

SCI

Site Name Unnamed Drain @ Lake Live Oak Rd Sample Date 5/8/18

WBID 3037 WIN ID GZCE0168 RQ-2018-05-07-61

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	LMD 5/24/18	JR 6/25/18
Create SBIO station visit	LMD 5/25/18	n/a
Phys/Chem entry	LMD 5/25/18	JR 6/25/18
Habitat Assessment entry	LMD 5/25/18	JR 6/25/18
Vascular entry (add LIMS ID to entry)	N/A	
RPS entry	LMD 5/25/18	JR 6/25/18
Authorize SBIO data	JR 6/25/18	n/a
Scan all sheets to 21FLCEN folder		n/a
LIMS/WIN migration		n/a
File in cabinet		n/a

Comments/notes:

No LVS (< 2m²)

(Initials/Date)

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

SAMPLE ID 78407 ORG ID 21 FL CEN LATITUDE 28.50351
 COUNTY Orange STORET # G2CE0168 LONGITUDE -81.14955
 DATE 5/8/18 TIME 1200 SAMPLING AGENCY FOEP CE-ROC
 SITE NAME Unnamed Drain @ Lake Live Oak Rd
 FIELD ID/NAME G2CE0168 RECEIVING BODY OF WATER Econ River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) : Forest/Natural <u>75</u> Silviculture <u> </u> Field/Pasture <u> </u> Agricultural <u> </u> Residential <u>10</u> Commercial <u> </u> Industry <u> </u> Other (Specify) <u>power line easement</u>							Landscape Development Intensity Index (LDI) <u> </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>4</u> m wide <u> </u> m/s <u>0.2</u> m/s <u> </u> m/s <u> </u> m deep <u>0.3</u> m deep <u> </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> </u>			
High Water Mark: <u>0.4</u> + <u>0.3</u> = <u>0.7</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 type: Sand, shell/rock hash,

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse	Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) : <u> </u>	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	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	<u>1.1</u>	<u>7</u>	<u> </u>
Undercut Banks / Roots	<u>0.8</u>	<u>7</u>	<u> </u>
Leaf Packs or Mat	<u> </u>	<u>1</u>	<u> </u>
Aquatic Vegetation	<u>0.1</u>	<u>2</u>	<u> </u>
Rock or Shell Rubble..	<u> </u>	<u>2</u>	<u> </u>
Sand.....	<u> </u>	<u>1</u>	<u> </u>
Mud / Muck / Silt	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>
Other	<u> </u>	<u> </u>	<u> </u>

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	<u>0.15</u>	<u>22.15</u>	<u>7.99</u>	<u>8.34</u>	<u>96.0</u>	<u>854</u>	<u>0.42</u>	<u>0.3</u>
Mid:	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	☒ VOB
Bottom	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Meter ID:	<u>Boop / non</u>							<u>0.3</u>

Water Odors Normal ☒ Petroleum ☐
 Sewage ☐ Chemical ☐ Other ☐
 Water Sample Taken? ☒ Yes ☐ No
 Sample Preserved? ☒ Yes ☐ No
 Lot Number: Exp:
 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) ☒ slightly Tannic, Turbid brown
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:

80's clear
☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM

Mike Linger, Mike Drennan, Terry Riordan,
Liz Bates

SIGNATURE :

[Signature]

DATE :

5/8/18

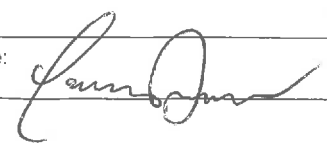
DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDEP-CEROC</u>		STORET STATION NUMBER: <u>62CE0168</u>	DATE (MM/DD/YY): <u>5/8/18</u>	RECEIVING BODY OF WATER: <u>Eron River</u>
REMARKS:	COUNTY: <u>Orange</u>	LOCATION: <u>Unnamed Drain @ Lake Live Oak Rd.</u>	FIELD ID/NAME: <u>62CE0168</u>	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity <u>7</u>	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 <u>2</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>13</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>35</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 Artificial Channelization <u>20</u> ^{LAD} <u>19</u>	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 <u>9</u> Left Bank <u>9</u> <u>18</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. 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 <u>18</u> ^{LAD} <u>9</u> Left Bank <u>10</u> <u>9</u> <u>18</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 2 1
Riparian Zone Vegetation Quality Right Bank <u>9</u> Left Bank <u>8</u> <u>17</u> ----- Secondary Score <u>72</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

