



Reference Stream SCI

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF 1

February 2017

Data Qualified?

Yes / No

STORET Station Name: Bear Creek @ Northern way bridge Date: 3/22/17STORET Station ID: 20010049 WBID: 2999 Latitude: 28.48095677County: Seminole RQ - 2017-02-27-60 ORG ID: 21FLCEV Longitude: -81.23832922Receiving Body of Water: _____ Field ID: 20010049

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment			
Natalee Anala									☒ Sample Container	☐ Van Dorn	☐ Pole	
Mike Linger									☐ Carboy	☐ Syringe		
Katie Williams									☐ Dipper	☐ Other		
City of Orlando									Equipment ID _____			
Collection Method												
☒ Wading									☐ Via Boat			
☐ From Shore									☐ Canoe/Kayak			
☐ Other (note below)									☐ Electric Motor			
									☐ Gasoline Motor			
Water Level: Dry / Pooled / <u>Low</u> Normal / High / Flooded									Matrix: <u>Fresh</u> Marine / DI			
Meter ID# <u>Boop-non</u> Photos: <u>Yes</u> / No									Tide Falling: Yes / No / <u>NA</u>			
Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)		
EST	1044	0.2	0.4	7.8	85	7.4	0.1	0.4(s)	284	19.2		
CEN												

Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other _____
SBIO ID Numbers: SBIO-ID: 77434 RPS-ID: _____ Macrophyte-ID: _____ LIMS#: 1982402

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☐ Ice ☐ H2SO4			☐ <2
Metals	☒ W-ICPMS ☒ W-ICP	☐ Ice ☐ HNO2			☐ <2
Filtered Nutrients	☐ W-PO4-F ☐ Field Filtered 0.45 µm Filter	☐ Ice			
Chlorophyll	☒ CHLSUITE-W	☐ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CLIC / 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 ☐ Enterococcus ☐ PCR-FILTER	☐ Ice			
Tracers	☒ W-LCMS-DU (1/4 vial fill) ☐ W-UHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-LCMS-DU (1/4 vial fill) ☐ W-PCL-SQ-R ☒ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Contains
1:1
Sulfuric Acid
SA-6242080
EXP: 08/29/17
Warning!
See SDSContains
1:1
Nitric Acid
NA-6253070
EXP: 09/09/17
Warning!
See SDS

Notes:

Bear Creek @ Northern way bridge

Date: 03/22/2017
RQ-2017-02-27-6020010049
Field ID ↑
STORET ↓
20010049Signature: K WilliamsDate: 3/22/17Field Parameters Entered into LIMS: Ymw 3/31/17

(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 <u>21FLUEN</u>	LATITUDE <u>28.68095677</u>
COUNTY <u>Seminole</u>	STORET # <u>20010049</u>	LONGITUDE <u>-81.23832922</u>
DATE <u>3/22/17</u>	TIME	SAMPLING AGENCY
SITE NAME <u>Bear Creek</u>		
FIELD ID/NAME 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 <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>75</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</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>2</u> m wide <u>0.13</u> m/s <u>0.14</u> m/s <u>0.12</u> m/s <u>0.2</u> m deep <u>0.4</u> m deep <u>0.2</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>5</u>
High Water Mark: <u>0.5</u> + <u>0.4</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></td><td></td></tr> <tr><td>Undercut Banks / Roots</td><td></td><td></td><td></td></tr> <tr><td>Leaf Packs or Mat</td><td></td><td></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></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)				Undercut Banks / Roots				Leaf Packs or Mat				Aquatic Vegetation				Rock or Shell Rubble..				Sand				Mud / Muck / Silt				Other				Other				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>0.2</u></td><td><u>19.2</u></td><td><u>7.4</u></td><td><u>7.8</u></td><td><u>85</u></td><td><u>284</u></td><td><u>0.1</u></td><td></td></tr> <tr><td>Mid:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>☒ VOB</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> Meter ID: <u>Boop-non</u> TOTAL DEPTH <u>0.4</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>19.2</u>	<u>7.4</u>	<u>7.8</u>	<u>85</u>	<u>284</u>	<u>0.1</u>		Mid:								☒ VOB	Bottom:								
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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: _____ 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 ☐																																																																														
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☒ ☒ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			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

