



Reference Stream SCI

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF 1

Data Qualified?

Yes / No

October 2017

Location/STORET Station Name:

Bear Creek @ Northern Way Bridge

Date: 12/20/17

(mm/dd/yyyy)

STORET # 20010049

WBID: 2999

Latitude

28.68095677

(Decimal Degrees)

County: Seminole

RQ - 2017-12-18-24

ORG ID: 21FLCEN

Longitude:

-81.23832922

(Decimal Degrees)

Receiving Body of Water:

Field ID: 20010049

Sampling Team Members

Let Boman
Katie Williams

WQ Measurements

Sample Collection

Documentation

Preservation

Preservation Check

Sampling Equipment

- ☒ Sample Container ☐ Van Dorn ☐ Pole
☐ Carboy ☐ Syringe
☐ Dipper ☐ Other

Equipment ID

Collection Method

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

Water Level: Dry / Low / Normal / Above Normal / Flooded

Meter ID#

Boop-non

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	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Secchi Disk (m)	Sp COND (umhos/cm)	Temp. (C°)
EST	1110	0.2	0.3	7.1	78	7.1	0.14	0.3(s)	292	20.3
CEN										

Biological Samples Collected:

None

HA

SCI

RPS

Algae ID

LVS

LVI

Other

SBIO ID Numbers:

SBIO-ID: 78160

HA-ID: 14946

RPS-ID: 8863

Macrophyte-ID:

n/a

LIMS#: 1955590

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / ☒ W-NO2NO3 / ☒ W-TKN / ☒ W-TOC / ☒ W-S-ATP	☒ Ice ☒ H2SO4	SA7275010	10/18	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <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-CI-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	☐ Ice			
Molecular	☒ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-UHERB-AA ☐ W-AHERB-AA ☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R	☐ Ice ☐ Other			

Contains: 1:1 Sulfuric Acid
 Lot No.: SA7275010
 Expires: 10/02/18
 See Safety Data Sheet (SDS)

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 Lot No.: SA7275010
 Expires: 10/02/18
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Notes:

Bear Creek @ Northern
Way BridgeRQ-2017-12-18-24
Date: 12/20/2017

Date:

12/20/17

20010049

Field ID

STORET

20010049

Signature:

Katie Williams

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 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21FLCEN LATITUDE _____
 COUNTY Seminole STORET # 20010049 LONGITUDE _____
 DATE 12/20/17 TIME _____ SAMPLING AGENCY _____
 SITE NAME Bear Creek Northern Way Bridge
 FIELD ID/NAME 20010049 RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>25</u> Silviculture _____ Field/Pasture _____ Agricultural <u>75</u> Residential _____ 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 _____ m wide <u>0.15</u> m/s <u>0.17</u> m/s <u>0.15</u> m/s <u>0.1</u> m deep <u>0.3</u> m deep <u>0.1</u> m deep				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) _____				
High Water Mark: <u>0.6</u> + <u>0.3</u> = <u>0.9</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 ☐																																																																									
SUBSTRATE TYPE Assessment Tool: ☒ SCI ☐ RPS ☐ LVS ☐ LCI ☐ BioRecon <table border="1"> <thead> <tr> <th></th> <th>% Coverage</th> <th>INVERT # Times Sampled</th> <th>PERI # Times Sampled</th> </tr> </thead> <tbody> <tr> <td>Woody Debris (Snags)</td> <td></td> <td><u>15</u></td> <td></td> </tr> <tr> <td>Undercut Banks / Roots</td> <td></td> <td><u>15</u></td> <td></td> </tr> <tr> <td>Leaf Packs or Mat</td> <td></td> <td><u>35</u></td> <td></td> </tr> <tr> <td>Aquatic Vegetation</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Rock or Shell Rubble..</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sand.....</td> <td></td> <td><u>35</u></td> <td></td> </tr> <tr> <td>Mud / Muck / Silt</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				% Coverage	INVERT # Times Sampled	PERI # Times Sampled	Woody Debris (Snags)		<u>15</u>		Undercut Banks / Roots		<u>15</u>		Leaf Packs or Mat		<u>35</u>		Aquatic Vegetation				Rock or Shell Rubble..				Sand.....		<u>35</u>		Mud / Muck / Silt				Other				Other				WATER QUALITY <table border="1"> <thead> <tr> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top: <u>0.2</u></td> <td><u>20.3</u></td> <td><u>7.1</u></td> <td><u>7.1</u></td> <td><u>78</u></td> <td><u>292</u></td> <td><u>0.14</u></td> <td>☒ VOB</td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bottom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Meter ID: <u>Boop-Non</u> TOTAL DEPTH <u>0.3</u>			Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top: <u>0.2</u>	<u>20.3</u>	<u>7.1</u>	<u>7.1</u>	<u>78</u>	<u>292</u>	<u>0.14</u>	☒ VOB	Mid:								Bottom							
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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 ☐																																																																										
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AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																																																													
SAMPLING TEAM <u>Katie Williams, Leaf Boman</u>			SIGNATURE: <u>Katie Williams</u>		DATE: <u>12/20/17</u>																																																																								

