REFERENCE SCI*

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

~~STRATEGIC MONITORING PROGRAM~~ FIELD SHEET

January 2018

Data Qualified? Yes / (No)

WIN Station Name: Davenport Cr at SR 545 Bridge **Date:** 3/14/18 (mm/dd/yyyy)

WIN/ Field ID: 26010972 **WBID:** 3170K **Latitude:** 28.27055 (Decimal Degrees)

County: Osceola **ORG ID:** 21 FL CEN **Longitude:** -81.5911 (Decimal Degrees)

Receiving Body of Water: **RQ-2018-** 03-12-59

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Linger	✓		✓		
Mike Dreyman					
Katie Williams		✓		✓	✓

Sampling Equipment

- [x] Sample Container [ ] Van Dorn [ ] Pole
- [ ] Carboy [x] Syringe
- [ ] Dipper [ ] Other
- Depth Measured with: SECCHI DISK LINE
- Equipment ID:

Collection Method

- [x] Wading [ ] Canoe/Kayak
- [ ] From Shore [ ] Electric Motor
- [ ] Other [ ] Gasoline Motor

Water Level: Dry/ Pooled/ (Low)/ Normal / High / Flooded **Meter ID#** Beep / Von **Matrix:** (Fresh) / Marine / DI

Photos: (Yes) No **Flow:** No Flow / Intestital / (Flowing) / NA **Tide:** Rising/ Falling/ Slack/ NA **Tide Times:** High Low

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPTh)	Sp COND (µmhos/cm)	Temp. (C°)
(EST)	1208	0.3	0.15	0.3(S)	9.21	90.8	7.21	0.11	225	14.70
CEN										

Biological Samples Collected: None (HA) (SCI) (RPS) Algae ID LVS LVI Other:

SBIO ID Numbers: SBIO-ID: 78286 HA-ID: 15072 RPS-ID: 8942 Macrophyte-ID: N/A LIMS#: 1975004

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	[x] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	[x] Ice [x] H_2SO_4	SA7341020	12/7/18	[ ] <2
Metals	[x] W-ICPMS [x] W-ICP	[x] Ice [ ] HNO_3	NA7341010	12/7/18	[ ] <2
Filtered Nutrients	[x] W-PO4-F [x] Field Filtered 0.45 µm Filter	[x] Ice	13615055		
Chlorophyll	[x] CHLSUITE-W	[x] Ice			
Physical/Aggregate (Fresh)	[x] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	[x] Ice			
Physical/Aggregate (Marine)	[ ] Alkalinity / W-F / W-TSS / TURBIDITY	[ ] Ice			
Macroinvertebrates	[x] MI-FW-QLDC	[x] Formalin			
Periphyton	[ ] ALGAE-ID	[ ] Ice			
Microbiology	[ ] E Coli [ ] F Coli [ ] Enterococci	[ ] Ice			
Molecular	[ ] PCR-FILTER [x] PCR-HF183 [x] PCR-BacR [ ] PCR-GULL2 [x] PCR-GFD	[x] Ice			
Tracers	[x] W-SUC-AA-R [ ] W-UHERB-AA [x] W-AHERB-AA	[ ] Ice			
Pesticides	[ ] W-PSNP-TQ [ ] W-UHERB-AA [ ] W-AHERB-AA [ ] W-CARB-AA [ ] W-PCL-SQ-R [ ] W-PYR-AA-R [ ] W-GLYPH [ ] W-SUC-AA-R	[ ] Ice [ ] Other			

Place Preservative Sticker(s) Here (If Available)

Notes:

WIN ID / Field ID →

Davenport Creek at SR 545 Bridge

26010972

Signature: **Date:** 3/14/18

Enter Field Parameters, Verify Station ID In LIMS DMT: KMW 3/16/18 (Initials/Date) QC Station ID, Field Parameters In LIMS DMT: 3/22/18 (Initials/Date)

Scan/Save Field Sheets (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)

