



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SURFACE WATER FIELD SHEET
Watershed Monitoring Section
January 2016

STATION INFORMATION

Station Name (Random ID for Status): 25-LR-1001P Date: 06/06/06
Waterbody Name: Arbuckle Creek (if known) All Times Are: (circle one) ETZ or CTZ
Daylight Savings Time Observed (mid Mar. - early Nov.)? Yes / No
Waterbody Type: Small Lake (≥ 4 and < 10 hectares) Large Lake (≥ 10 hectares)
(Circle One) (collect samples in middle of open water) (collect samples at selected location point)
Stream Canal River
(collect samples in representative area) (collect samples in representative area) (collect samples in representative area)
Field Sheet Completed by: DB WQ Sample Collected by: KD

WATER CHARACTERISTICS

Total Water Depth: 1.0 (meters) Secchi Depth: 0.7 (meters) Stage: NA (feet)
(Average of 2 measurements) (from SHADED side) (if applicable)
Stream/River/Canal Flow: N/A No Flow Flow within Banks Flow Above Banks
(Circle One) (waterbody not stream / river / canal) (please comment if avg. velocity is < 0.05 m/s) (For Status sites, DO NOT sample if flooded above banks.)
Water Level: (Circle One) Low Normal High
Water Sample Collection Device: Direct Grab with Sample Bottle Van Dorn # of grabs Dipper Other
(Circle One) Equipment ID (if applicable):

FIELD MEASUREMENTS

FIELD MEASUREMENTS		Meter ID# 14			Read by: DB	
Time (24 hr.) 1215	Surface Depth Collected (meters) 0.3	Temperature (°C) 27.8	Specific Conductance (µmhos/cm) 96	D.O. (%) 21	D.O. (mg/L) 1.7	pH (SU) 5.8
Time (24 hr.) 1220 N/A	Bottom Depth Collected (meters)	Temperature (°C)	Specific Conductance (µmhos/cm)	D.O. (%)	D.O. (mg/L)	pH (SU)

PRESERVATION INFORMATION

☐ N/A (No samples collected; please state why in comments.)

Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? Yes / No
1 vial sulfuric acid added to nutrients sample(s)? Yes / No Sulfuric acid info: (circle one) Chem ID / Lot # 5259020
1 vial nitric acid added to metals sample(s)? Yes / No Nitric acid info: (circle one) Chem ID / Lot # 5259030
pH of all acidified samples verified to be < 2 ? Yes / No SCI samples preserved with buffered formalin? Yes / No / NA
All water & sediment samples placed in wet ice ($\leq 6^\circ\text{C}$)? Yes / No
(Please describe any variations to this preservation protocol in the comments section below.) Preserved By: KD

QA/QC SAMPLE INFORMATION

QA/QC Sample: N/A Field Blank Equipment Blank
(Circle One) (Field-cleaned) (Lab-cleaned)
Equipment Used: Time: 1315 (24 hr.)
Collected by: KD

Photos Taken? Yes / No / Not Due
(Required for all Status sites. Required annually for Trend sites.)

Fuel Powered Equipment Used? (e.g. boat motor) Yes No

Weather Conditions: Overcast

Personnel/Visitors On Site: Danny Buyer

Walter DePeth
Chase Conley



25-LR-10011

25LR1605 25-LR-10011



QA/QC BLANK SW 2

25LR1605

Station Name (Random ID for Status):

25-LR-1001A

Date:

6/6/16

SEDIMENT INFORMATION (for Lakes only)



N/A (Site not a lake or no samples collected. If no samples collected, please state why in comments.)

Collection Depth: _____ (meters)
(Total Water Depth)Collection Time: _____ (24 hr.)
(Different than surface and bottom time in Field Measurements section)

Collection Interval: (Circle)

Top 3-5 cm

Other: _____

(If top 3-5 is too flocculent) (cm)

General Sample Collection Area: _____

(Describe-- near shore, central, north side near dock, etc.)

Sample Collection Device: (Circle One)

Corer

Ekman

Petite Ponar

Equipment ID: _____

Sediment Type: (Circle All That Apply)

Clay/Silt

Sand

Gravel/Shell Rubble

*Organic Muck

*(very fine-grained flocculent organic material)

Sediment Odors: (Circle One)

Normal

Sewage

Petroleum

Hydrogen Sulfide

Other: _____

Sediment Color: _____

Number of Grabs Collected (3 minimum): _____

Collected by: _____

BIOASSESSMENT INFORMATION

Stream Condition Index Information (Appropriate Trend sites)

Was the SCI sample collected? Yes / No / Not Due / NA (not an appropriate Trend site)
(Circle One)Collection Time: _____ (24 hr.)
(Different than surface and bottom time in Field Measurements section)

If site was an appropriate Trend stream or river but "NO" was selected, why was the SCI not collected (flooded, < 0.05 m/s velocity, etc.)?

