FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

February 2016

PAGE 1 OF 1

Data Qualified? Yes / No

STORET Station Name: _____ RQ-2016-10-31-75

STORET Station ID: _____ 10/31/2016

WBID: _____ RQ - _____ WBID 3258C2

Mullock Creek upstream of US 41

SD103116-1 Field ID

STORET G1SD0005

Date: _____ (mm/dd/yyyy)

_____ (Decimal Degrees)

_____ (Decimal Degrees)

Receiving Body of Water: Estero Bay County: Lee

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Ben Paswater, Kait DeHeth	✓	✓			
Chase Conley				✓	✓
Rosemary Murphy					
Corey Anderson			✓		

Sampling Equipment

- [x] Sample Container
- [ ] Van Dorn
- [ ] Pole
- [ ] Carboy
- [x] Syringe
- [ ] Dipper
- [ ] Other _____

Equipment ID _____

Collection Method

- [x] Wading
- [ ] From Shore
- [ ] Other (note below)

Via Boat
- [ ] Canoe/Kayak
- [ ] Electric Motor
- [ ] Gasoline Motor

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

Matrix: Fresh / Marine / DI

Meter ID# YSI 5

Photos: Yes / No

Tide Falling: Yes / No / NA

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	1310	0.3	0.5	5.7	71	7.4	–	0.5	768	26.0
CEN	eureka			4.6	56	7.3			803	26.0

Biological Samples Collected: None HA SCI LVS RPS LVI Other _____

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	[x] TKN / TP / Nox / NH3 / TOC ___ Other _____	[x] Ice [x] H_2SO_4	0209120	7/17	[x] <2
Metals	[x] W-ICPMS [ ] W-ICP	[ ] Ice [ ] HNO_3			[ ] <2
Filtered Nutrients	[x] oP [x] Field Filtered 0.45 µm Filter	[x] Ice			
Chlorophyll	[x] CHLSUITE-W	[x] Ice			
BOD	BOD-INHB [ ] BOD-UNIN	[ ] Ice			
Physical/Aggregate	[x] TSS / Turbidity / Alkalinity / Color [ ] Other _____	[x] Ice			
Macroinvertebrates	[ ] MI-FW-QLDC	[ ] Formalin			
Microbiology	[ ] E Coli [ ] F Coli [ ] Entero [ ] QPCR	[ ] Ice			
Periphyton	[ ] ALGAE-ID	[ ] Ice			
Pesticides	[ ] W-PSNP-TQ [ ] W-AHERB-AA [ ] W-PYR-AA-R ___ W-PC-AA-SF [ ] W-UHERB-AA [ ] W-GLYPH	[ ] Ice [ ] Other _____			

Place Preservative Sticker(s) Here (If Available)

Notes:

Place Label Here (If Available)

Signature: _____ **Date:** 10-31-16

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 9000-4 Stream/River Habitat Assessment Sketch Sheet

