



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF _____

March 2017

Data Qualified?
Yes / No

STORET Station Name: Silver River 0.6 miles US of boat canal Date: 6-5-17

STORET Station ID: G1CE0059 WBID: 2772D Latitude: 29.2071311 (mm/dd/yyyy)

County: Marion RQ: 2017-06-05-69 ORG ID: 21FLCEN Longitude: -81.99716711 (Decimal Degrees)

Receiving Body of Water: Ocklawaha Field ID: G1CE0059 (Decimal Degrees)

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment			
Terry Riordan				☒	☒				☒ Sample Container	☐ Van Dom	☐ Pole	
Mike Drennan									☐ Carboy	☒ Syringe		
									☐ Dipper	☐ Other		
									Equipment ID _____			
									Collection Method			
									☐ Wading	Via Boat		
									☐ From Shore	☐ Canoe/Kayak		
									☐ Other (note below)	☐ Electric Motor		
										☒ Gasoline Motor		
Water Level: Dry / Pooled / Low / <u>Normal</u> / High / Flooded				Matrix: <u>Fresh</u> / Marine / DI								
Meter ID# <u>BSCP/NON</u>				Photos: Yes / No				Tide Falling: Yes / No / <u>NA</u>				
Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (umhos/cm)	Temp. (C°)		
EST	1310	0.3	1.4	6.1	72	7.4	<u>0.2</u>	1.4(s)	487	23.8		
CEN												

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

SBIO ID Numbers: SBIO-ID: 77696 RPS-ID: 8709 Macrophyte-ID: 16524 LIMS#: 1903598

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4			☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CH-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Periphyton	☒ ALGAE-ID	☒ Ice			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ PCR-FILTER	☐ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-SUC-AA-R	☐ Ice			
	☐ W-PCL-SQ-R ☐ W-UHERB-AA ☐ W-GLYPH	☐ Other			

Notes: _____

Signature: [Signature] Date: 6-5-17

Silver River 0.6 miles US of boat canal

Date: 06/05/2017 RQ-2017-06-05-69

G1CE0059

Field ID ↑ STORET ↓ G1CE0059

Field Parameters Entered into LIMS: LMD 6/16/17 (Initials/Date)

Date Migrated to STORET: _____ (Initials/Date)

Field Parameters QC in LIMS: JLC 7-13-17 (Initials/Date)

Field Sheets Scanned/Saved: LMD 6/16/17 (Initials/Date)

FDEP FORM FD 9000-3: PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID _____ ORG ID 21 FLCEN LATITUDE 29.2071311
 COUNTY Marion STORET # 61CE0059 LONGITUDE -81.99716711
 DATE 6/5/17 TIME 1310 SAMPLING AGENCY FDEP-CEROC
 SITE NAME Silver River 0.6 mi US of boat canal
 FIELD ID/NAME 61CE0059 RECEIVING BODY OF WATER Ocklawaha

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>100</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 ☐ m wide <u>20</u> m wide ☐ m/s <u>0.27</u> m/s ☐ m/s ☐ m deep <u>1.4</u> m deep ☐ m deep			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) ☐					
High Water Mark: <u>0.6</u> + <u>1.4</u> = <u>2.0</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 Invert ☐ PERI ☐ % Coverage # Times Sampled # 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>23.8</u> <u>7.4</u> <u>6.1</u> <u>72</u> <u>487</u> <u>0.2</u> <u>1.4</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Bottom: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Meter ID: <u>BOOP-NON</u> ☒ VOB TOTAL DEPTH <u>1.4</u>		
Woody Debris (Snags) ☐ ☐ ☐ Undercut Banks / Roots ☐ ☐ ☐ Leaf Packs or Mat ☐ ☐ ☐ Aquatic Vegetation ☐ ☐ ☐ Rock or Shell Rubble ☐ ☐ ☐ Sand ☐ ☐ ☐ Mud / Muck / Silt ☐ ☐ ☐ Other ☐ ☐ ☐ Other ☐ ☐ ☐			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>7093010</u> Exp: <u>4/13/18</u> Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☐ ☐ ☒ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☐ ☒ ☐ ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐ Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐			AMBIENT FIELD CONDITIONS / NOTES: <u>High 80's, overcast</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.		