Collected by: _____

Habitat Assessment Information (All Status Streams, Rivers, & Canals; Trend sites appropriate for SCI)

Was the HA performed? (Circle One) Yes / No / Not Due / NA (site not a Status Stream/River/Canal or appropriate Trend site)

If site was a stream, river or canal but "NO" was selected, why was the HA not performed (dangerous site conditions, etc.)?

Performed by: _____

Rapid Periphyton Survey Information (Trend sites appropriate for SCI)

Was the RPS performed? (Circle One) Yes / No / Not Due / NA (not an appropriate Trend site)

ALGAL-ID sample collected? (circle one) Yes / No

If site was an appropriate Trend stream or river but "NO" was selected, why was the RPS not performed (dangerous site conditions, etc.)?

Performed by: _____

Linear Vegetation Survey Information (Trend sites appropriate for SCI) / Lake Vegetation Index Information (Status Lakes)

Was the LVS performed? (Circle One) Yes / No / Not Due / NA (not an appropriate Trend site)

Number of Plant ID specimens collected: _____

Was the LVI performed? (Circle One) Yes / No / Not Due (LVI performed previous year) / NA (not a Status Lake)

If site was an appropriate Trend stream or river but "NO" was selected, why was LVS not performed (< 2 m² aquatic vegetation, dangerous site conditions, etc.)?

If site was a Status Lake but "NO" was selected, why was LVI not performed (LVI will be performed at later date, dangerous site conditions, etc.)?

Performed by: _____

Comments: Include information such as: estimated level of impact to the system (ex. obvious pollution, etc.), any variations from normal preservation protocols (ex. adding more than 1 vial acid, etc.), any problems experienced with collecting samples (ex. sediment grab 1 lost due to fall-out, etc.), any site specifics (ex. dense submerged vegetation, etc.), any site conditions (ex. recent heavy rains, etc.), description of any photos taken, etc., any qualifiers needed (ex. "J" for failed calibration verification, etc.), etc.

Invasive Exotic Apple Snail eggs present:

Yes / No

(pink, clustered, small, numerous eggs)

Sampler Names: (PLEASE PRINT)

Chase Conley, Robert In, De Hest, Danny Beyer

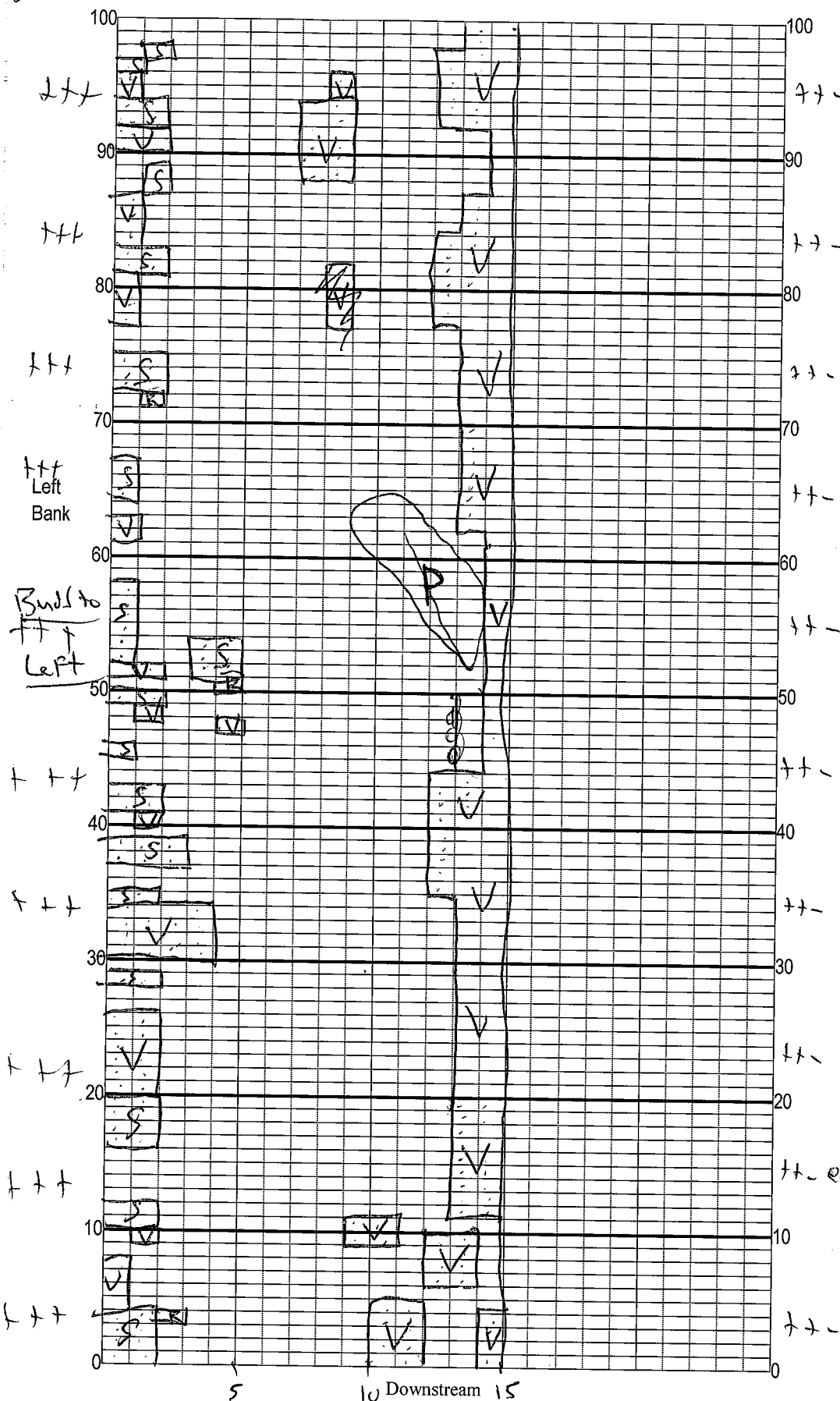
Sampler Signatures:

OFFICE USE ONLY

Reviewed for completion by: _____

Date: _____

BFSR



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

25-LR-10011

Location: Arbuckle Creek

Date: 6-6-16

Sampler: Danny Berger

100 m: Latitude 27.50580

Longitude -81.35297

0 m: Latitude 27.50513

Longitude -81.35262

Substrates: Code key, draw VB
proportionate habitat abundance. %

<u>S</u>	Snags	<u>4.6</u>
<u>R</u>	Roots/undercut banks	<u>0.2</u>
<u>L</u>	Leaf Packs (or mats)	<u>0</u>
<u>V</u>	Aquatic Macrophytes	<u>18.7</u>
<u>Ro</u>	Rocks	<u>0</u>
<u>P</u>	Pools	total # observed = <u>1</u> # range expected = <u>0-1</u>

Average width 15 m

Average depth 1.0 m

Velocity measured at 0 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+
Note areas (on map) where natural vegetation
is altered or eliminated.

Plants observed / other notes:

each Box = $1m^2$
 $S = 69/1500 = 4.6\%, 69m^2$
 $R = 3/1500 = 0.2\%, 3m^2$
 $L = 0/1500 = 0\%, 0m^2$
 $V = 281/1500 = 18.7\%, 281m^2$
 $Ro = 0/1500 = 0\%, 0m^2$

23.5%

~~4/13/2016~~ 6/6/16

Waterbody: Arbuckle Creek

Date: 6/16/16

County: Highlands

Analyst: Chase Conley

Signature _____

Field ID ▲
STORET ▼

Comments: ZS-LR-10011⁰ RQ-2016-0509-06

~~Whidden Creek~~
Arbuckle Creek

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]

Bioassessments
Entered 7/5/16 CA

Visit 76386
RPS 8159
Macrophyte 9871

FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

County: highlands

Investigators

Chase Conley, Danny Bry, Kaitlin

25-LR-10011

RQ-2016-05-09-06

STORET Station Number:

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	↑			60	1	↑		
	2	↑				2	↑		
	3	↑				3	↑		
	4	↑				4	↑		
	5	N		6		5	N		16
	6	↓				6	↓		
	7	↓				7	↓		
	8	↓				8	↓		
	9	↓				9	↓		
10	1	↑			70	1	↑		
	2	↑				2	↑		
	3	↑				3	↑		
	4	↑				4	↑		
	5	N		9		5	N		0
	6	↓				6	↓		
	7	↓				7	↓		
	8	↓				8	↓		
	9	↓				9	↓		
20	1	↑			80	1	↑		
	2	↑				2	↑		
	3	↑				3	↑		
	4	↑				4	↑		
	5	N		6		5	N		12
	6	↓				6	↓		
	7	↓				7	↓		
	8	↓				8	↓		
	9	↓				9	↓		
30	1	↑			90	1	↑		
	2	↑				2	↑		
	3	↑				3	↑		
	4	↑				4	↑		
	5	N		4		5	N		0
	6	↓				6	↓		
	7	↓				7	↓		
	8	↓				8	↓		
	9	↓				9	↓		
40	1	↑			100	1	↑		
	2	↑				2	↑		
	3	↑				3	↑		
	4	↑				4	↑		
	5	N		0		5	N		7
	6	↓				6	↓		
	7	↓				7	↓		
	8	↓				8	↓		
	9	↓				9	↓		
50	1	↑				1	↑		
	2	↑				2	↑		
	3	↑				3	↑		
	4	↑				4	↑		
	5	N		4		5	N		
	6	↓				6	↓		
	7	↓				7	↓		
	8	↓				8	↓		
	9	↓				9	↓		

Secchi depth 0.7
Estimated?

points ranked 4-6 0
total points assessed 20
% points ranked 4-6 0

Check accompanying data collected at same site/date.