RQ-2016-10-31-75
10/31/2016
WBID 3258C2
Mullock Creek
upstream of US 41

SD103116-1
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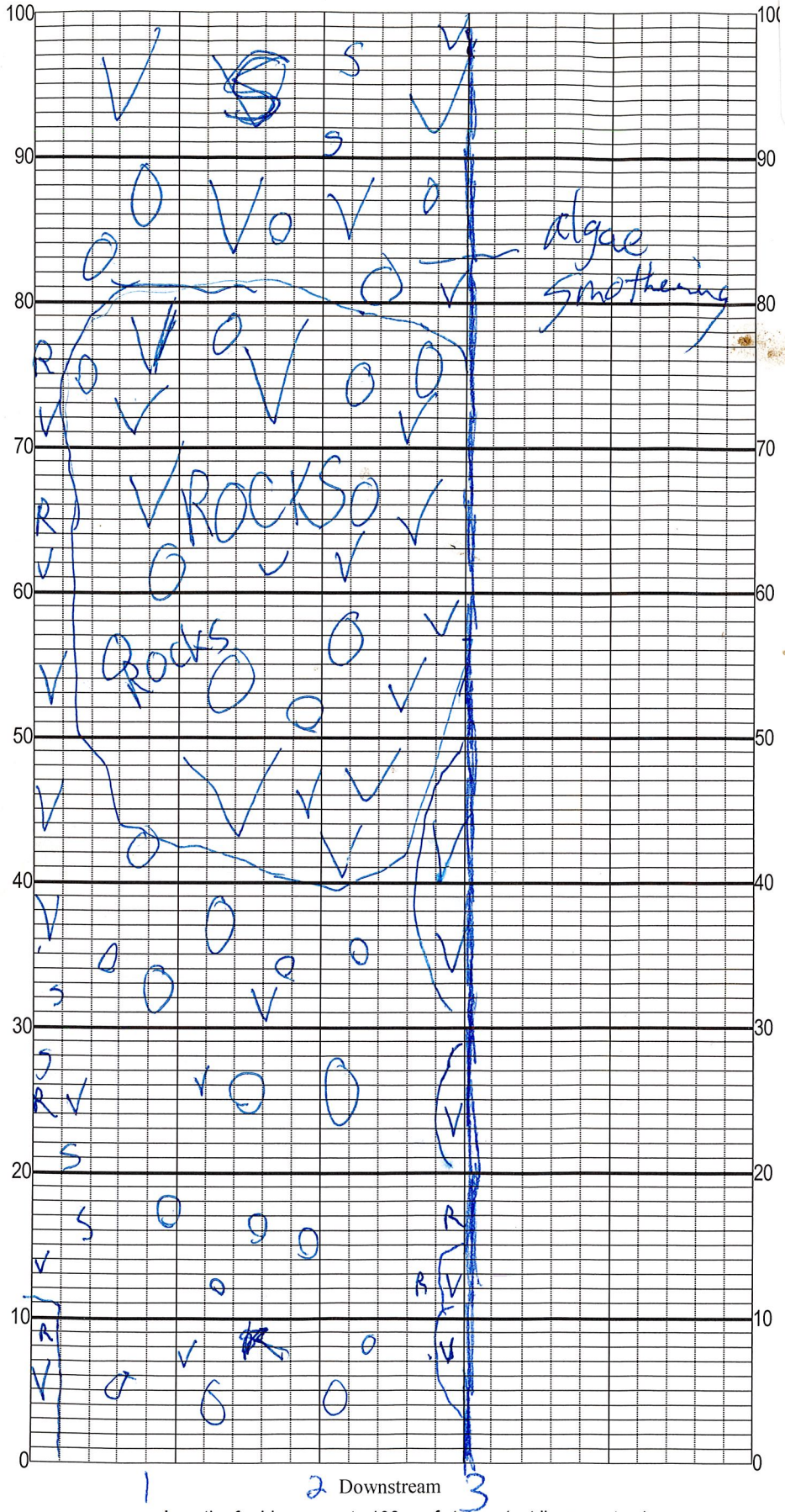
STORET
G1SD0005



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

Sampler: Ben Pasmatov

100 m:	Latitude	26.47364
	Longitude	-81.83284
0 m:	Latitude	26.47443
	Longitude	-81.83386

Substrates: Code key, draw proportionate habitat abundance.

		%
S	Snags	.8
R	Roots/undercut banks	.6
	Leaf Packs (or mats)	
V	Aquatic Macrophytes	15.7
O	Rock	19
Poo	Pools	total # observed = 0
		# range expected = 3-6

Average width 3 m
Average depth .5 m

Velocity measured at 50 meter mark.

WQ & chemistry taken at 50 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: 15.7

V = 226 = [redacted]
R = 10 = .6%
S = 13 = .8%
O = 285 = [redacted]
19%

62-160.800, F.A.C

Revision Date: March 1, 2014

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

RQ-2016-10-31-75
10/31/2016
WBID 3258C2
Mullock Creek upstream of US 41

SD103116-1
Field ID
STORET
G1SD0005

SAMPLE ID see sticker upper right ORG ID 21FLFTM L
STORET # see sticker upper right COUNTY Lee L
DATE see sticker upper right TIME S
SITE NAME
FIELD ID/NAME see sticker upper right RECEIVING BODY OF WATER Estero Bay

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)
5		5		80	10		

Landscape Development Intensity Index (LDI):

Local Watershed Erosion (select one) : ☐ None ☑ Slight ☐ Moderate ☐ Heavy

Local Watershed NPS Pollution : ☐ No evidence ☑ Slight ☐ Moderate ☐ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side
Left Bank : 12 Right Bank : 6

Hydrologic Modification Score (per FT 3101):

High Water Mark: .2 (m) + .5 (above present water level) = .7 (present depth) (above bed)

Artificially Impounded ☑ Yes ☐ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
3 m wide

.27 m/s	.27 m/s	.27 m/s
.4 m deep	.5 m deep	.4 m deep

Artificially Channelized : ☐ NO ☑ Some recovery ☐ Mostly recovered, more sinuous ☐ 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

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☑	☐	☐
Silt Smothering:	☐	☑	☑	☐
Algae Smothering:	☐	☑	☐	☐

