FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

STRATEGIC MONITORING PLAN Field Sheet

July 2022

Meter Passed End of Day CCV

Yes / No

WIN Station Name:	Istokpoga Canal					**Sample Date:**	12/21/2022
WIN / Field ID:	G4SD0181	**ORG ID:**	21FLFTM	**ENR:**	-	**Latitude:**	27.41146
County:	Highlands	**WBID:**	1856A	STREAM	3F	**Longitude:**	-81.14298
Receiving Body of Water:	Lower Kissimmee					**RQ-**	2022-10-03-62

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Nicole Reistad		x		x	x
Monica Jaeger	x		x		

Sampling Equipment					
x	Sample Container			Carboy	
	Dipper			Van Dorn	
	Syringe			Pole	
Syringe Lot#			Filter Lot#		
Secchi Equipment ID:	3312A				

Collection Method			
	Wading	x	Canoe/Kayak
	From Shore		Electric Motor
			Gasoline Motor
Depth Measured With	Secchi		

Water Level:	*Normal*
Flow:	*Flowing*
Matrix:	*Fresh*
Tide Stage:	
High Tide:	
Low Tide:	
Photos:	*Yes*
Meter ID:	*President Camacho*
Depth Gauge ID:	**depth_gauge**

Time Zone	Time	Total Depth (m)	Sample Depth (m)	DO (mg/L)	DO (%SAT)	Temp. (ºC)	pH	Secchi Disk (m)	Sp COND (µmhos/cm)	Salinity (PPTh)
EST	1245	2.2	0.3	5.07	54.7	19.1	6.89	0.7	139.4	0.07
	1248		1.7	3.88	40.9	18.6	6.64		151.2	0.07

Biological Samples Collected: HA RPS LVS

SBIO Visit ID: **HA ID:** **RPS ID:** **Macrophyte ID:** **LIMS Sample ID Entered Into The Macrophyte Module:**

Parameter Suite	Parameter Methods (LIMS Test Codes)	Preservation Type	Preservation	Lot#	Expiration Date	pH Check
Microbiology	E. coli / Contract Lab / *Benchmark*	ICE				
Chlorophyll	CHLSUITE-W	ICE				
Physical/Aggregate	ALKALINITY, TURBIDITY, W-F, W-TSS	ICE				
Nutrients	W-CL-IC, W-COLOR, W-SO4-IC, W-TDS	ICE				
Filtered Nutrients	W-PO4-F; Field Filtered 0.45 µm Filter	ICE		Syring Lot#:; Filter Lot#:		
Acid Preserved Nutrients	W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	ICE	H2SO4*	*SA2229010*	*8/30/23*	*H2SO4 pH<2*
Metals						
Organics (LC)						
Macroinvertebrates						
Organics (GC)						
Molecular						
Periphyton						
Phytoplankton						
BOD						
DOC				SyringLot#		FilterLot#
Other(s)						

*2.0 ml of H2SO4 Used Unless Noted Otherwise

Field Comments:	
Comments on COC:	Microbiology sample(s) submitted to contract laboratory.
Relinquish Date:	12/21/2022
Signature:	

LIMS EVENT ID: _____ **WIN Import ID:** _____

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ (Initials/Date)

QC Station ID, Field Parameters In LIMS DMT: _____ (Initials/Date)

Save Field Sheets on Network: _____ (Initials/Date)

Migrate Data to WIN: _____ (Initials/Date)

Visit ID 85903

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

SAMPLE ID: Istokpoga Canal | ORG ID: 21FLFTM | LATITUDE: 27.41154
COUNTY: Highlands | STORET #: G4SD018I | LONGITUDE: -81.14284
DATE: 12/21/22 | TIME: | SAMPLING AGENCY: FDEP-SOROC
SITE NAME:
FIELD ID/NAME: | RECEIVING BODY OF WATER: Istokpoga

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)
35	—	20	45	—	—	—	—

Landscape Development Intensity Index (LDI):

Local Watershed Erosion (select one): [X] None [ ] Slight [ ] Moderate [ ] Heavy

Local Watershed NPS Pollution: [X] No evidence [ ] Slight [ ] Moderate [ ] Heavy

Width of Riparian Vegetation (m) on Each Buffer Side — Left Bank: 18 | Right Bank: 18

Hydrologic Modification Score (per FT 3101): 1-2

High Water Mark: 0.8 (m) + 2.2 (above present water level) = 3.0 (present depth) (above bed)

