

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

STRATEGIC MONITORING PLAN Field Sheet

July 2022

Meter
Passed End
of Day CCV☒ Yes / ☐ No

WIN Station Name:	Rattlesnake Slough @ Lockwood ridge Rd				Sample Date:	11/29/2022	
WIN / Field ID:	G2SW0043	ORG ID:	21FLTPA	ENR:			
County:	Manatee	WBID:	1923	STREAM	1	Latitude:	27.41886
Receiving Body of Water:	Braden River Above Ward Lake				Longitude:	-82.50542	
					RQ-	2022-11-07-62	

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Ben Paswater		x		x	x
Sarah Meyer	x		x		

Sampling Equipment			
x	Sample Container	Carboy	
	Dipper	Van Dorn	
	Syringe	Pole	
Syringe Lot# 1145497		Filter Lot# 17232873	
Secchi Equipment ID:		Secchi #3	
Collection Method			
x	Wading	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:	Leia
Depth Gauge ID:	depth_gauge

Time Zone	Time	Total Depth (m)	Sample Depth (m)	DO (mg/L)	DO (%SAT)	Temp. (°C)	pH	Secchi Disk (m)	Sp COND (µmhos/cm)	Salinity (PPTth)
EST	1300	0.4	0.2	2.75	31.1	21.4	6.85	0.4	445.3	0.21
								VOB (s)		

Biological Samples Collected:

HA LVS RPS

SBIO Visit ID: 85890	HA ID: 18060	RPS ID: 10006	Macrophyte ID: 12338	LIMS Sample ID Entered Into The Macrophyte Module: 2371802
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Parameter Suite	Parameter Methods (LIMS Test Codes)	Preservation						
		Type	Lot#	Expiration Date	pH Check			
Microbiology								
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	Syringe Lot#:1145497; Filter Lot#:17232873				
Acid Preserved Nutrients	W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	ICE	H2SO4*	SA2229010	08/30/2023	H2SO4 pH<2		
Metals	W-ICPMS	W-ICP	W-HARD	ICE	HNO3**	NA1105100	06/07/2023	HNO3 pH<2
Organics (LC)	W-E8321-DIW-E8321-DI	W-E8321-MSW-E8321-MS		Ice				
Macroinvertebrates								
Organics (GC)	W-PSNP-TQ	W-TR-SQ-R		Ice	*2.0 ml of H2SO4 Used Unless Noted Otherwise **2.0 ml of HNO3 Used Unless Noted Otherwise			
Molecular								
Periphyton								
Phytoplankton								
BOD								
DOC								
Other(s)					SyringeLot#		FilterLot#	
Field Comments:								
Comments on COC:								
Relinquish Date:	11/29/2022	Signature:						

LIMS EVENT ID: SW-DIST-2022-11-30-01

WIN Import ID: 37980

Enter Field Parameters, Verify Station ID In LIMS DMT: DM 12/20/2022

QC Station ID, Field Parameters In LIMS DMT: MM 1/5/2023

Save Field Sheets on Network: MM 2/10/2023

Migrate Data to WIN: MM 2/10/2023

(Initials/Date)

(Initials/Date)

Site Name:

Rattlesnake Slough @ Lockwood ridge Rd

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

STORET STATION NUMBER: <u> </u>		DATE (MM/DD/YYYY): <u>11/29/2022</u>	SAMPLING AGENCY: FDEP SWROC
FIELD ID/NAME: <u> </u>	COUNTY: <u>Manatee</u>	LOCATION: <u> </u>	RECEIVING BODY OF WATER: <u>Bradén River</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>6</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 <u>6</u>	5 4 3 2 1
Substrate Availability <u>20</u>	Greater than 30% major productive habitat present at site <u>20</u> 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>2</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 <u>2</u> 1
Habitat Smothering <u>3</u> Primary Score <u>31</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 <u>3</u> 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>6</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 <u>6</u>	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. <u>LR</u> 8 <u>7</u> 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>3</u> Left Bank <u>3</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 <u>LR</u> <u>3</u> 2 1
Riparian Zone Vegetation Quality Right Bank <u>6</u> Left Bank <u>6</u> Secondary Score <u>38</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. <u>LR</u> 8 7 <u>6</u>	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

69 **TOTAL SCORE**

Date: <u>11/29/2022</u>	Analyst: <u>Ben Paswater & Sarah Meyer</u>	Signature: <u>Sarah Meyer</u>
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DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID see sticker ^A ORG ID 21FLTPA LATITUDE _____
 STORET # see sticker COUNTY Manatee LONGITUDE _____
 SITE NAME see sticker TIME _____ SAMPLING AGENCY FDEP SW ROC
 RECEIVING BODY OF WATER _____

