



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PLAN FIELD SHEET

January 2020

Meter Passed End
of Day CCV
☒ Yes ☐ No

WIN Station Name: Unnamed Ditches N of Coco Palm Dr. **Date:** 10/25/2021
WIN/Field ID: G5CE0154 **WBID:** 2939 **ENR:** - **Latitude:** 28.9727
County: VOLUSIA **Org ID:** 21FLCEN **Longitude:** -80.9
Receiving Body of Water: Indian River Lagoon **RQ:** 2021-10-25-21

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒ Terry Riordan		x		x	x	x
☒ Victoria Schwartz		x	x			
☐						
☐						

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☒ Syringe	☐ Pole
Depth measured with: Secchi	
Secchi Equipment ID: Light	
Collection Method	
☒ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other _____	☐ Gasoline Motor

Water Level: ☒ Normal ☐ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded						Meter ID# SHRIMP TRAP					
Photos: YES		Flow: FLOW		Tide:		Tide Times: High: Low:					
Biological Samples Collected: ☐ None ☒ HA ☐ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:											
SBIO ID Numbers: SBIO 83510 VASCULAR 12018 RPS 9810						LIMS 2285913					
Notes: 80S WITH RAIN ON AND OFF. SITE NOT APPROPRIATE FOR SCI.											

Duplicate Sample

Time Zone: EST	Time: _____	Field ID: _____ (WIN ID_DUP)
WIN DMT Activity ID: _____		

Blank

Time Zone: _____	Time: _____	Field ID: _____ (Blank Type_DDDMMYY)
DI Source: _____	Location: _____	
DI Type: _____	Equipment ID: _____	
DI Container (Name/ID): _____		DI Container Type: _____

LIMS EVENT ID: CEN-DIST-2021-10-26-01 WIN Import ID: 30309
Enter Field Parameters, Verify Station ID In LIMS DMT: KWM 11/5/21 QC Station ID, Field Parameters In LIMS DMT: EB 11/23/21
(Initials/Date) (Initials/Date)
Scan/Save Field Sheets KWM 12/29/21 Migrate Data to WIN: KWM 12/29/21 Verify Data In WIN: _____
(Initials/Date) (Initials/Date) (Initials/Date)



RQ-2021-10-25-21
Customer: WQAP
Project ID: SMP

Collected By: Terry Riordan, Victoria Schwartz
Field Report Prepared By: Terry Riordan
Sampling Agency: FDEP

Place Label Here						Comments:					
WIN ID/Field ID:  G5CE0154											
Location: Unnamed Ditches N of Coco Palm Dr.											
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)	
	1300 EST	3.48	38.3	25.8	7.25	0.3	0.8 ☒ VOB (S)	0.8	710	0.34	
10/25/2021											
	EST										
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 #	SA1105060		Exp:	04/30/22					
Metals (P-500ML)		☒ W-ICPMS ☒ W-ICP ☒ W-HARD				☒ Ice ☒ HNO3*		☒ <2	1	A	
		Lot #	NA1105100		Exp:	6/7/22					
Filtered Nutrients (P125ML)		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter				☒ Ice			1	A	
		Filter Lot #	17135566								
		Syringe Lot #	1112035								
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 Lot #		☐ Formalin					
Periphyton (PT-50ML)		☐ ALGAE-ID				☐ Ice					
Microbiology (Contract Lab Bottle)		☒ E Coli ☐ F Coli ☐ Enterococci ☐ Contract Lab				☒ Ice			1	A	
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	5	A		
Phytoplankton/Periphyton		☐ W-PCL-TQ-R	☐ W-CARB-AA (5 ml of MCAA** Buffer Solution)	☐ DTY-QN-C			☐ Ice				
				☐ PKD-QN-BV							
Name: Terry Riordan Victoria Schwartz					Signature: <i>Victoria Schwartz</i>					Date: 10/25/21	

*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 _____ LATITUDE 28.9727
 COUNTY Vermont STORET # G5CE0154 LONGITUDE -80.9
 DATE 10/25/21 TIME 13:00 SAMPLING AGENCY 21FLCEN
 SITE NAME Unnamed Ditches N of Coco Palm Dr.
 FIELD ID/NAME G5CE0154 RECEIVING BODY OF WATER Indian River Lagoon

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) ☐ <u>80</u> <u>20</u>							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 <u>~5 sec.</u> <u>5</u> m wide			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>4</u> Right Bank: <u>4</u>			Hydrologic Modification Score (per FT 3101) ☐		☐ m/s <u>0.2</u> m/s ☐ m/s			
High Water Mark: <u>0.5</u> + <u>0.8</u> = <u>1.3</u> (m) (above present water level) (present depth) (above bed)			Artificially Impounded ☐ Yes ☒ No		☐ m deep <u>0.8</u> m deep ☐ m deep			
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 → Sand