SAMPLING TEAM

Mike Drennan / Terry Riordan

SIGNATURE :



DATE :

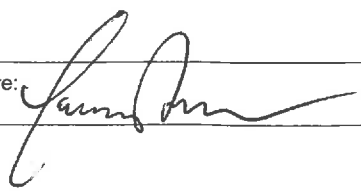
6/5/17

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

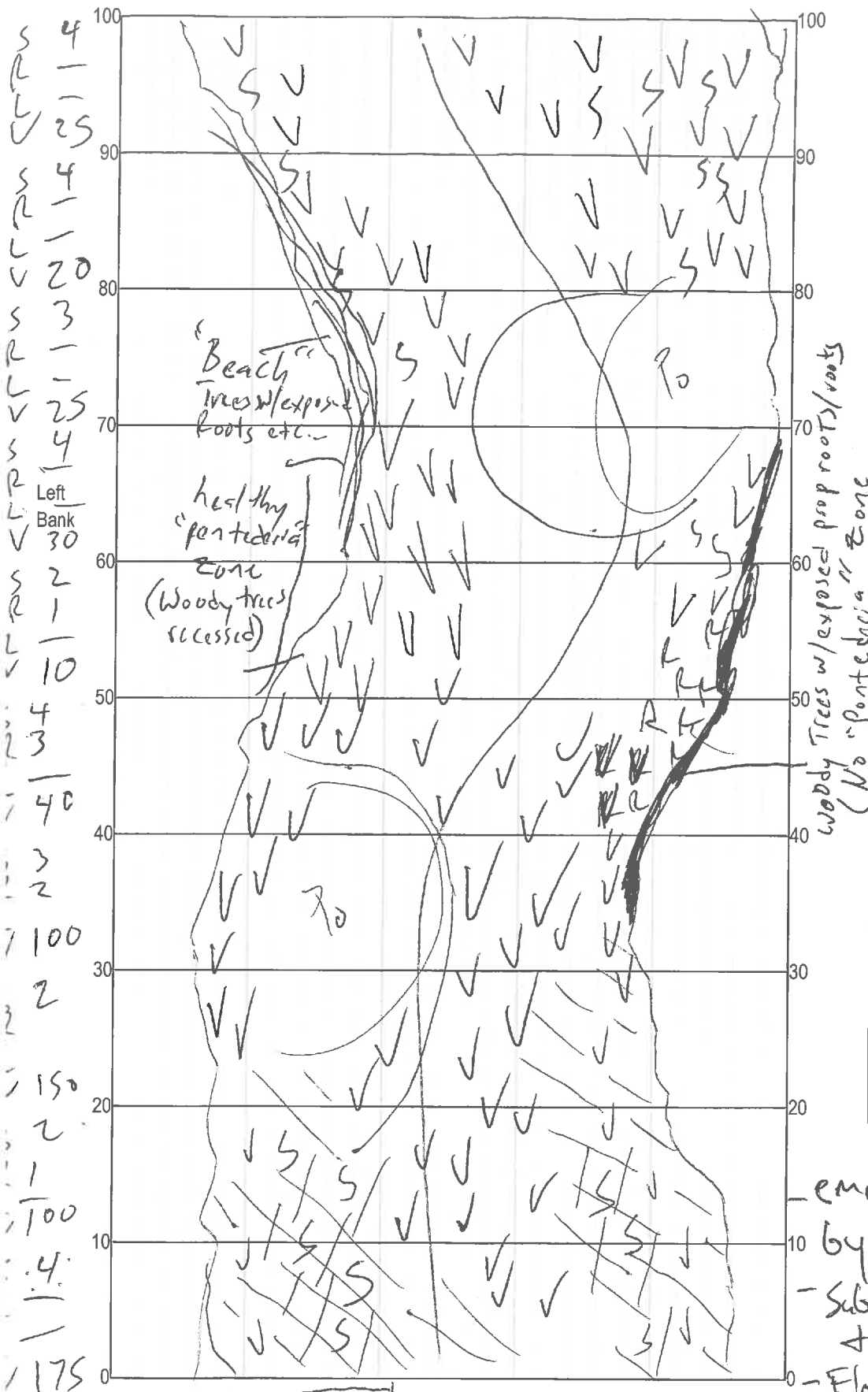
SAMPLING AGENCY: FDDEP - CEROC		STORET STATION NUMBER: G1CE0059	DATE (MM/DD/YY):	RECEIVING BODY OF WATER: Ocklawaha
REMARKS:	COUNTY: Marion	LOCATION: Silver River 0.6 miles us of boat ramp		FIELD ID/NAME: G1CE0059