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

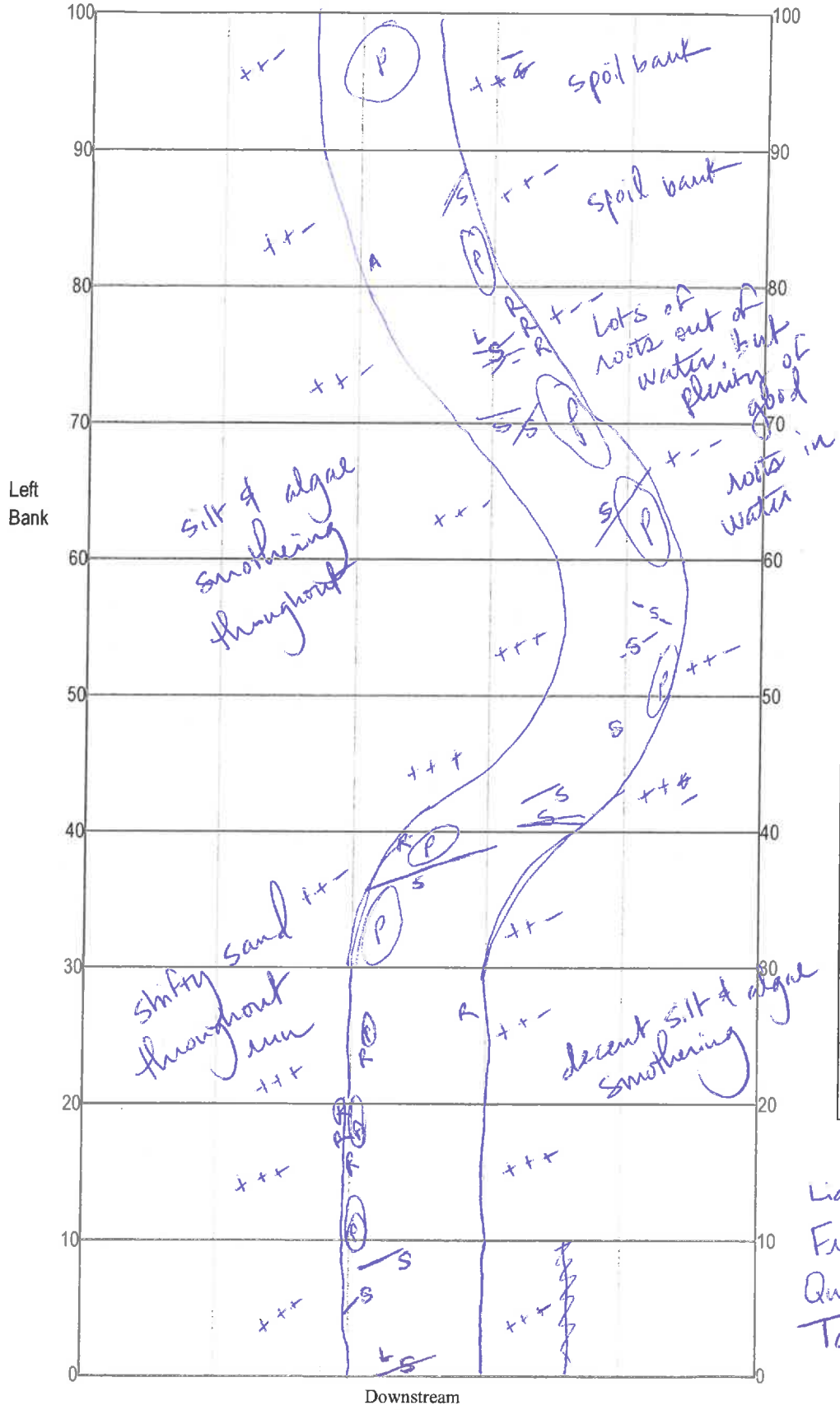
SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FDEP CE-ROC		26010972	3/14/18	
REMARKS:	COUNTY: Osceola	LOCATION: Davenport Creek		FIELD ID/NAME: 26010972

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 9	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 4	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 12	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 12 Primary Score 37	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 7 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. 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 6 Left Bank 9	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 8 Left Bank 8 Secondary Score 61	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: 3/14/18	Analyst: K. Williams	Signature: KWilliams

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: Davenport Creek

Date: 3/14/18

Sampler: K. Willems

100 m: Latitude	
Longitude	
0 m: Latitude	
Longitude	

Substrates: Code key, draw proportionate habitat abundance.		%
S	Snags	
R	Roots/undercut banks	
L	Leaf Packs (or mats)	
A	Aquatic Macrophytes	
P	Pools	total # observed =
		# range expected =

Average width ~~3.54~~ 4 m

Average depth 0.3 m

Velocity measured at 80 meter mark.