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 ☐	
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SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon % Coverage ☐ # Times Sampled ☐ PERI ☐ # Times Sampled				WATER QUALITY							
				Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top:				<u>0.3</u>	<u>25.8</u>	<u>7.25</u>	<u>3.48</u>	<u>38.3</u>	<u>710</u>	<u>0.34</u>	<u>0.8</u>
Mid:											☒ VOB
Bottom:											TOTAL DEPTH
											<u>0.8</u>
Woody Debris (Snags) ☐ Undercut Banks / Roots ☐ Leaf Packs or Mat ☐ Aquatic Vegetation ☐ Rock or Shell Rubble.. ☐ Sand..... ☐ Mud / Muck / Silt ☐ Other ☐ Other ☐				Meter ID: <u>Shrimp Trap</u>				Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			
				Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SALLOSOLVO</u> Exp: <u>4/30/22</u>				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 ☐			

ABUNDANCE Not Obs. Rare Common Abundant				System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☒ Other (Specify) ☐ <u>Canal</u>			
Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐				AMBIENT FIELD CONDITIONS / NOTES: Site not appropriate for SCI Local resident said canal is routinely cleared of vegetation using large machinery ☒ The antecedent hydrologic conditions have been met to my best knowledge. Apple snails present (native and invasive exotic)			
SAMPLING TEAM <u>Terry Riordan + Victoria Schwartz</u>				SIGNATURE: <u>[Signature]</u>		DATE: <u>10/25/21</u>	

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

WB18: 2939

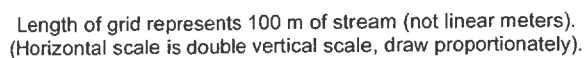
SAMPLING AGENCY: <u>21FLCEN</u>		STORED STATION NUMBER: <u>G5CE0154</u>	DATE (MM/DD/YY): <u>10/25/21</u>	RECEIVING BODY OF WATER: <u>Indian River Lagoon</u>
REMARKS: <u>Not SC Appropriate</u>	COUNTY: <u>Volusia</u>	LOCATION: <u>WIN</u>	FIELD ID/NAME: <u>Unnamed Ditches N of Coco Palm Dr.</u>	

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>3</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	<u>5</u> 4 3 2 1
Substrate Availability <u>NS</u> <u>19</u> <u>16</u>	Greater than 30% major productive habitat present at site 20 19 18 17 <u>16</u>	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 <u>5 sec</u> 0.25 0.21 0.17 0.13 >0.1 15 <u>14</u> 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>5</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. <u>5</u> 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>1</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 <u>1</u>
Bank Stability Right Bank <u>4</u> Left Bank <u>3</u>	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. 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 <u>2</u> Left Bank <u>2</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 <u>2</u> 1
Riparian Zone Vegetation Quality Right Bank <u>2</u> Left Bank <u>2</u> ----- Secondary Score <u>16</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

54

TOTAL SCORE

Date: <u>10/25/21</u>	Analyst: <u>Terry Riordan/Victoria Schurz</u>	Signature: <u>[Signature]</u>
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Plants observed / other notes:

- Sandy bottom $\rightarrow$ silt smothering
- Canal!
- Steep slopes L & R
covered in veg.
(^{lud.} Penniana) etc...
- Hydrilla w/ ⁱⁿ silt and algae
smothering along center
(very dense)

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

WBID: 2939

Waterbody: Unnamed Ditches Date: 10/25/21 County: Volusia ^{WHD} Storet Number: 65CE0154

Analyst: Victoria Schwartz/Terry Pordan Signature: V. Schwartz / T. Pordan

Comments: Macrophyte coverage of canal almost 100% & frequently mechanically removed