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) ☐							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 3.0 m wide 0.01 m/s 0.01 m/s 0.01 m/s 0.2 m deep 0.4 m deep 0.3 m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank : <u>6</u> Right Bank : <u>5</u>				Hydrologic Modification Score (per FT 3101) <u>5</u>			
High Water Mark: <u>0.4</u> + <u>0.1</u> = <u>0.5</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		WATER QUALITY <table border="1"> <thead> <tr> <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></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mid:</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>TOTAL DEPTH</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 :								Mid:							☐ VOB	Bottom							TOTAL DEPTH
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Top :																																					
Mid:							☐ VOB																														
Bottom							TOTAL DEPTH																														
Woody Debris (Snags) ☐ ☐ ☐ Undercut Banks / Roots ☐ ☐ ☐ Leaf Packs or Mat <u>4.6</u> ☐ ☐ Aquatic Vegetation <u>46</u> ☐ ☐ Rock or Shell Rubble.. ☐ ☐ ☐ Sand..... ☐ ☐ ☐ Mud / Muck / Silt ☐ ☐ ☐ Other ☐ ☐ ☐ Other ☐ ☐ ☐		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: <u>see Water Datasheet</u>		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 <table border="1"> <thead> <tr> <th></th> <th>Not Obs.</th> <th>Rare</th> <th>Common</th> <th>Abundant</th> </tr> </thead> <tbody> <tr> <td>Periphyton:</td> <td>☐</td> <td>☒</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Fish:</td> <td>☐</td> <td>☐</td> <td>☒</td> <td>☐</td> </tr> <tr> <td>Aquatic Plants:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒</td> </tr> <tr> <td>Iron/Sulfur Bacteria:</td> <td>☒</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>			Not Obs.	Rare	Common	Abundant	Periphyton:	☐	☒	☐	☐	Fish:	☐	☐	☒	☐	Aquatic Plants:	☐	☐	☐	☒	Iron/Sulfur Bacteria:	☒	☐	☐	☐	System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐ _____										
	Not Obs.	Rare	Common	Abundant																																	
Periphyton:	☐	☒	☐	☐																																	
Fish:	☐	☐	☒	☐																																	
Aquatic Plants:	☐	☐	☐	☒																																	
Iron/Sulfur Bacteria:	☒	☐	☐	☐																																	
AMBIENT FIELD CONDITIONS / NOTES: ☐ The antecedent hydrologic conditions have been met to my best knowledge.																																					
SAMPLING TEAM <u>Ben Paswater</u> <u>Sarah Meyer</u>			SIGNATURE : <u>Sarah Meyer</u>		DATE : <u>12/15/2022</u>																																

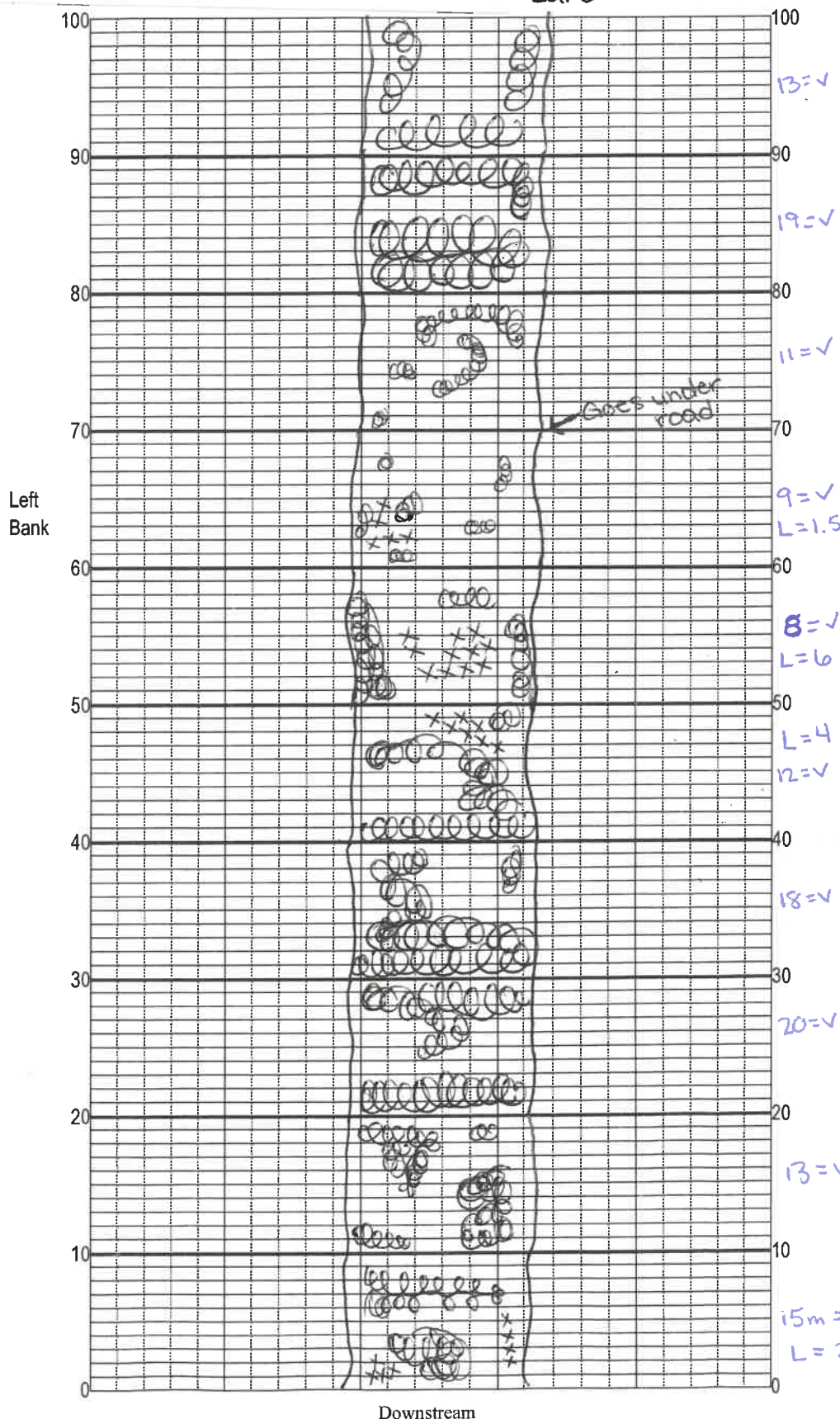
Site Name:

Rattlesnake Slough @ Lockwood ridge Rd

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

Lockwood

Lake

Location: Rattlesnake Slough @ Ridge RdDate: 11/29/2022Sampler: B Paswater & S Meyer100 m: Latitude _____
Longitude _____0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

☐ Snags _____☐ Roots/undercut banks _____☒ Leaf Packs (or mats) 14 4.6☒ Aquatic Macrophytes 138 46☐ ROCKS _____☐ _____☐ Pools total # observed = _____
range expected = _____Average width 3 mAverage depth 0.4 mVelocity measured at 0.50, 100 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:

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

Site Name:

Rattlesnake Slough @ Lockwood ridge Rd

Rapid Periphyton Survey Field Sheet

Date:

11/29/2022

Investigators:

BP, SM

STORET Station Number:

1st ed on sticker

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		45	60	1	N		82
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
10	1			76	70	1			88
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
20	1			52	80	1			14
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
30	1			57	90	1	3		77
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
40	1			42	100	1	3		54
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
50	1			90		1	3		
	2								
	3								
	4								
	5								
	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

Habitat Assessment

SCI/Biorecon

Water sample

RQ-2022-11-07-42

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%.

Site Name:

Rattlesnake Slough @ Lockwood ridge Rd

County:

Waterbody: See Sticker

Date:

Signature:

Analyst:

Comments:

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. **BOLD is exotic invasive**

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	
Alternanthera philoxeroides	X	X	X	X	X	X	X	X	X	X		Micranthemum glomeratum										X	
Bacopa caroliniana (Lemon)												Micranthemum umbrosum											
Bacopa monnieri		X	X	X	X							Myriophyllum aquaticum											
Bidens mitis												Najas guadelupensis											
Boehmeria cylindrica												Nitella sp.											
Centella asiatica												Nuphar luteum											
Ceratophyllum demersum												Orontium aquaticum											
Chara sp.												Panicum hemitomon											
Cicuta maculata												Panicum repens									X		
Cladium jamaicense												Panicum rigidulum											
Colocasia esculenta												Pistia stratioides											
Commelina diffusa												Polygonum glabra											
Commelina virginica												Polygonum hydropiperoides											
Crinum americanum												Polygonum punctatum											
Cyperus				X								Pontedaria cordata		X	X				X	X			
Diodia virginiana												Potamogeton illinoensis											
Eichhornia crassipes												Ruellia simplex (Mex Petunia)											
Eleocharis (wispy viviparous)												Sacciolepis striata											
Fontinalis sp. (Aquatic Moss)							X					Sagittaria kurziana											
Fraxinus caroliniana												Sagittaria lancifolia											
Hydrilla verticillata												Sagittaria latifolia											
Hydrocotyle sp.												Salvinia minima											
Hygrophila polysperma												Samolus parviflora											
Hymenachne amplexicaulis												Saururus cernuus						X	X				
Hymenocallis												Sparganium americanum											
Lachnanthes caroliniana												Schoenoplectus americanus											
Landoltia punctata												Sphagneticola trilobata (Wedelia)	X	X	X	X							
Lemna sp.									X			Typha sp.											
Limnophila sessiflora												Urochloa mutica (Brachiaria)											
Ludwigia leptocarpa												Vallisneria americana											
Ludwigia palustris												Zizania aquatica											
Ludwigia peruviana								X	X			<i>Chaemanthium sessiliflorum</i>					X						
Ludwigia repens	X		X	X	X	X	D	D	X														
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																							
>25 and ≤50% Macrophyte Coverage		X	X	X	X	X	X	X	X	X													
> 50% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X													