Artificially Impounded: [ ] Yes [X] No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect: 25 m wide

m/s	0.09 m/s	m/s
m deep	2.2 m deep	m deep

Artificially Channelized: [ ] No [X] Some recovery [ ] Mostly recovered, more sinuous [ ] Recent, severe

Canopy Cover %: [X] Open [ ] Lightly Shaded (11-45%) [ ] Heavily Shaded [ ] Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils: [X] Absent [ ] Slight [ ] Moderate [ ] Profuse

Sediment Odors: [X] Normal [ ] Sewage [ ] Petroleum [ ] Chemical [ ] Anaerobic [ ] Other (Specify):

Smothering of Substrates

	None	Slight	Moderate	Severe
Sand Smothering:	[X]	[ ]	[ ]	[ ]
Silt Smothering:	[X]	[ ]	[ ]	[ ]
Algae Smothering:	[X]	[ ]	[ ]	[ ]

SUBSTRATE TYPE

Assessment Tool: [ ] SCI [X] RPS [X] LVS [ ] LCI [ ] BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	—		
Undercut Banks / Roots	—		
Leaf Packs or Mat	—		
Aquatic Vegetation	21.40		
Rock or Shell Rubble..	—		
Sand.....	—		
Mud / Muck / Silt	80		
Other	—		
Other	—		

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top:	0.3	19.1	6.89	5.07	54.7	139.4	0.07	0.7
Mid:								[ ] VOB
Bottom	1.7	18.6	6.64	3.88	40.9	151.2	0.07	TOTAL DEPTH 2.2

Meter ID: President Camacho

Water Odors Normal [X] Petroleum [ ] Sewage [ ] Chemical [ ] Other [ ]

Water Surface Oils Normal [X] Sheen [ ] Globs [ ] Slick [ ] Other [ ]

Water Sample Taken? [X] Yes [ ] No
Sample Preserved? [ ] Yes [ ] No
Lot Number: Exp:

Color Tannic [X] Green (Algae) [ ] Clear [ ] Other (Specify) [ ]

Algae Sample Taken? [ ] Yes [X] No
Sample Preserved? [ ] Yes [ ] No
Lot Number: Exp:

Clarity Clear [X] Slightly Turbid [ ] Turbid [ ] Opaque [ ]

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	[X]	[ ]	[ ]	[ ]
Fish:	[ ]	[ ]	[X]	[ ]
Aquatic Plants:	[ ]	[ ]	[X]	[ ]
Iron/Sulfur Bacteria:	[X]	[ ]	[ ]	[ ]

System Type: Stream [X] Lake [ ] Wetland [ ] Estuary [ ] Other(Specify) [ ]

AMBIENT FIELD CONDITIONS / NOTES:

[X] The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM: Monica Caeger, Nicole Reistad

SIGNATURE:

DATE: 12/22/22

62-160.800, F.A.C.