SUBSTRATE TYPE
Assessment Tool: ☑ SCI ☑ RPS ☑ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	8	4	
Undercut Banks / Roots	6	4	
Leaf Packs or Mat			
Aquatic Vegetation	15.7	4	
Rock or Shell Rubble..	19.	4	
Sand.....			
Mud / Muck / Silt			
Other		4	
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top :	.2	26.0	7.4	5.7	71	>68	
Mid:							
Bottom							

SECCHI (M): .5 ☑ VOB
TOTAL DEPTH: .5
Meter ID: 5 #5

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) ☐

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 Ben Paswater, Corey Anderson

SIGNATURE : Ben Paswater

DATE : 10/31/16

RQ-2016-10-31-75
10/31/2016
WBID 3258C2
Mullock Creek
upstream of US 41

SD103116-1
Field ID
STORET
G1SD0005

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

STORET STATION NUMBER:	DATE (MM/DD/YY):	SAMPLING AGENCY: FDEP South ROC
FIELD ID/NAME:	COUNTY: Lee	LOCATION:
		RECEIVING BODY OF WATER: Estero Bay

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 18	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 (18) 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 20	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 17	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 5 Primary Score 60	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 **Artificial Channelization** 15	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 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 8 Left Bank 8	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful 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. R L (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 3 Left Bank 6	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m L 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 R (3) 2 1
Riparian Zone Vegetation Quality Right Bank 3 Left Bank 3 Secondary Score 46	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). L R (3) 2 1

TOTAL SCORE

~~106~~

Date: 10/31/16	Analyst: Ben Paswater	Signature: Ben Paswater

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

RQ-2016-10-31-75
10/31/2016
WBID 3258C2
Mullock Creek
upstream of US 41

SD103116-1
Field ID
STORET
G1SD0005

Waterbody:	Date:	County:
Analyst: Corey Anderson	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 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica		✓									
Centella asiatica											
Ceratophyllum demersum											
Chara					✓		✓	✓	✓	✓	
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Eleocharis (wispy viviparous)	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Hydrilla verticillata	✓				✓			✓	✓	✓	
Hydrocotle sp.			✓					✓			
Hygrophila polysperma											
Hymenachne amplexicaulis											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna	✓	✓	✓	✓	✓				✓	✓	
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens					✓						
Luziola fluitans											
eleocharis equisitoides									✓		
If no Dominant or Co-Dominant were selected, indicate with "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage											
>5 and ≤10% Macrophyte Coverage			✓	✓	✓	✓	✓				
>10 and ≤25% Macrophyte Coverage	✓	✓						✓	✓	✓	
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum		✓	✓		✓			✓	✓	✓	
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum		✓	✓								
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Sphagneticola trilobata (Wedelia)					✓	✓	✓	✓	✓	✓	
Typha											
Urochloa mutica (Brachiaria)											
Vallisneria americana											
Zizania aquatica											
Mikania scandens	✓	✓		✓	✓	✓	✓	✓	✓		
Schinus terebinthifolius	✓	✓		✓	✓	✓		✓			
Vigna luteola					✓						
Anona glabra					✓		✓				
Phragmites australis						✓	✓				
Hymenachne amplexicaulis						✓	✓	✓			

RQ-2016-10-31-75
10/31/2016
WBID 3258C2
Mullock Creek
upstream of US 41

SD103116-1
Field ID
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DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

County: Lee

Investigators CA, BP, RM, VR, CC

STORET Station Number:

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1			
	2			
	3			
	4			
	5	N	N	52
	6			
	7			
	8			
	9			
10	1			
	2			
	3			
	4			
	5	N	N	74
	6			
	7			
	8			
	9			
20	1			
	2			
	3			
	4			
	5	N	N	89
	6			
	7			
	8			
	9			
30	1			
	2			
	3			
	4			
	5	N	N	91
	6			
	7			
	8			
	9			
40	1			
	2			
	3			
	4			
	5	N	N	72
	6			
	7			
	8			
	9			
50	1			
	2			
	3			
	4			
	5	N	N	78
	6			
	7			
	8			
	9			

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1			
	2			
	3			
	4			
	5	N	N	82
	6			
	7			
	8			
	9			
70	1			
	2			
	3			
	4			
	5	N	N	49
	6	4		
	7			
	8			
	9			
80	1	N		
	2	N		
	3	6		
	4	N		
	5	N	N	CANT 8
	6	6		
	7	6		
	8	N		
	9	N		
90	1			
	2			
	3			
	4			
	5	N	N	0
	6			
	7			
	8			
	9			
100	1			
	2			
	3			
	4			
	5	N	N	0
	6			
	7			
	8			
	9			

Secchi depth	.5
Estimated?	NO

# points ranked 4-6	4
total points assessed	90
% points ranked 4-6	4

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

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%.