



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2020

Meter Passed End
of Day CCV
☒ Yes / ☐ No

WIN Station Name: Spruce Creek @ 120m DS of Spruce Creek Blvd

Date: 12/8/2020

WIN/Field ID: G5CE0129

WBID: 2674

ENR:

Latitude: 28.081975

County: VOLUSIA

Org ID: 21FLCEN

Longitude: -81.054695

Receiving Body of Water: Halifax River

RQ: 2020-09-21-57

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒	Katie March	x		x		
☒	Elizabeth Bates		x		x	x
☐						
☐						

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: No	Flow: FLOW	Tide:	Tide Times: High: Low:
Biological Samples Collected: ☒ None ☐ HA ☐ SCI ☐ RPS ☐ Algae ID ☐ LVS ☐ LVI Other:			
SBIO ID Numbers: SBIO 81731 RPS 9626		MACROPHYTE N/A LIMS 2211720	
Notes: SAMPLED ON OTHER SIDE OF BRIDGE DUE TO ACCESS ISSUES FOR 100M			

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_DDMMYYYY)
DI Source: N/A		Location: N/A	
DI Type: N/A		Equipment ID: N/A	

LIMS EVENT ID: CEN-2020-12-09-02	WIN Import ID: 23599
Enter Field Parameters, Verify Station ID In LIMS DMT: KWM 12/11/20	QC Station ID, Field Parameters In LIMS DMT: TR 01/04/21
(Initials/Date)	(Initials/Date)
Scan/Save Field Sheets KWM 1/15/21	Migrate Data to WIN: KWM 1/15/21
(Initials/Date)	(Initials/Date)
Verify Data In WIN:	(Initials/Date)



RQ-2020-09-21-57

Customer: WQAP

Project ID: SMP

Collected By: Katie March, Elizabeth Bates

Field Report Prepared By: Katie March

Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID:



G5CE0129

Location: Spruce Creek @ 120m DS of Spruce Creek Blvd

Comments:

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)
12/8/2020	1220 EST	7.65	75.2	14.6	6.83	0.315	0.4 ☐ VOB (S)	1	226.8	0.11

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	☒ Ice ☒ H2SO4*	☒ <2	1	A
	Lot # Sa0293040 Exp: 10/19/21				
Metals (P-500ML)	☒ W-ICPMS ☒ W-ICP ☒ W-HARD	☒ Ice ☒ HNO3*	☒ <2	1	A
	Lot # Na9354060 Exp: 12/20/20				
Filtered Nutrients (P125ML)	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice		1	A
	Filter Lot # 16930280				
	Syringe Lot # 9149785				
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			
Periphyton (PT-50ML)	☐ ALGAE-ID	☐ Ice			
Microbiology (Contract Lab Bottle)	☐ E Coli ☐ F Coli ☐ Enterococci ☐ Contract Lab	☐ Ice			
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	☐ Ice			
	☐ W-PCL-SQ-R ☐ W-CARB-AA (5 ml of MCAA** Buffer Solution)	☐ Ice			
		☐ Ice			

Name:
Katie March
Elizabeth Bates

Signature:

Kathryn March

Date:

12/8/20

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

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

SAMPLE ID	ORG ID <u>21FUCN</u>	LATITUDE
COUNTY <u>Volusia</u>	STORET # <u>65200129</u>	LONGITUDE
DATE <u>12/8/20</u>	TIME	SAMPLING AGENCY
SITE NAME <u>Spence Creek</u>	RECEIVING BODY OF WATER <u>Halifax</u>	
FIELD ID/NAME		

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>50</u> Silviculture <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>40</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>golf course</u> <u>airport</u>								Landscape Development Intensity Index (LDI) <u>0</u>
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>5</u> m wide <u>0.2</u> m/s <u>1.1</u> m deep		
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>718</u> Right Bank: <u>718</u>				Hydrologic Modification Score (per FT 3101) <u>0</u>		Artificially Impounded ☐ Yes ☒ No		
High Water Mark: <u>1.0</u> + <u>10</u> = <u>20</u> (m) (above present water level) (present depth) (above bed)				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			WATER QUALITY <table border="1"> <thead> <tr> <th></th> <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:</td> <td><u>0.35</u></td> <td><u>14.6</u></td> <td><u>6.83</u></td> <td><u>7.65</u></td> <td><u>75.2</u></td> <td><u>224.8</u></td> <td><u>0.11</u></td> <td><u>0.4</u></td> </tr> <tr> <td>Mid:</td> <td></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> <td></td> </tr> </tbody> </table>							Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	<u>0.35</u>	<u>14.6</u>	<u>6.83</u>	<u>7.65</u>	<u>75.2</u>	<u>224.8</u>	<u>0.11</u>	<u>0.4</u>	Mid:									Bottom:								
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Woody Debris (Snags) ☐ Undercut Banks / Roots ☐ Leaf Packs or Mat ☐ Aquatic Vegetation ☐ Rock or Shell Rubble ☐ Sand ☐ Mud / Muck / Silt ☐ Other ☐			Meter ID: <u>Crow Daddy</u>			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐																																						
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp:			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐			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: <u>Sampled on other side of bridge from past sampling due to access issues for assessing 100 meters</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																									
SAMPLING TEAM <u>Bates, March</u>			SIGNATURE: <u>March</u>			DATE: <u>12/8/20</u>																																						

[illegible]

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Spruce Creek</u>					County:		Date: <u>12/6/20</u>		Investigators: <u>Bates, Mandy</u>	
									STORET Station Number: <u>05CE0129</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	✓	32	60	1	N	✓	56	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
10	1	2	✓	42	70	1	N	✓	20	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
20	1	2	✓	39	80	1	N	✓	34	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
30	1	2	✓	44	90	1	N	✓	36	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
40	1	2	✓	29	100	1	N	✓	41	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
50	1	2	✓	32		1	N			
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									