Revision Date: January 2017

HA ID: 180604

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

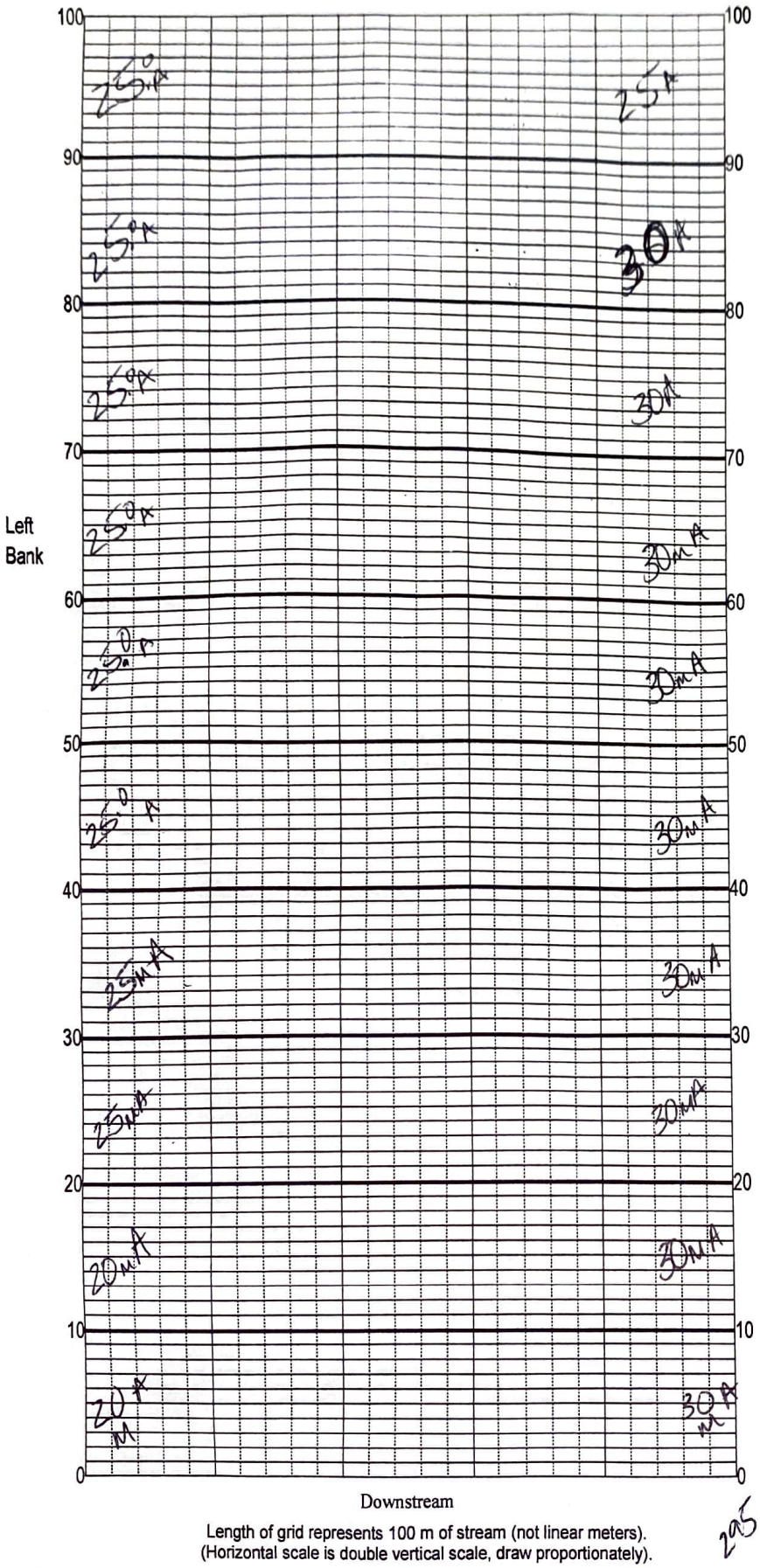
SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FDEP – SOROC			12/21/22	
REMARKS:	COUNTY: Highlands	LOCATION: Istokpoga Canal		FIELD ID/NAME: G45D0181

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 5	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 14	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 9	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 ~~33~~ 33	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** 5	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 bankful 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 R&L (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 9 Left Bank 9 Secondary Score 103	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) R&L	>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

~~96~~ 96 **TOTAL SCORE**

Date: 12/21/22	Analyst: Monica Jaeger/Nicole Reistad	Signature:

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: _____

Date: 12/21/22

Sampler: Monica Jaeger/Nicole Reistad

100 m: Latitude	
Longitude	
0 m: Latitude	27.41154
Longitude	-81.14284

Substrates: Code key, draw proportionate habitat abundance. %

S	Snags	—
R	Roots/undercut banks	—
L	Leaf Packs (or mats)	—
A	Aquatic Macrophytes	21.40 ~~26.75~~
R	ROCKS	—
	Pools	total # observed = ____
		# range expected = ____

Average width 25 m

Average depth 2-2 m

Velocity measured at 0 meter mark.

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:

11 g/M $\frac{1}{11}$ = 0.09

535m A

205

62-160.800, F.A.C

Revision Date: January 2017

MAC ID: 12340

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

Waterbody: Istokpoga Canal | Date: 12/21/22 | County: HIGHLANDS | Storet Number: GASD0181

Analyst: NICOLE REISTAD | Signature:

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m^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 monnieri											
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											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
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	X	X	X	X	X	X	X	X	X	X	
>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											
Typha											
Vallisneria americana											
Zizania aquatica											
Salix caroliniana	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Paspalum geminatum	D	D	D	D	D	D	D	D	D	D	
Schinus terebinthifolius	✓	✓	✓	✓						✓	
Acer rubrum	✓	✓	✓					✓			
Pontederia lancifolia			✓								
Schinoplectus californicus							✓	✓	✓	✓	
Annona glabra						✓	✓	✓	✓	✓	

RPI ID: 10009

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: ISTOKPOGA CANAL | County: HIGHLANDS | Date: 12/21/22 | Investigators: NICOLE REISTAD, MONI

STORET Station Number: GASD0181

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

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

Secchi depth	
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	X
Habitat Assessment	X
SCI/Biorecon	
Water sample	X

RQ-2022-10-03-62

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%.