



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

October 2017

Qualified Data

Location/STORET Station Name: Double Run @ 800m DS of Double Run Rd Date: 12/5/2017
(mm/dd/yyyy)

STORET # G1CE0032 WBID: 2852 Latitude: 28.6901944
(Decimal Degrees)

County: LAKE RQ - 2017-12-04-54 ORG ID: 21 FL CEN Longitude: -81.7494138
(Decimal Degrees)

Receiving Body of Water: LAKE HARRIS Field ID: G1CE0032

Sampling Team Members						WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment				
TERRY RIORDAN						☒	☒	☒	☒	☒	☒ Sample Container ☐ Van Dorn ☐ Pole ☐ Carboy ☒ Syringe ☐ Dipper ☐ Other _____ Equipment ID: _____				
MIKE DRENNAN						☐	☒	☐	☒	☒	Collection Method ☐ Wading ☐ Canoe/Kayak ☐ From Shore ☐ Electric Motor ☐ Other _____ ☒ Gasoline Motor				
Water Level: Dry / Low / Normal / <u>Above Normal</u> / Flooded						Meter ID# <u>Boop/Now</u>					Matrix: Fresh / Marine / DI				
Photos: ☒ Yes / No		Flow: No Flow / Intestinal / <u>Flowing</u> / NA		Tide: Rising / Falling / Slack / <u>NA</u>		Tide Times: High _____ Low _____									
Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)					
EST	1225	0.3	2.4	3.4	37	6.7	0.1	0.9	213	20.3					
CEN		1.9		2.5	27	6.6	0.1		204	19.3					
Biological Samples Collected: None <u>HA</u> SCI <u>RPS</u> Algae ID <u>LVS</u> LVI Other _____															
SBIO ID Numbers: SBIO-ID: <u>79168</u> HA-ID: <u>14961</u> RPS-ID: <u>8877</u> Macrophyte-ID: <u>10790</u> LIMS#: <u>1950965</u>															
Parameter Suite	Parameter Methods					Preservation	Lot#	Expiration	pH Check						
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP					☒ Ice ☒ H ₂ SO ₄	SA7275010	11/2/18	☒ <2						
Metals	☐ W-ICPMS ☐ W-ICP					☐ Ice ☐ HNO ₃			☐ <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-Cl-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 ☐ Enterococci					☐ Ice									
Molecular	☐ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD					☐ Ice									
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA					☐ Ice									
Pesticides	☐ W-PSNP-TQ ☐ W-UHERB-AA ☐ W-AHERB-AA ☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R					☐ Ice ☐ Other									

Contains: 1:1 Sulfuric Acid
Lot No: SA7275010
Expires: 10/02/18
See Safety Data Sheet (SDS)

THE HAZARD SCIENTIFIC
1221 NORTH WILSON STREET
SUITE 100
TAMPA, FL 33604
727-833-7111
FAX 727-833-7112
www.hazardscientific.com
Cautions: 1:1 Sulfuric Acid
Sulfuric acid is a highly corrosive liquid. It can cause severe burns and damage to eyes, skin, and clothing. It is also highly flammable and can react violently with water. It should be handled with extreme care and proper PPE should be worn at all times. See SDS for more information.

Notes: _____

Double Run @ 800m DS of Double Run Rd.

Date: 12/05/2017
RQ-2017-12-04-54

Signature: [Signature] Date: 12/5/17

Field Parameters Entered into LIMS: END 1/10/18 (Initials/Date)

Field Parameters QC in LIMS: 7R 1/10/18 (Initials/Date)

Date Migrated to STORET: _____

Field Sheets Scanned/Saved: _____

G1CE0032
Field ID ↑
STORET ↓
G1CE0032

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

SAMPLE ID 78168 ORG ID 21FLCEN LATITUDE 28.6901944
 COUNTY LAKE STORET # 61CE0032 LONGITUDE -81.7494138
 DATE 12/5/17 TIME 1225 SAMPLING AGENCY FDEP-CEROC
 SITE NAME Double Run @ 800m DS of Double Run Rd.
 FIELD ID/NAME 61CE0032 RECEIVING BODY OF WATER Lk Harris