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

SAMPLING AGENCY:		STORET STATION NUMBER: <u>20010049</u>	DATE (MM/DD/YY): <u>12/20/17</u>	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: <u>Seminole</u>	LOCATION: <u>Bear Creek</u>	FIELD ID/NAME: <u>20010049</u>	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, <u>leaf packs</u> (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 11	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 5 4 3 2 1
Water Velocity <u>13</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 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 <u>11</u> ----- Primary Score <u>38</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 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 11	10 9 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>6</u> Left Bank <u>7</u>	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	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>9</u> Left Bank <u>8</u>	10 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>7</u> Left Bank <u>7</u> ----- Secondary Score <u>62</u>	10 9	8 7 6	5 4	3 2 1

100 TOTAL SCORE

Date: <u>12/20/17</u>	Analyst: <u>Katie Williams</u>	Signature: <u>KWilliams</u>
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DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: <u>Bear Creek</u>	Date: <u>12/20</u>	County: <u>Seminole</u>	Storet Number: <u>20010049</u>
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Analyst:	Signature:
----------	------------

Comments: $2m^2$ vegetation, no LVS

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.

[illegible]

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Bear Creek</u>					County: <u>Seminole</u>		Date: <u>12/30/17</u>		Investigators: <u>KMW, LGB</u>	
									STORET Station Number: <u>20010049</u>	

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	2	↓	80	60	1	2	↓	76
	2	2				2			
	3	2				2			
	4	2				2			
	5	2				2			
	6	2				2			
	7	2				2			
	8	2				2			
	9	2				2			
10	1	2	↓	84	70	1	2	↓	82
	2	2				2			
	3	2				2			
	4	2				2			
	5	2				2			
	6	2				2			
	7	2				2			
	8	2				2			
	9	2				2			
20	1	2	↓	70	80	1	2	↓	60
	2	2				2			
	3	2				2			
	4	2				2			
	5	2				2			
	6	2				2			
	7	2				2			
	8	2				2			
	9	2				2			
30	1	2	↓	86	90	1	2	↓	72
	2	2				2			
	3	2				2			
	4	2				2			
	5	2				2			
	6	2				2			
	7	2				2			
	8	2				2			
	9	2				2			
40	1	2	↓	74	100	1	2	↓	88
	2	2				2			
	3	2				2			
	4	2				2			
	5	2				2			
	6	2				2			
	7	2				2			
	8	2				2			
	9	2				2			
50	1	2	↓	66		1	2	↓	
	2	2				2			
	3	2				2			
	4	2				2			
	5	2				2			
	6	2				2			
	7	2				2			
	8	2				2			
	9	2				2			

Secchi depth	0.3(s)
Estimated?	

# points ranked 4-6	0
total points assessed	99
% 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- 2017-12-18-24	

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

Almost no algae noted compared to last visit. Just moss.