107

TOTAL SCORE

Date: <u>5/8/18</u>	Analyst: <u>Langer, Riordan, Drennon, Bates</u>	Signature: 
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

$S = .1$
 $R = .6$
 $A = 0$

 $S = .1$
 $R = .8$
 $A = 0$

 $S = .2$
 $R = .3$
 $A = 0$

 $S = .1$
 $R = .2$ Left Bank
 $A = 0$

 $S = .5$
 $R = .05$
 $A = 0$

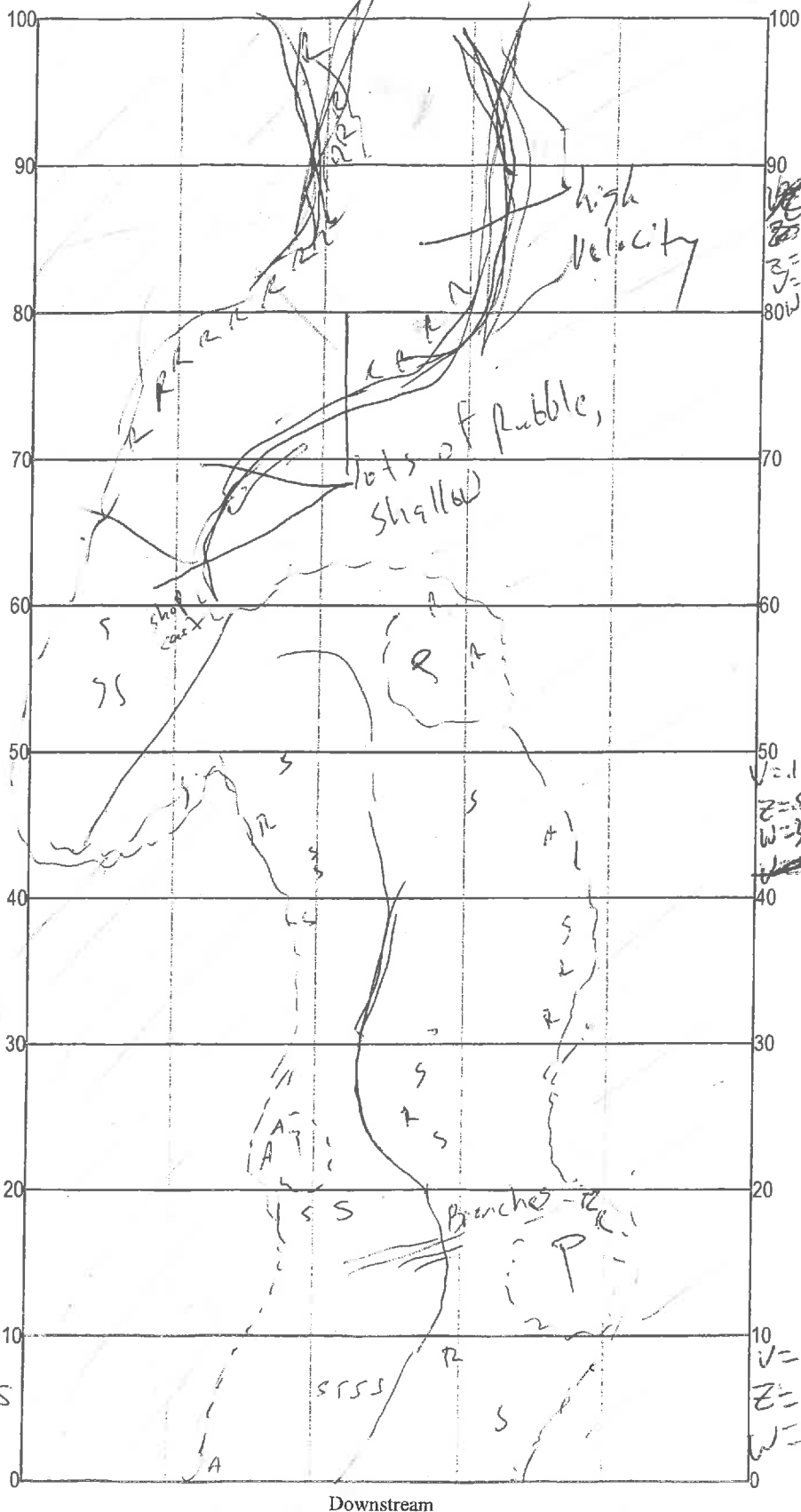
 $S = .3$
 $R = .05$
 $A = .05$

 $S = .85$
 $R = .15$
 $A = 0$

 $S = .4$
 $R = .1$
 $A = .15$

 $S = .3$
 $R = .1$
 $A = 0$

 $S = .9$
 $R = .05$
 $A = .1$



Location: Unnamed Drain @ Lake Live Oak Rd.
 Date: 5/8/18
 Sampler: Linger, Rordan, Drennon, Bates

100 m: Latitude 28.503699
 Longitude -81.149130
 0 m: Latitude 28.504245
 Longitude -81.148390

Substrates: Code key, draw proportionate habitat abundance.

	Snags	<u>1.1</u>
	Roots/undercut banks	<u>.8</u>
	Leaf Packs (or mats)	<u>—</u>
	Aquatic Macrophytes	<u>.1</u>
	Pools	total # observed = <u>3</u> # range expected = <u>2-4</u>

Average width 3 m
 Average depth .47 m

Velocity measured at 5, 45, 85 meter mark.

WQ & chemistry taken at 90 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:

- Cicuta, Sabal, Saururus,
 Carex, Acer, Taxodium
 $V = .16 \text{ m/s}$
 $Z = .25 \text{ m}$ - Good Flood Plain
 $W = 3.5 \text{ m}$ - Some banks $> 60^\circ$ but good armoring

- Despite good flow silting present

- Good Siltation
 Revision Date: March 1, 2014

62-160.800, F.A.C



$BF = .4 > WL$
 $V = .20 \text{ m/s}$
 $Z = .47 \text{ m}$
 $W = 3 \text{ m}$

$S = 3.4$
 $R = 2.4$
 $A = .3$
 $6.1 \text{ m}^2 / 300 \text{ m}^2 = 2\%$