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): <u>100m buffer</u> Forest/Natural <u>100</u> Silviculture <u>0</u> Field/Pasture <u>0</u> Agricultural <u>0</u> Residential <u>0</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</u>								Landscape Development Intensity Index (LDI) <u>2.759 (Run 53 2017)</u>	
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>25</u> m wide <u>0.06</u> m/s <u>2.1</u> m deep <u>2.9</u> 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) <u>0</u>					
High Water Mark: <u>0</u> + <u>2.1</u> = <u>2.1</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

Sed type: Sand / silt

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

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	<u>1.6</u>		
Undercut Banks / Roots			
Leaf Packs or Mat			
Aquatic Vegetation	<u>0.8</u>		
Rock or Shell Rubble			
Sand			
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:	<u>0.3</u>	<u>20.3</u>	<u>6.7</u>	<u>3.4</u>	<u>37</u>	<u>213</u>	<u>0.1</u>	<u>0.9</u>
Mid:								☐ VOB
Bottom	<u>1.9</u>	<u>19.3</u>	<u>6.6</u>	<u>2.5</u>	<u>27</u>	<u>204</u>	<u>0.1</u>	<u>2.4*</u>
Meter ID:								

Water Odors Normal ☒ Petroleum ☐
 Sewage ☐ Chemical ☐ Other ☐

Water Sample Taken? ☒ Yes ☐ No
 Sample Preserved? ☒ Yes ☐ No
 Lot Number: SA7275010 Exp: 10/2/18

Algae Sample Taken? ☐ Yes ☒ No
 Sample Preserved? ☐ Yes ☐ No
 Lot Number: Exp:

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:

*Depth of 2.1 m is Average of two soundings. Depth @ water sample site is 2.4 m
☐ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM

Terry Rorden / Mike Deenan

SIGNATURE:

[Signature]

DATE:

1/4/18

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

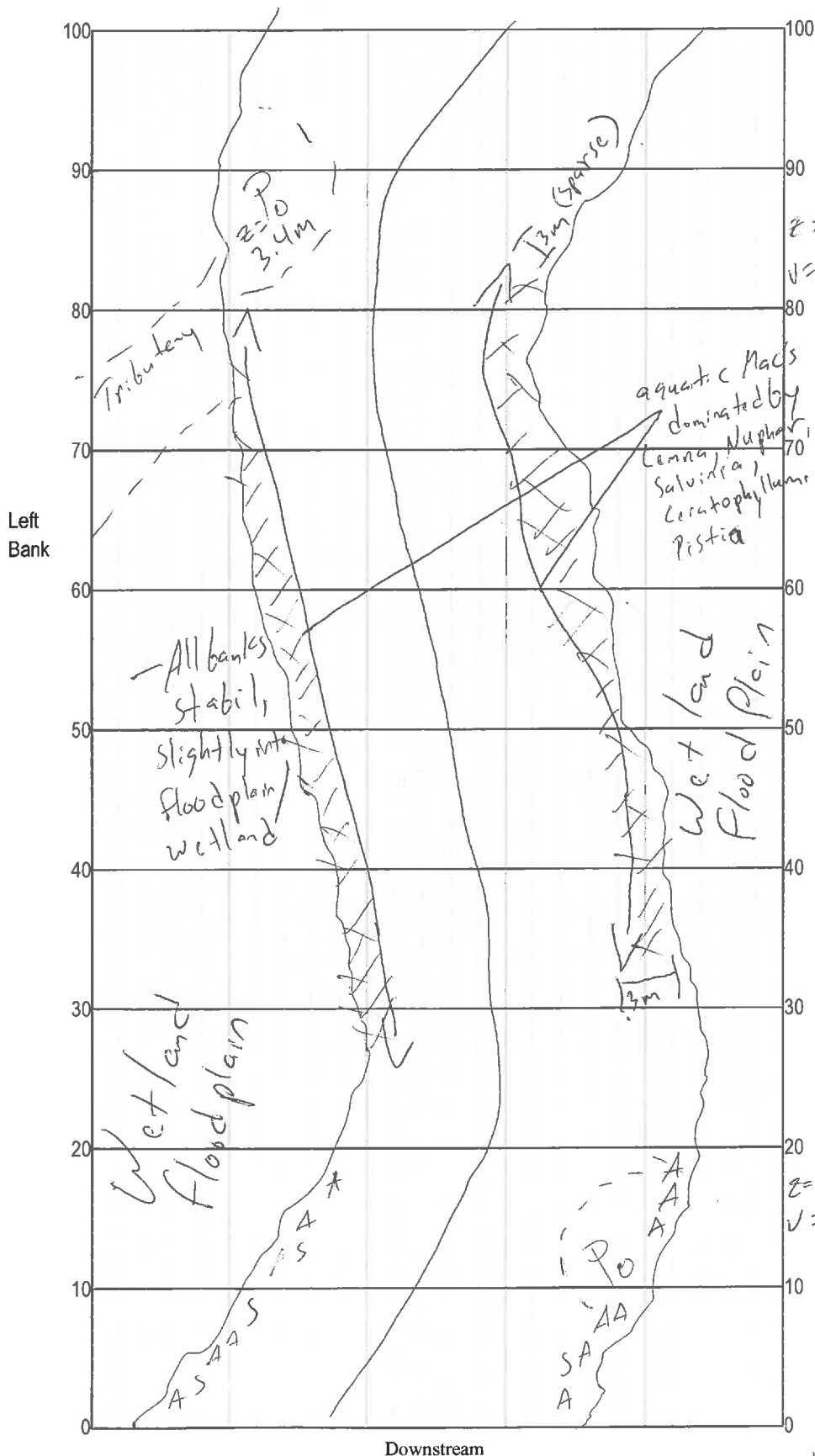
SAMPLING AGENCY: <u>FDCP-CEROC</u>		STORET STATION NUMBER: <u>61CE0032</u>	DATE (MM/DD/YY): <u>12/5/2017</u>	RECEIVING BODY OF WATER: <u>Little Lk. Harris</u>
REMARKS:	COUNTY: <u>Lake</u>	LOCATION: <u>Double Run @ 800m DS of Double Run Rd.</u>		FIELD ID/NAME: <u>61CE0032</u>

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>9</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>3</u>	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 <u>7</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 2 1
Habitat Smothering <u>12</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 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 <u>20</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	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.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank <u>10</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>10</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	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.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>8</u> Left Bank <u>8</u> ----- Secondary Score <u>76</u>	10 9	8 7 6	5 4	3 2 1

107 **TOTAL SCORE**

Date: <u>1/4/2018</u>	Analyst: <u>Mike Drennen</u>	Signature: 
-----------------------	------------------------------	--

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



Location: Double Run
 Date: 12/5/17
 Sampler: Terry Riordan/Mike Diennan

100 m: Latitude	<u>28.689369</u>
Longitude	<u>-81.748893</u>
0 m: Latitude	<u>28.6901444</u>
Longitude	<u>-81.7494138</u>
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 = <u>2</u>	
# range expected = <u>.5-1</u>	
Average width <u>25</u> m	
Average depth <u>2.3</u> m	
Velocity measured at <u>0</u> meter mark.	
WQ & chemistry taken at <u>0</u> 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:

- Surrounding canopy is cypress, Myssa, Magnolia
 - Floodplain is wetland
 - level is just above bankfull into wetland
 - Some exotics present (Pistia, Hydrilla, etc.)

