

# Panther Creek upstream John Riley Barnhill Road



## FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / ☒ No

WIN Station Name: Panther Cr Jhn Riley Barnhill Rd OKA.CO.SECT.11 Date: 03/06/2019  
(mm/dd/yyyy)

WIN/ Field ID: G4NW0296 WBID: 27 Latitude: 30.868858  
(Decimal Degrees)

County: Okaloosa ORG ID: 21FLPNS Longitude: -86.707533  
(Decimal Degrees)

Receiving Body of Water: Blackwater River RQ-2019- 02-18-17

|                       |                 |                                     |                                     |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|-----------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sampling Team Members | WQ Measurements | Sample Collection                   | Documentation                       | Preservation                        | Preservation Check                  | <b>Sampling Equipment</b><br><input checked="" type="checkbox"/> Sample Container <input type="checkbox"/> Van Dorn <input type="checkbox"/> Pole<br><input type="checkbox"/> Carboy <input checked="" type="checkbox"/> Syringe<br><input type="checkbox"/> Dipper <input type="checkbox"/> Other<br>Depth Measured with <u>PRO-DSS 45F</u><br>Equipment ID <u>155077</u><br><b>Collection Method</b><br><input checked="" type="checkbox"/> Wading <input type="checkbox"/> Canoe/Kayak<br><input type="checkbox"/> From Shore <input type="checkbox"/> Electric Motor<br><input type="checkbox"/> Other <input type="checkbox"/> Gasoline Motor |
|                       | Frank Butera    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                       | Alicia Hogue    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

Water Level: Dry/ Pooled/ Low / Normal High Flooded Meter ID# 155077 Matrix: Fresh Marine/ DI

Photos: ☒ Yes No Flow: No Flow / Intestinal / 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 (umhos/cm) | Temp. (C°) |
|-----------|-------|-----------------|------------------|-----------------|-----------|-----------|------|-----------------|--------------------|------------|
| EST       | 10:25 | 0.4             | 0.3              | 0.4             | 10.01     | 90.2      | 4.62 | 19.2            | 0.01               | 11.4       |
| CEN       |       |                 |                  | "S"             |           |           |      |                 |                    |            |

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

SBIO ID Numbers: SBIO-ID: 79224 HA-ID: 15666 RPS-ID: 9250 Macrophyte-ID: N/A LIMS#:

| Parameter Suite             | Parameter Methods                                                                                                                                                                                                                                            | Preservation                                                           | Lot#      | Expiration | pH Check                               |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------|------------|----------------------------------------|
| Preserved Nutrients         | <input checked="" type="checkbox"/> W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP                                                                                                                                                                              | <input checked="" type="checkbox"/> Ice <input type="checkbox"/> H2SO4 | SA8197090 | 07/16/2019 | <input checked="" type="checkbox"/> <2 |
| Metals                      | <input checked="" type="checkbox"/> W-ICPMS <input checked="" type="checkbox"/> W-ICP                                                                                                                                                                        | <input checked="" type="checkbox"/> Ice <input type="checkbox"/> HNO3  | NA8344050 | 12/10/2019 | <input checked="" type="checkbox"/> <2 |
| Filtered Nutrients          | <input checked="" type="checkbox"/> W-PO4-F <input type="checkbox"/> Field Filtered 0.45 um Filter                                                                                                                                                           | <input checked="" type="checkbox"/> Ice                                | 16570048  |            |                                        |
| Chlorophyll                 | <input checked="" type="checkbox"/> CHLSUITE-W                                                                                                                                                                                                               | <input checked="" type="checkbox"/> Ice                                |           |            |                                        |
| Physical/Aggregate (Fresh)  | <input checked="" type="checkbox"/> Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS                                                                                                                                              | <input checked="" type="checkbox"/> Ice                                |           |            |                                        |
| Physical/Aggregate (Marine) | <input type="checkbox"/> Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY                                                                                                                                                                                      | <input type="checkbox"/> Ice                                           |           |            |                                        |
| Macroinvertebrates          | <input checked="" type="checkbox"/> W-FW-QLDC                                                                                                                                                                                                                | <input checked="" type="checkbox"/> Formalin                           |           |            |                                        |
| Periphyton                  | <input type="checkbox"/> ALGAE-ID                                                                                                                                                                                                                            | <input type="checkbox"/> Ice                                           |           |            |                                        |
| Microbiology                | <input checked="" type="checkbox"/> E Coli <input type="checkbox"/> F Coli <input type="checkbox"/> Enterococci                                                                                                                                              | <input checked="" type="checkbox"/> Ice                                |           |            |                                        |
| Molecular                   | <input checked="" type="checkbox"/> PCR-FILTER <input type="checkbox"/> PCR-BacR <input checked="" type="checkbox"/> PCR-GULL2<br><input checked="" type="checkbox"/> PCR-HF183 <input type="checkbox"/> PCR-DG3 <input checked="" type="checkbox"/> PCR-GFD | <input checked="" type="checkbox"/> Ice                                |           |            |                                        |
| Tracers                     | <input checked="" type="checkbox"/> W-E8321-DI <input checked="" type="checkbox"/> W-E8321-MS                                                                                                                                                                | <input checked="" type="checkbox"/> Ice                                |           |            |                                        |
| Pesticides                  | <input checked="" type="checkbox"/> W-PSNP-TQ <input type="checkbox"/> W-CT-CL-R <input type="checkbox"/> W-E8321-DI<br><input type="checkbox"/> W-PCL-SQ-R <input type="checkbox"/> WE8321-MS <input type="checkbox"/> W-CARB-AA                            | <input type="checkbox"/> Ice                                           |           |            |                                        |
| Phytoplankton               | <input type="checkbox"/> DTY-QN-C <input type="checkbox"/> PKD-QN-C                                                                                                                                                                                          |                                                                        |           |            |                                        |