Secchi depth 0.4
Estimated?

points ranked 4-6 0
total points assessed 100
% 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- 2020-09-21-57

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

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 9000-5 Stream/River Habitat Assessment Field Sheet

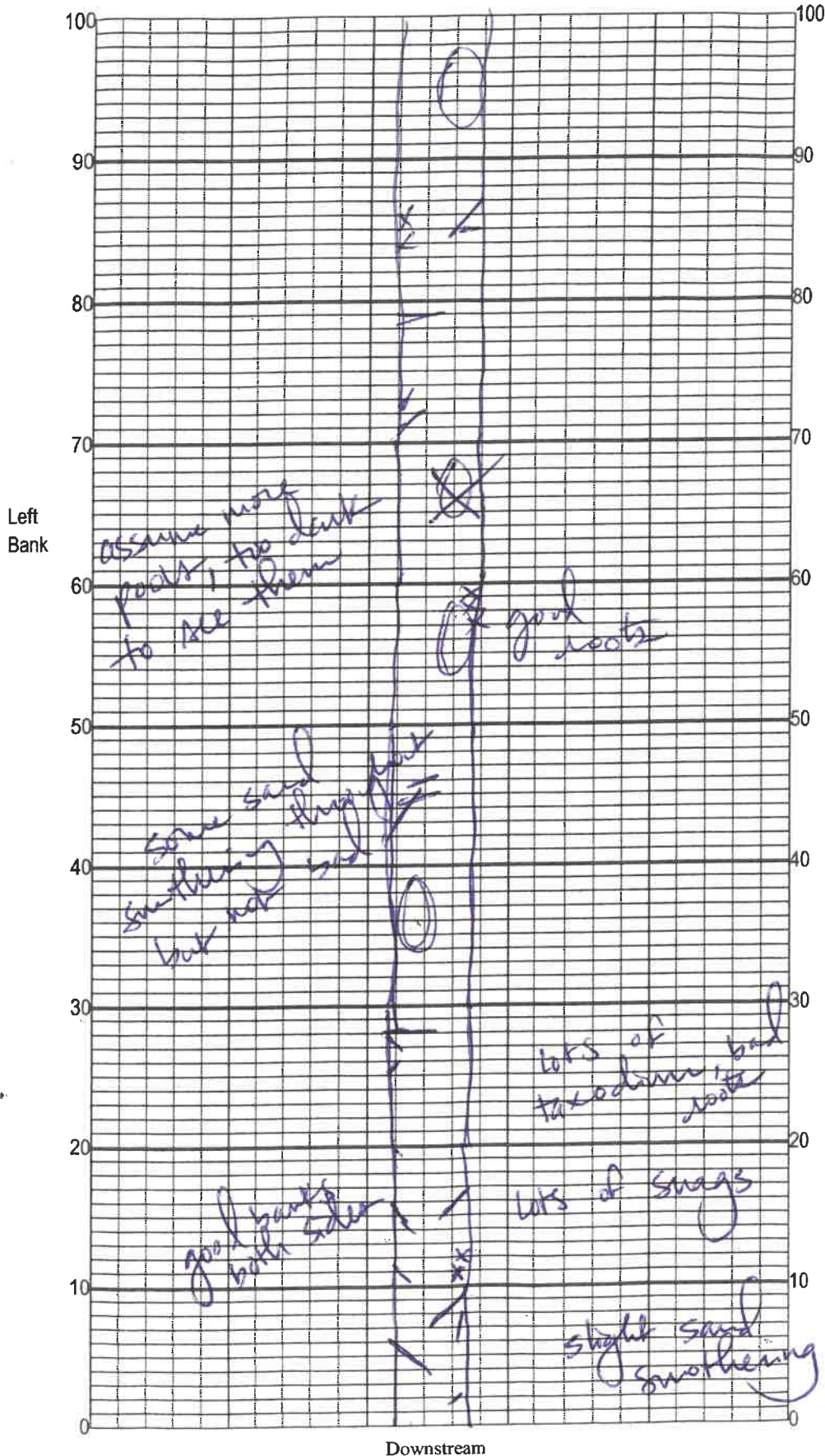
SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY): <u>12/8/20</u>	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: <u>Volusia</u>	LOCATION: <u>Spence Creek</u>		FIELD ID/NAME:

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 <u>lots of snags</u>	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>9</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>4</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>14</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>16</u> Primary Score <u>43</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 <u>16</u>	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 <u>18</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 woody 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 woody root zone with raw, eroded areas.
Right Bank <u>9</u> Left Bank <u>9</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>10</u> Left Bank <u>9</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>8</u> Left Bank <u>8</u> Secondary Score <u>71</u>	10 9	8 7 6	5 4	3 2 1

114 TOTAL SCORE

Date: <u>12/8/20</u>	Analyst: <u>Mauch Bates</u>	Signature: <u>Kmauch</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Spring Creek
 Date: 12/8/20
 Sampler: Maida, Bates

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	_____ %
☐ _____	_____ %
☐ _____	_____ %
☒ Pools	total # observed = <u>3</u> # range expected = <u>23</u>
Average width <u>5</u> m	
Average depth <u>1</u> m	
Velocity measured at <u>0</u> meter mark.	
WQ & chemistry taken at <u>100</u> 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:
 coccinea, asarum,
 ruellia, taxodium,
 liquidambar, nyssa,
 salal, acer

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

Very turbid water, probably underestimated
 habitat we could not see.