NA, MKL, KMW, City of Orlando (training)

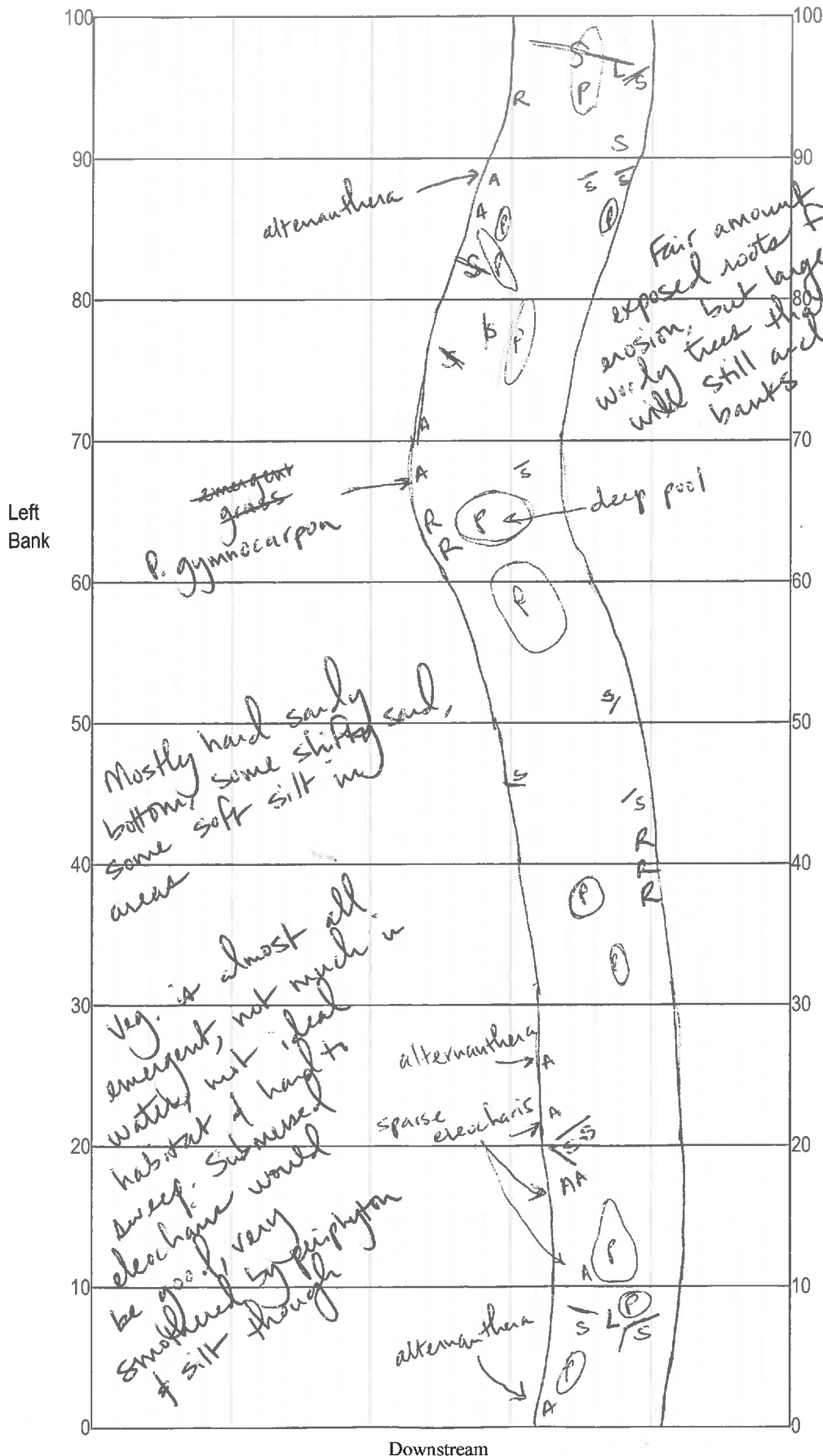
SIGNATURE

Kullmann

DATE

3/22/17

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Bear Creek
 Date: 3/22/17
 Sampler: Katie Williams