Notes: Project. EcoRegRegStreams.  
Insufficient vegetation (<2m<sup>2</sup>)  
NO WQS conducted.

Field/WIN ID G4NW0296  
Location: Panther Cr Jhn Riley Barnhill Rd OKA.CO.SECT.11

Signature: [Signature] Date: 03/06/2019

LIMS EVENT ID: \_\_\_\_\_ WIN Import ID: \_\_\_\_\_  
Enter Field Parameters, Verify Station ID In LIMS DMT: \_\_\_\_\_ QC Station ID, Field Parameters In LIMS DMT: \_\_\_\_\_  
Scan/Save Field Sheets FB 3/7/19 Migrate Data to WIN: \_\_\_\_\_ Verify Data In WIN: \_\_\_\_\_  
(Initials/Date) (Initials/Date) (Initials/Date) (Initials/Date)

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

SAMPLE ID 79244 ORG ID 21FLPNS LATITUDE 30.868858  
COUNTY Okaloosa WIN ID/STORET # G4NW0296 LONGITUDE -86.707533  
DATE 03/06/2019 TIME 10:25 CTZ  SAMPLING AGENCY FL DEP - NWROC  
SITE NAME Panther Cr Jhn Riley Barnhill Rd OKA.CO.SECT.11 RQ-2019-02-18-17  
FIELD ID/NAME G4NW0296 RECEIVING BODY OF WATER Yellow River WBID 27 Project EcoRegRef Streams & SMP

## RIPARIAN ZONE / STREAM FEATURES

LIMS ID:

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):

Forest/Natural ☒ Silviculture ☒ Field/Pasture ☐ Agricultural ☒ Residential ☒ Commercial ☒ Industry ☐ Other (Specify) ☐

Landscape Development Intensity Index (LDI)

1.21 (1996) \*

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: 718 Right Bank: 718

Hydrologic Modification Score (per FT 3101)

1-2

High Water Mark: 2.1 + 71.5 = 73.6  
(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 %

91%

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

10 m 8 m wide

1.25 m/s 1.25 m/s 1.33 m/s  
4 sec
0.7 m deep 0.8 m deep 7 m deep

## 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

% Coverage INVERT PERI  
# Times Sampled # Times Sampled

Woody Debris (Snags) 6.5 5  
Undercut Banks / Roots 1.3 5  
Leaf Packs or Mat ..... 0.3 5  
Aquatic Vegetation ..... 0.2 3  
Rock or Shell Rubble..    
Sand..... 91.9 2  
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 11.4 4.62 10.01 90.2 0.0125 19.2 0.4

Mid:      19.2 0.01 VOB

Bottom:        

Meter ID: 150 155077 43 0.4

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: SA8197090 Exp: 7/16/2019

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:

Insufficient vegetation - NO LVS continued.  
Replaces station 33030042

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

SAMPLING TEAM: Frank Butera, Alicia Hogue

SIGNATURE:

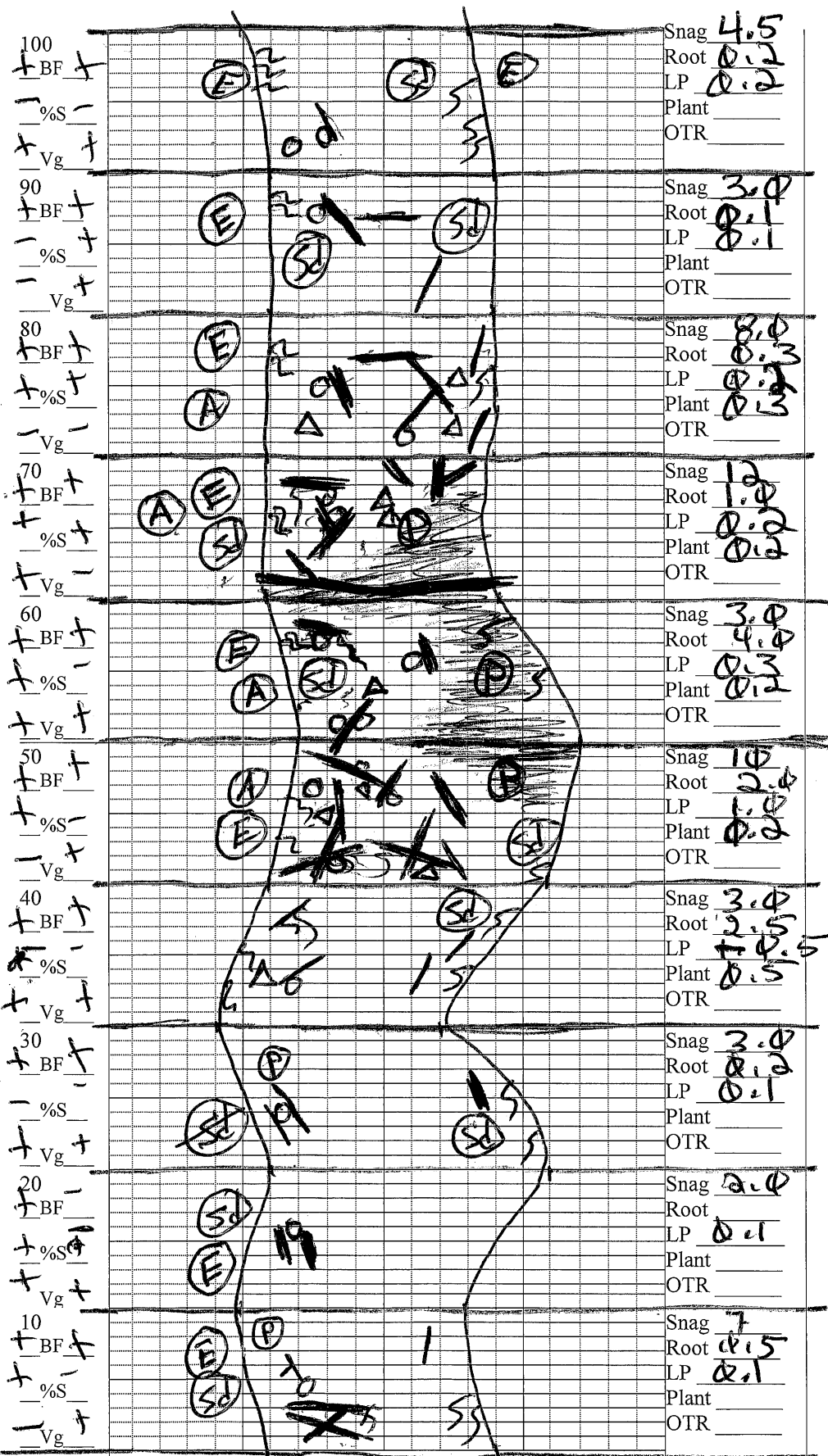
Frank Butera

DATE:

03/06/2019

Stream/River Habitat Sketch Sheet, Form FD 9000-4 (June 1, 2001)

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



Substrates: Code key, draw proportionate habitat abundance.

- ☒ Snags
- ☒ Roots/undercut banks
- ☒ Leaf Packs (or mats)
- ☒ Macrophytes
- ☒ Too Deep
- ☒ P = Pool S = Sand L = Leaf
- ☒ A = Algae E = Ending

Velocity: 0.33 m/s  
Note where velocity 20 dm measures were taken. 10 m

Habitat Smothering:  
Note areas (on map) where sand or silt is something 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.