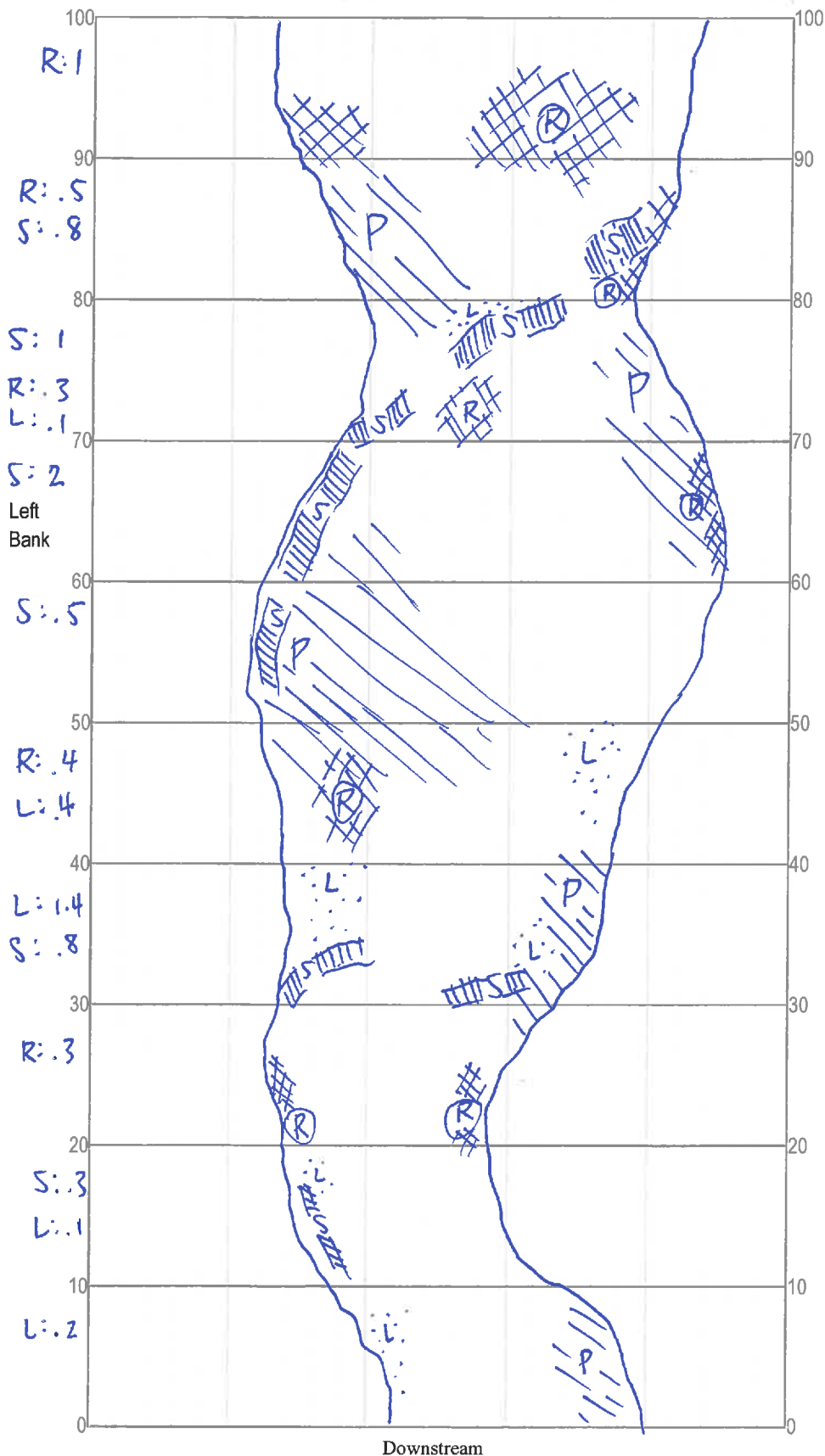
Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

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 9000-4 Stream/River Habitat Assessment Sketch Sheet



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

Location: Bear Creek
Date: 12/20/17
Sampler: _____

100 m: Latitude _____	Longitude _____
0 m: Latitude _____	Longitude _____
Substrates: Code key, draw proportionate habitat abundance.	
Snags	% <u>2.7</u> <u>5.4</u> 40
Roots/undercut banks	<u>1.25</u>
Leaf Packs (or mats)	<u>1.1</u>
Aquatic Macrophytes	_____
Pools	total # observed = <u>5</u> # range expected = _____
Average width <u>2</u> 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:

R: 2.5
S: 5.4
L: 2.2