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>Unnamed Drain @ Live Oak Rd</u>					County: <u>Org</u>		Date: <u>5/8/18</u>		Investigators: <u>Terry Riordan</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	STORET Station Number: <u>G2CE0168</u>

0	1	4	N	80	60	1	N	N	84
	2	2				2	5		
	3	4				3	N		
	4	N				4	3		
	5	6				5	N		
	6	N				6	3		
	7	N				7	3		
	8	3				8	N		
	9	N				9	N		
10	1	2		96	70	1	5		72
	2	2				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N				5	N		
	6	N				6	N		
	7	3				7	N		
	8	3				8	3		
	9	N				9	N		
20	1	4		96	80	1	N		86
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N				5	N		
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
30	1	4		92	90	1	N		72
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N				5	N		
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
40	1	6		54	100	1	3		96
	2	N				2	N		
	3	N				3	3		
	4	N				4	N		
	5	N				5	N		
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	3				9	N		
50	1	N		76	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	N							
	3	X							
	4	X							
	5	X							
	6	X							
	7	X							
	8	4							
	9	N							

Secchi depth	<u>0.3</u>
Estimated?	<u>N</u>

# points ranked 4-6	<u>8</u>
total points assessed	<u>99</u>
% points ranked 4-6	<u>8</u>

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	☒
SCI/Biorecon	☒
Water sample	☒
RQ-2018-05-07-61	

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

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

Waterbody: Unnamed Drain @ Lake Live Oak	Date: 5/8/19	County: Orange	Storet Number: 62CE0168
Analyst: Mike Linger		Signature: <i>Mike Linger</i>	

Comments: 10 LVS, $< 2\text{m}^2$ of vegetation

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.

[illegible]