:	DATE (MM/DD/YY): 12/10/20	RECEIVING BODY OF WATER: Lake Hart
REMARKS:	COUNTY: Orange	LOCATION: Hart Branch	FIELD ID/NAME: G4CE0201	

WSID: 3171EB

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 15	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability 9	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 11.387 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 15	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 18 ----- Primary Score 57	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. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening 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 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 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

137

TOTAL SCORE

Date: 12/10/20	Analyst: Leif Boman / Victoria Schwan	Signature:  
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

Barwalk

WBID: 3171EB
(64CE0201)

Location: Hart Branch

Date: 12/10/20

Sampler: Leif Boman/Victoria Schwartz

100 m: Latitude 28.421375
Longitude -81.217600
0 m: Latitude 28.420496
Longitude -81.217617

Substrates: Code key, draw proportionate habitat abundance.

	Snags	9.5
	Roots/undercut banks	1.08
	Leaf Packs (or mats)	0.8
	Aquatic Macrophytes	0.23
	Pools	total # observed = 4 # range expected = 3-6

Average width 3.0 m
Average depth 0.5 m

Velocity measured at 35 meter mark + 60m

WQ & chemistry taken at 0 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.

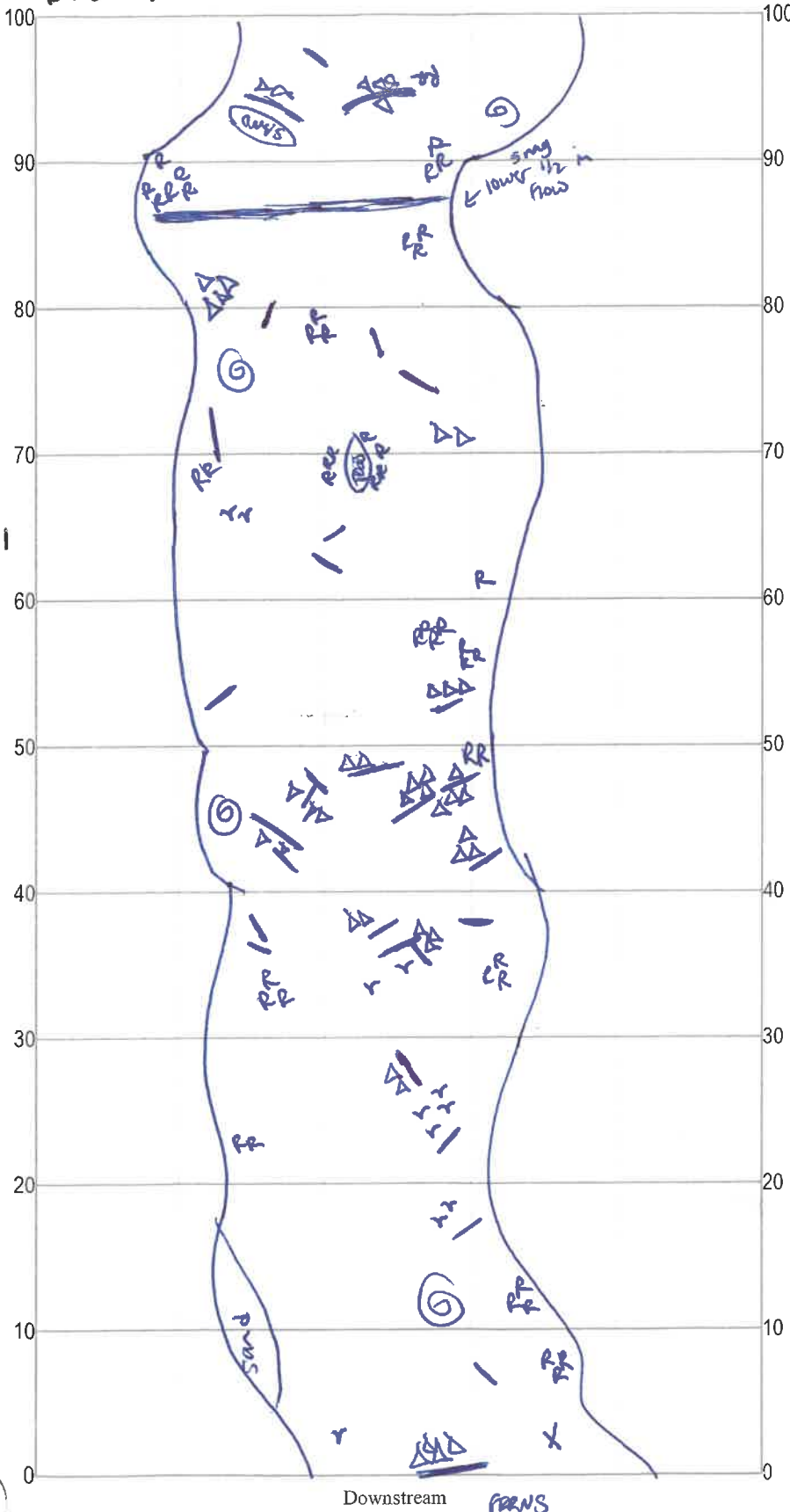
Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Saururus cernuus
Hydrocotyle