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² or 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										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
<i>Alternanthera philoxeroides</i>	/	/	/	/	/	/	/	/	/	/		<i>Micranthemum glomeratum</i>											
<i>Bacopa caroliniana</i>												<i>Micranthemum umbrosum</i>											
<i>Bacopa monnieri</i>												<i>Myriophyllum aquaticum</i>	/	/	/	/	/	/	/	/	/		
<i>Bidens mitis</i>												<i>Najas guadelupensis</i>				/							
<i>Boehmeria cylindrica</i>												<i>Nuphar luteum</i>											
<i>Centella asiatica</i>												<i>Orontium aquaticum</i>											
<i>Ceratophyllum demersum</i>												<i>Panicum hemitomon</i>											
<i>Chara</i>												<i>Panicum repens</i>			/		/	/					
<i>Cicuta maculata</i>												<i>Panicum rigidulum</i>											
<i>Cladium jamaicense</i>												<i>Pistia stratioides</i>											
<i>Colocasia esculenta</i>												<i>Polygonum glabra</i>											
<i>Commelina diffusa</i>			/	/	/							<i>Polygonum hydropiperoides</i>											
<i>Commelina virginica</i>												<i>Polygonum punctatum</i>											
<i>Crinum americanum</i>												<i>Pontedaria cordata</i>											
<i>Diodia virginiana</i>												<i>Potamogeton illinoensis</i>											
<i>Eichhornia crassipes</i>			/	/	/	/				/		<i>Ruellia simplex</i>											
<i>Eleocharis (wispy viviparous)</i>	/	/	/	/	/	/	/	/	/	/		<i>Sacciolepis striata</i>											
<i>Hydrilla verticillata</i>	/	/	/	/	/	/	/	/	/	/		<i>Sagittaria kurziana</i>											
<i>Hydrocotyle</i>					/	/	/	/	/	/		<i>Sagittaria lancifolia</i>											
<i>Hygrophila polysperma</i>												<i>Sagittaria latifolia</i>											
<i>Hymenocallis</i>												<i>Salvinia minima</i>											
<i>Lachnanthes caroliniana</i>												<i>Samolus parviflora</i>											
<i>Landoltia punctata</i>												<i>Saururus cernuus</i>											
<i>Lemna</i>	/	/	/	/	/	/	/	/	/	/		<i>Sparganium americanum</i>											
<i>Limnophila sessiflora</i>												<i>Typha</i>											
<i>Ludwigia leptocarpa</i>								/				<i>Vallisneria americana</i>											
<i>Ludwigia palustris</i>												<i>Zizania aquatica</i>											
<i>Ludwigia peruviana</i>	/	/	/	/	/	/	/	/	/	/		<i>Ludwigia octovalvis</i>	/	/	/	/	/	/	/	/	/		
<i>Ludwigia repens</i>					/	/	/	/	/	/		<i>Azolla filiculoides</i>	/	/	/	/	/	/	/	/	/		
<i>Luziola fluitans</i>												<i>Cyperus odoratus</i>	/	/	/	/	/	/	/	/	/		
<i>Para grass</i> → <i>Utricularia</i>							/					<i>Echinochloa crusgalli</i>	/	/	/		/					/	
<i>mutica</i>																							
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	/	/	/	/	/	/	/	/	/	/													

WBA: 2939

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Unnamed Ditch N of
Coco Palm Dr.County:
VolusiaDate:
10/25/21Investigators:
Victoria SchwartzSTORE Station Number:
65CE0154

Transect t (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect t (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N			60	1	N	✓	
	2	N				2	3		
	3	N				3	N		
	4	N				4	N		
	5	N		* 6		5	N		6
	6	4				6	N		
	7	4				7	N		
	8	4				8	N		
	9	N				9	N	✓	
10	1	N			70	1	N	✓	
	2	N				2	N	✓	
	3	N				3	N	✓	
	4	N				4	N	✓	
	5	N		* 18		5	N		7
	6	N				6	N		
	7	3				7	N		
	8	N				8	N		
	9	N				9	N		
20	1	N			80	1	N	✓	
	2	N				2	N	✓	
	3	N				3	N		
	4	4				4	N		
	5	N		32		5	3		10
	6	N				6	3		
	7	N				7	N		
	8	N	✓			8	N		
	9	N	✓			9	N		
30	1	N	✓		90	1	N	✓	
	2	N	✓			2	N	✓	
	3	N	✓			3	N		
	4	N	✓			4	3		
	5	3		54		5	3		12
	6	4				6	N	✓	
	7	N				7	N	✓	
	8	N				8	N	✓	
	9	N				9	N	✓	
40	1	N			100	1	N	✓	
	2	N				2	N	✓	
	3	3				3	N	✓	
	4	N				4	N		
	5	N		48		5	3		6
	6	N	✓			6	3		
	7	N	✓			7	N		
	8	3				8	N	✓	
	9	3				9	N	✓	
50	1	N			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%.	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		vs 3/5		5	3		
	6	N				6	3		
	7	N	✓			7	N		
	8	N	✓			8	N	✓	
	9	N	✓			9	N	✓	

Secchi depth 0.8 (vob)
Estimated?# points ranked 4-6 5
total points assessed 99
% points ranked 4-6 5%Check accompanying data
collected at same site/date.Algal mat sample
Linear Veg Survey ✓
Habitat Assessment ✓
SCI/Biorecon
Water sample ✓

RQ- 2021-10-25-21

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

* = not tree canopy →
coverage from
veg. on steep L slope

- ✓ Estimated if veg cover too dense to access / properly see reach
- Algal smothering dense hydrilla and most algae dying along