WQ & chemistry taken at 100 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:

Liquidambar, Sabal palm, Fraxinus, Toxicodendron, Quercus, Cicuta, Osmunda, Taxodium

62-160.800, F.A.C

Revision Date: March 1, 2014

* Very busy road along right bank, golf course bordering both banks. Spoil banks from both. Understory fairly well trampled.

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

SAMPLE ID 78286 | ORG ID 21FLCEN | LATITUDE 28.27055
COUNTY Osceola | STORET # 26010972 | LONGITUDE -81.59111
DATE 3/14/18 | TIME 1200 | SAMPLING AGENCY FDEP CE-ROC
SITE NAME Davenport Creek
FIELD ID/NAME 26010972 | 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)
50				25			25 golf

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: 16 Right Bank: 14

Hydrologic Modification Score (per FT 3101):

High Water Mark: 0.4 (m) + ~~0.2~~ 0.3 (above present water level) = 0.7 (above bed)

Artificially Impounded: ☐ Yes ☑ No

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

4 m wide

m/s	0.125 m/s	m/s
m deep	0.3 m deep	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 type: Sand, detritus

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)		7	
Undercut Banks / Roots		7	
Leaf Packs or Mat		63	
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....		3	
Mud / Muck / Silt			
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~~ 0.15	14.70	7.21	9.21	90.8	225	0.11	0.3
Mid:								☑ VOB
Bottom								TOTAL DEPTH
								0.3

Meter ID: Boop / Non

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:

60's clear

☑ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM: Mike Linger / Lawrence Drennan / Katie Williams

SIGNATURE: [signature]

DATE: 3/14/18

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:	County:	Date:	Investigators:
Davenport	Osceola	3/14/18	Mike Linger

STORET Station Number: 21010972

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N		
	2	N		
	3	4		
	4	N		
	5	N		84
	6	N		
	7	N		
	8	3		
	9	N		
10	1	N		
	2	N		
	3	5		
	4	N		
	5	N		92
	6	N		
	7	3		
	8	N		
	9	N		
20	1	N		
	2	N		
	3	N		
	4	N		
	5	N		80
	6	N		
	7	N		
	8	N		
	9	N		
30	1	3		
	2	3		
	3	N		
	4	N		
	5	N		84
	6	N		
	7	N		
	8	4		
	9	N		
40	1	3		
	2	N		
	3	N		
	4	N	Y	
	5	N	Y	76
	6	N	Y	
	7	N	Y	
	8	N	Y	
	9	N	Y	
50	1	N		
	2	3		
	3	N		
	4	N		
	5	N		80
	6	N		
	7	4		
	8	N		
	9	N		
60	1	N		
	2	N		
	3	N		
	4	N		
	5	N		92
	6	N		
	7	N		
	8	N		
	9	N		
70	1	N		
	2	N		
	3	3		
	4	N		
	5	N	Y	96
	6	N	Y	
	7	N	Y	
	8	N	Y	
	9	N		
80	1	N		
	2	N		
	3	3		
	4	4		
	5	N		88
	6	5		
	7	N		
	8	N		
	9	N		
90	1	N		
	2	3		
	3	N		
	4	5		
	5	N		84
	6	N		
	7	N		
	8	N		
	9	N		
100	1	N		
	2	N		
	3	N		
	4	N		
	5	N		92
	6	N		
	7	N		
	8	N		
	9	N		

Secchi depth	0.3 (s)
Estimated?	

# points ranked 4-6	6
total points assessed	99
% points ranked 4-6	6

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	✓
RQ- 2018-03-12-59	

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%.

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

Waterbody: Davenport Creek	Date: 3/14/18	County: Osceola	Storet Number: 26010972
Analyst: Mike Linger		Signature:	
Comments: NO LVS, <2m² veg			

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											
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											
>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											