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

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Double Run</u>					County: <u>LAKE</u>		Date: <u>12/5/17</u>		Investigators: <u>Terry Riordan</u> <u>Mike Brennan</u>	
					STORET Station Number: <u>61CE0032</u>					
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	2	2		60	1	2	2		
	2	2	2			2	2	2		
	3	2	2			3	2	2		
	4	2	2			4	2	2		
	5	2	2	0		5	2	2	0	
	6	2	2			6	2	2		
	7	2	2			7	2	2		
	8	2	2			8	3	2		
	9	3	2			9	2	2		
10	1	2	2		70	1	3	2		
	2	2	2			2	4	2		
	3	2	2			3	2	2		
	4	2	2			4	2	2		
	5	2	2	0		5	2	2	0	
	6	2	2			6	2	2		
	7	2	2			7	2	2		
	8	2	2			8	2	2		
	9	2	2			9	2	2		
20	1	2	2		80	1	3	2		
	2	2	2			2	2	2		
	3	2	2			3	2	2		
	4	2	2			4	2	2		
	5	2	2	0		5	2	2	0	
	6	2	2			6	2	2		
	7	2	2			7	2	2		
	8	2	2			8	2	2		
	9	2	2			9	2	2		
30	1	2	2		90	1	2	2		
	2	2	2			2	2	2		
	3	2	2			3	2	2		
	4	2	2			4	2	2		
	5	2	2	0		5	2	2	0	
	6	2	2			6	2	2		
	7	2	2			7	2	2		
	8	2	2			8	2	2		
	9	2	2			9	2	2		
40	1	2	2		100	1	2	2		
	2	2	2			2	2	2		
	3	2	2			3	2	2		
	4	2	2			4	2	2		
	5	2	2	0		5	2	2	0	
	6	2	2			6	2	2		
	7	2	2			7	2	2		
	8	2	2			8	2	2		
	9	2	2			9	2	2		
50	1	2	2		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%.					
	2	2	2							
	3	2	2							
	4	2	2							
	5	2	2	0						
	6	2	2							
	7	2	2							
	8	2	2							
	9	2	2							

Secchi depth 0.9
Estimated? N

points ranked 4-6 9
total points assessed 99
% points ranked 4-6 9

(Exclude X's)

Check accompanying data collected at same site/date.
Algal mat sample ☐
Linear Veg Survey ☒
Habitat Assessment ☒
SCI/Biorecon ☐
Water sample ☒
RQ- 2017-12-04-54

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

(> 3 considered smothered)

(N to 1 mm)

(3) 6mm

(4) 20mm

(5) 10cm

(6)

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

Waterbody: Double Run Date: 12/5/17 County: Wake Storet Number: G7CE0032
 Analyst: Terry Riosden 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 is 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											
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>Wolffia</u>		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Ludwigia repens												<u>Alimbriz Aster #</u>		✓	✓	✓		✓	✓	✓	✓	✓	
Luziola fluitans												<u>Toxodon</u>		✓	✓	✓	✓		✓	✓	✓	✓	
<u>Osmunda regalis</u>	✓	✓	✓		✓	✓			✓	✓		<u>Magnolia virginiana</u>		✓	✓		✓	✓	✓	✓	✓	✓	
<u>Najas acandens</u>	✓	✓	✓			✓	✓	✓	✓	✓		<u>Blechnum</u>		✓	✓		✓	✓	✓	✓	✓	✓	
<u>Limpbyum</u>					✓		✓	✓	✓	✓		<u>Myrica cerifera</u>		✓	✓	✓		✓	✓	✓	✓	✓	
<u>Cephalanthus</u>		✓			✓		✓	✓	✓	✓		<u>Aster</u>		✓	✓	✓	✓	✓	✓	✓	✓	✓	
												<u>Acer</u>		✓	✓		✓	✓	✓	✓	✓	✓	
If no Dominant or Co-Dominant were selected, indicate with "X"	X	X	X	X	X	X	X	X	X	X		* - Symphyotrichum carolinianum											
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																							

#(family Aster carolinianus)