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

RQ- 2016-05-09-06

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 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID see sticker upper right ORG ID 21FLFTM LATITUDE 27 30 18.98604
 STORET # see sticker upper right COUNTY Essex Highlands LONGITUDE 81 21 10.23696
 DATE see sticker upper right TIME 1215 SAMPLING AGENCY FDEP South ROC
 SITE NAME 25 LR 10010
 FIELD ID/NAME see sticker upper right RECEIVING BODY OF WATER Lake Istokpoga

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>35</u> Silviculture <u>0</u> Field/Pasture <u>45</u> Agricultural <u>20</u> Residential <u>0</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</u>								Landscape Development Intensity Index (LDI) <u>0</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>15</u> m wide <u>0.2</u> m/s <u>0.2</u> m/s <u>0.2</u> m/s <u>0.9</u> m deep <u>1.0</u> m deep <u>0.9</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>0.3</u> + <u>1.0</u> = <u>1.3</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 <table border="1"> <thead> <tr> <th></th> <th>% Coverage</th> <th># Times Sampled</th> <th>PERI # Times Sampled</th> </tr> </thead> <tbody> <tr> <td>Woody Debris (Snags)</td> <td><u>4.6</u></td> <td></td> <td></td> </tr> <tr> <td>Undercut Banks / Roots</td> <td><u>0.2</u></td> <td></td> <td></td> </tr> <tr> <td>Leaf Packs or Mat</td> <td><u>0</u></td> <td></td> <td></td> </tr> <tr> <td>Aquatic Vegetation</td> <td><u>18.7</u></td> <td></td> <td></td> </tr> <tr> <td>Rock or Shell Rubble</td> <td><u>0</u></td> <td></td> <td></td> </tr> <tr> <td>Sand</td> <td><u>0</u></td> <td></td> <td></td> </tr> <tr> <td>Mud / Muck / Silt</td> <td><u>0</u></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td><u>0</u></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td><u>0</u></td> <td></td> <td></td> </tr> </tbody> </table>				% Coverage	# Times Sampled	PERI # Times Sampled	Woody Debris (Snags)	<u>4.6</u>			Undercut Banks / Roots	<u>0.2</u>			Leaf Packs or Mat	<u>0</u>			Aquatic Vegetation	<u>18.7</u>			Rock or Shell Rubble	<u>0</u>			Sand	<u>0</u>			Mud / Muck / Silt	<u>0</u>			Other	<u>0</u>			Other	<u>0</u>			WATER QUALITY <table border="1"> <thead> <tr> <th></th> <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><u>0.3</u></td> <td><u>27.8</u></td> <td><u>5.8</u></td> <td><u>1.7</u></td> <td><u>21</u></td> <td><u>96</u></td> <td><u>0.7</u></td> <td><u>0.7</u></td> </tr> <tr> <td>Mid</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bottom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Meter ID: <u>A</u>				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>27.8</u>	<u>5.8</u>	<u>1.7</u>	<u>21</u>	<u>96</u>	<u>0.7</u>	<u>0.7</u>	Mid									Bottom								
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Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>5259020</u> Exp: <u>9-16-16</u>			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐																																																																														
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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) ☐																																																					
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SAMPLING TEAM <u>DB, CC, KO</u>			SIGNATURE: <u>[Signature]</u>		DATE: <u>6-6-16</u>																																																																												

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

SAMPLING AGENCY: FDEP South ROC		STORET STATION NUMBER:	DATE (MM/DD/YY): 06/06/16	PUT STICKER UP ^ HERE
RECEIVING BODY OF WATER: Lake Estabpoga	COUNTY: Highlands	LOCATION: Arbuckle Creek	FIELD ID/NAME: 25 LR 10010	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity <u>14</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 <u>14</u> 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>13</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 <u>13</u> 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>14</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 <u>14</u> 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>19</u> Primary Score <u>60</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 <u>19</u> 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>	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. <u>20</u> 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>7</u> Left Bank <u>10</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. <u>10</u> 9	Only meets 2 of the 3 requirements for optimal bank stability. 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>10</u> Left Bank <u>10</u>	Width of vegetation greater than 18 m <u>LR</u> <u>10</u> 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 <u>6</u> Left Bank <u>8</u> Secondary Score <u>71</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>8</u> 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

131**TOTAL SCORE**

Date: 6-6-16	Analyst: DB Dany Buge	Signature: Dany Buge
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