100 m: Latitude _____	Longitude _____
0 m: Latitude _____	Longitude _____
Substrates: Code key, draw proportionate habitat abundance. %	
<u>S</u> Snags	_____ %
<u>R</u> Roots/undercut banks	_____ %
<u>L</u> Leaf Packs (or mats)	_____ %
<u>A</u> Aquatic Macrophytes	_____ %
<u>P</u> Pools	total # observed = _____ # range expected = _____
Average width <u>2</u> m	
Average depth <u>0.4</u> m	
Velocity measured at <u>50</u> meter mark.	
WQ & chemistry taken at <u>95</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: Pontederia
Panicum gymnocarpon,
Alternanthera, Mikania,
Liquidambar, Commelina,
Sabal palmetto, Rumex,
Sapinum, Hydrocotyle, Taxodium,
Fraxinus, Boehmeria,
Toxicodendron radicans,
Smilax, oak, Yucca lobata
Ulmus
Wedelia, Saururus, Colocasia

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

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

SAMPLING AGENCY:		STORET STATION NUMBER: <u>20010049</u>	DATE (MM/DD/YY): <u>3/22/17</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, 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 <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>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>12</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>35</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>18</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>7</u> Left Bank <u>7</u>	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. 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 <u>9</u> Left Bank <u>8</u>	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 <u>7</u> Left Bank <u>7</u> ----- Secondary Score <u>64</u>	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

98

TOTAL SCORE

Date: <u>3/22/17</u>	Analyst: <u>KMW, MKL, NA</u>	Signature: <u>Kutler</u>
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DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: <u>Bean Creek</u>	Date: <u>3/22</u>	County: <u>Seminole</u>	Storet Number: <u>20010049</u>
Analyst: <u>Katie Williams</u>	Signature: <u>KWilliams</u>		
Comments: <u>22m², no LVS</u>			

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: Bear Creek County: Seminole Date: 3/22/17 Investigators: Mike Linger

STORET Station Number: 20010049

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	N	N	84	60	1	N	N	84
	2	N	N			2	N	N	
	3	N	N			3	N	N	
	4	N	N			4	N	N	
	5	N	N			5	N	N	
	6	N	N			6	N	N	
	7	N	N			7	3	N	
	8	X 3	N			8	N	N	
	9	3	N			9	N	N	
10	1	N	N	88	70	1	N	N	64
	2	N	N			2	N	N	
	3	N	N			3	N	N	
	4	N	N			4	N	N	
	5	N	N			5	4	N	
	6	N	N			6	N	N	
	7	N	N			7	5	N	
	8	N	N			8	N	N	
	9	N	N			9	N	N	
20	1	N	N	72	80	1	N	N	76
	2	N	N			2	N	N	
	3	N	N			3	N	N	
	4	N	N			4	3	N	
	5	N	N			5	4	N	
	6	N	N			6	N	N	
	7	N	N			7	5	N	
	8	N	N			8	N	N	
	9	N	N			9	N	N	
30	1	N	N	92	90	1	N	N	56
	2	N	N			2	N	N	
	3	N	N			3	N	N	
	4	N	N			4	N	N	
	5	N	N			5	N	N	
	6	N	N			6	3	N	
	7	N	N			7	3	N	
	8	N	N			8	N	N	
	9	N	N			9	N	N	
40	1	N	N	88	100	1	4	N	92
	2	N	N			2	4	N	
	3	N	N			3	3	N	
	4	N	N			4	N	N	
	5	N	N			5	N	N	
	6	N	N			6	4	N	
	7	N	N			7	3	N	
	8	N	N			8	N	N	
	9	N	N			9	N	N	
50	1	N	N	80		1	N	N	
	2	N	N			2	3	N	
	3	N	N			3	N	N	
	4	N	N			4	N	N	
	5	N	N			5	N	N	
	6	N	N			6	5	N	
	7	N	N			7	N	N	
	8	N	N			8	N	N	
	9	N	N			9	N	N	

Secchi depth 0.4 (5)
 Estimated?

points ranked 4-6
 total points assessed
 % points ranked 4-6

Check accompanying data collected at same site/date.
 Algal mat sample
 Linear Veg Survey
 Habitat Assessment ✓
 SCI/Biorecon ✓
 Water sample ✓
 RQ- 2017-02-27-60

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

$4 \times 4 = 16$

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%.