New Station:
28.4204958
-81.2176769
(64CE0201)

Revision Date: March 1, 2014



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

$$S = 28.5 m^2 = 9.5\%$$

$$R = 3.25 m^2 = 1.08\%$$

$$\Delta = 2.4 m^2 = 0.8\%$$

$$\gamma = 0.7 m^2 = 0.23\%$$

$$total = 34.85 m^2$$

$$total productive = 34.15 m^2 / 300 = 11.38\%$$

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

SAMPLE ID _____ ORG ID 21FLCEN LATITUDE 28.420496
 COUNTY Orange STORET # _____ LONGITUDE -81.217677
 DATE 12/10/20 TIME 14:00 SAMPLING AGENCY 21FLCEN / CE-ROD
 SITE NAME Hart Branch @ 100 m DS of Boardwalk (WBID: 3171EB) FDEP
 FIELD ID/NAME 64CE0201 RECEIVING BODY OF WATER Lake Hart

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>50</u> Silviculture _____ Field/Pasture _____ Agricultural _____ Residential <u>50</u> Commercial _____ 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>3</u> m wide		
Width of Riparian Vegetation (m) on Each Buffer Side 718m Left Bank: <u>240m</u> Right Bank: <u>65m</u>				Hydrologic Modification Score (per FT 3101) _____		.25 m/s <u>4 sec</u> 0.20 m/s <u>5 sec</u> .25 m/s <u>4 sec</u>		
High Water Mark: <u>0.2</u> + <u>0.3</u> = <u>0.45</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No		0.3 m deep 0.5 m deep 0.3 m deep		
Artificially ☒ No ☐ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☒ Moderate Shaded (46-80%) (Avg = 73%)				

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 ☐ LCI ☐ BioRecon				WATER QUALITY							
	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)			
Top:	<u>0.15</u>	<u>12.5</u>	<u>5.83</u>	<u>7.98</u>	<u>74.9</u>	<u>116.4</u>	<u>0.05</u>	<u>0.3</u>			
Mid:									☒ VOB		
Bottom:											
Meter ID: <u>Craw Daddy</u>											
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: <u>SA112544</u> <u>NA9354060</u> Exp: <u>12/20/20</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:	☒	☐	☐	☐

AMBIENT FIELD CONDITIONS / NOTES:

• Sunny / cool temps.
 • New homes built in neighborhood ~ 250 m E of site w/ elevated boardwalk crossing over stream
☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM Leif Boman / Victoria Schwartz SIGNATURE: [Signature] DATE: 12/10/20

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Hart Branch (GHCE0201) County: Orange Date: 12/10/20 Investigators: Leif Boman/Victoria Schwartz

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				VS 60	1			
	2					2			
	3					3			
	4					4			
	5	N		68%		5	N	✓	66%
	6			65		6		✓	63
	7					7			
	8					8			
	9					9			
10	1		✓		VS 70	1			
	2		✓			2			
	3		✓			3			
	4		✓			4			
	5	N	✓	56%		5	N		58%
	6			54		6			56
	7					7			
	8					8			
	9					9			
20	1				VS 80	1			
	2					2			
	3					3			
	4					4			
	5	N		54%		5	N		84%
	6			52		6			85
	7					7			
	8					8			
	9					9			
30	1				VS 90	1			
	2					2			
	3					3			
	4					4			
	5	N		87%		5	N		94%
	6			84		6			90
	7					7			
	8					8			
	9					9			
40	1				VS 100	1			
	2					2			
	3					3			
	4		✓			4			
	5	N	✓	89%		5	N		90%
	6		✓	85		6			67
	7		✓			7			
	8					8			
	9					9			
50	1				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								
	3								
	4		✓						
	5	N	✓	94%					
	6		✓	71					
	7		✓						
	8								
	9								

Secchi depth 0.3 v08
Estimated?

points ranked 4-6 0
total points assessed 79
% 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- 2020-12-07-26

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

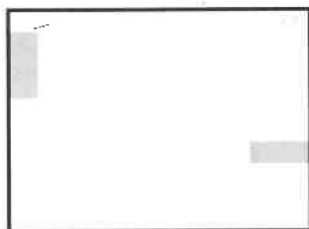
*No LVS performed due to <2m² veg.

[illegible]

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



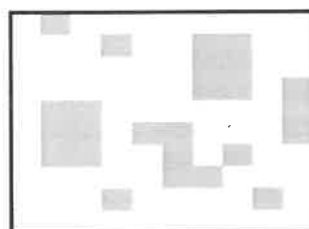
10% Macrophyte Coverage



10% Macrophyte Coverage



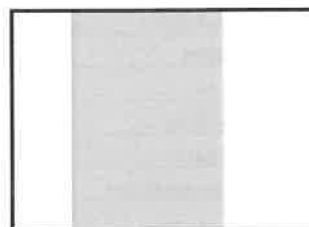
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage