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 14	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	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 18 ----- Primary Score 69	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	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 20	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10 20	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. 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 16 Left Bank 16 20	Width of vegetation greater than 18 m -10 9	Width of vegetation > 12 to 18 m 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 16 ----- Secondary Score 76	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

TOTAL SCORE**145**

Date: 6/5/17	Analyst: Mike Drennan	Signature: 
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Silver River 0.6 mi. US of boat canal
Date: 6/5/17
Sampler: Mike Drennan/Terry Riordan

100 m: Latitude 29.2075
Longitude -81.9991
0 m: Latitude 29.2071
Longitude -81.9975

Substrates: Code key, draw proportionate habitat abundance. %

☒ S Snags
☒ R Roots/undercut banks
☒ L Leaf Packs (or mats)
☒ V Aquatic Macrophytes
☐
☐
☒ Po Pools total # observed = 25
range expected = 1-2

Average width 20 m
Average depth 1.4 m

Velocity measured at 60 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: >18 m
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:
- emergent plants dominated by Pontederia & Nuphar
- Submersed: Sagittaria kurziana & Vallisneria
- Floodplain is wetland, stable banks

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

62-160.800/F.A.C

Sagittaria k.l.
Vallisneria zone
Pontederia latifolia zone

$S = 32$
 $R = 7$
 $V = 675$
 $714 / 2000 = 36\%$
(includes sludge)

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Silver River 0.6 miles
US of Boat canal

County:
Marion

Date:
6-5-17

Investigators:
Terry R. Jordan / Mike Drannan

STORET Station Number:
61CE0059

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	3	N	7	60	1	5	N	18
	2	3	N			2	6	N	
	3	X	N			3	X	N	
	4	X	N			4	X	N	
	5	X	N			5	X	N	
	6	X	N			6	X	N	
	7	X	N			7	X	N	
	8	3	N			8	3	N	
	9	N	N			9	N	N	
10	1	4	N	13	70	1	6	N	8
	2	6	N			2	6	N	
	3	X	N			3	X	N	
	4	X	N			4	X	N	
	5	X	N			5	X	N	
	6	X	N			6	X	N	
	7	X	N			7	X	N	
	8	3	N			8	4	N	
	9	4	N			9	5	N	
20	1	4	N	14	80	1	3	N	5
	2	4	N			2	3	N	
	3	X	N			3	X	N	
	4	X	N			4	X	N	
	5	X	N			5	X	N	
	6	X	N			6	X	N	
	7	X	N			7	X	N	
	8	4	N			8	5	N	
	9	3	N			9	4	N	
30	1	N	N	10	90	1	3	N	3
	2	6	N			2	6	N	
	3	X	N			3	X	N	
	4	X	N			4	X	N	
	5	X	N			5	X	N	
	6	X	N			6	X	N	
	7	X	N			7	X	N	
	8	6	N			8	5	N	
	9	4	N			9	4	N	
40	1	3	N	42	100	1	4	N	6
	2	3	N			2	4	N	
	3	X	N			3	X	N	
	4	X	N			4	X	N	
	5	X	N			5	X	N	
	6	X	N			6	X	N	
	7	X	N			7	X	N	
	8	3	N			8	6	N	
	9	4	N			9	6	N	
50	1	N	N	29		1	4	N	
	2	4	N			2	4	N	
	3	X	N			3	X	N	
	4	X	N			4	X	N	
	5	X	N			5	X	N	
	6	X	N			6	X	N	
	7	X	N			7	X	N	
	8	6	N			8	6	N	
	9	4	N			9	6	N	

Secchi depth 1.4
Estimated? N

points ranked 4-6 33
total points assessed 49
% points ranked 4-6 67

Check accompanying data
collected at same site/date.

Algal mat sample ☒
Linear Veg Survey ☒
Habitat Assessment ☒
SCI/Biorecon ☒
Water sample ☒

RQ- 2017-06-05-69

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

6mm

20mm

10cm

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

Waterbody: Silver River 0.6 mi. US of boat Canal Date: 6-5-17 County: Marion Storet Number: 61CE0059

Analyst: Terry Rierlan / M. K. Brennan

Signature: [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 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.

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												Micranthemum glomeratum												
Bacopa caroliniana												Micranthemum umbrosum												
Bacopa monnieri												Myriophyllum aquaticum												
Bidens mitis												Najas guadelupensis												
Boehmeria cylindrica	✓	✓	✓		✓			✓	✓			Nuphar luteum		✓	✓		✓		✓	✓				
Centella asiatica												Orontium aquaticum												
Ceratophyllum demersum		✓	✓					✓	✓	✓		Panicum hemitomon									✓			
Chara												Panicum repens												
Cicuta maculata	✓		✓			✓			✓	✓		Panicum rigidulum												
Cladium jamaicense												Pistia stratioides												
Colocasia esculenta	✓		✓	✓				✓		✓		Polygonum glabra												
Commelina diffusa												Polygonum hydropiperoides												
Commelina virginica												Polygonum punctatum												
Crinum americanum												Pontedaria cordata	✓	✓	✓				✓	✓	✓			
Diodia virginiana												Potamogeton illinoensis												
Eichhornia crassipes												Ruellia simplex												
Eleocharis (wispy viviparous)												Sacciolepis striata												
Hydrilla verticillata	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		Sagittaria kurziana	D	D	D	D	D	D	D	D	D			
Hydrocotyle	✓	✓	✓			✓	✓	✓	✓	✓		Sagittaria lancifolia												
Hygrophila polysperma												Sagittaria latifolia												
Hymenocallis												Salvinia minima												
Lachnanthes caroliniana												Samolus parviflora												
Landoltia punctata												Saururus cernuus												
Lemna	✓		✓		✓		✓	✓	✓	✓		Sparganium americanum												
Limnophila sessiflora												Typha						✓						
Ludwigia leptocarpa												Vallisneria americana	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Ludwigia palustris												Zizania aquatica												
Ludwigia peruviana												<u>Sag. isoetes</u>						✓	✓	✓				
Ludwigia repens												<u>Lobelia cardinalis</u>	✓	✓				✓	✓	✓				
Luziola fluitans												<u>Wolffia</u>			✓		✓	✓	✓	✓				
<u>Rhynchos innudata</u>	✓	✓			✓			✓	✓			<u>Pluchea</u>			✓			✓	✓	✓				
<u>Aster subternus</u>	✓	✓			✓	✓	✓	✓	✓			<u>Rumex verticillatus</u>	✓	✓							✓			
<u>Juncus crassius</u>	✓	✓			✓		✓	✓	✓			<u>Cephalanthus occidentalis</u>	✓	✓			✓	✓	✓	✓				
<u>Cyperus odoratus</u>	✓	✓						✓				<u>Tadokim</u>	✓	✓	✓	✓	✓	✓	✓	✓	✓			
												<u>Fraxinus caroliniana</u>							✓	✓	✓			
												<u>Magnolia virginiana</u>					✓	✓		✓				
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																								