Average width 0.5 m  
Average depth 0.6 m  
WQ & chemistry taken @ 0 m

Panther Ck Jhn Riley Rd

Storet. G4NW0296

Date: 03/06/2019

Sampled By: A. Hogue

SR10 ID 79244

| 0-10 meter [A]  | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 7                | Bankfull  | Bankfull   |
| 0m width (m) 8  | Root 0.5              | +         | +          |
| 10m width 8     | Leaf 0.1              | Slope +   | Slope -    |
| Avg. Depth 0.5  | Veg                   |           |            |
| Max Depth 1.1   | Gravel                | Veg -     | Veg +      |
| Rip. Buff L 718 | Rock                  |           | +          |
| Rip. Buff R 718 | Other (E) (S) (P) (A) |           |            |

| 10-20 meter [B] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 2.0              | Bankfull  | Bankfull   |
| 20m width 8.0   | Root 0.1              | +         | +          |
|                 | Leaf 0.1              | Slope +   | Slope -    |
| Avg. Depth 0.5  | Veg                   |           |            |
| Max Depth 1.0   | Gravel                | Veg +     | Veg +      |
| Rip. Buff L 718 | Rock                  |           | +          |
| Rip. Buff R 718 | Other (E) (S) (P) (A) |           |            |

| 20-30 meter [C] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 3.0              | Bankfull  | Bankfull   |
| 30m width 8.0   | Root 0.3              | +         | +          |
|                 | Leaf 0.1              | Slope -   | Slope -    |
| Avg. Depth 0.6  | Veg                   |           |            |
| Max Depth 1.0   | Gravel                | Veg +     | Veg +      |
| Rip. Buff L     | Rock                  |           | +          |
| Rip. Buff R     | Other (P) (S) (P) (A) |           |            |

| 30-40 meter [D] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 3                | Bankfull  | Bankfull   |
| 40m width 8.0   | Root 2.5              | +         | +          |
|                 | Leaf 1.0              | Slope -   | Slope -    |
| Avg. Depth 0.6  | Veg 0.5               |           |            |
| Max Depth 1.0   | Gravel                | Veg +     | Veg +      |
| Rip. Buff L 718 | Rock                  |           | +          |
| Rip. Buff R 718 | Other (E) (S) (P) (A) |           |            |

| 40 - 50 meter [E] | Habitat Area (M)      | Left Bank | Right Bank |
|-------------------|-----------------------|-----------|------------|
|                   | Snag 10               | Bankfull  | Bankfull   |
| 50m width 8.0     | Root 2                | +         | +          |
|                   | Leaf 1.0              | Slope +   | Slope -    |
| Avg. Depth 0.6    | Veg 0.2               |           |            |
| Max Depth 71.5    | Gravel                | Veg -     | Veg +      |
| Rip. Buff L 718   | Rock                  |           | +          |
| Rip. Buff R 718   | Other (E) (S) (P) (A) |           |            |

| 50-60 meter [F] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 2.0              | Bankfull  | Bankfull   |
| 60m width 10.0  | Root 4.0              | +         | +          |
|                 | Leaf 1.3              | Slope +   | Slope +    |
| Avg. Depth 0.6  | Veg 1.2               |           |            |
| Max Depth 71.5  | Gravel                | Veg +     | Veg +      |
| Rip. Buff L     | Rock                  |           | +          |
| Rip. Buff R     | Other (E) (P) (S) (A) |           |            |

| 60-70 meter [G] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 12               | Bankfull  | Bankfull   |
| 70m width 8.0   | Root 1.0              | +         | +          |
|                 | Leaf 0.2              | Slope +   | Slope +    |
| Avg. Depth 0.7  | Veg 0.2               |           |            |
| Max Depth 71.5  | Gravel                | Veg +     | Veg -      |
| Rip. Buff L 718 | Rock                  |           | +          |
| Rip. Buff R 718 | Other (E) (P) (S) (A) |           |            |

| 70-80 meter [H] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 8                | Bankfull  | Bankfull   |
| 80m width 8.0   | Root 0.3              | +         | +          |
|                 | Leaf 0.2              | Slope +   | Slope +    |
| Avg. Depth 0.6  | Veg 0.3               |           |            |
| Max Depth 1.8   | Gravel                | Veg -     | Veg +      |
| Rip. Buff L 718 | Rock                  |           | +          |
| Rip. Buff R 718 | Other (E) (S) (P) (A) |           |            |

| 80-90 meter [I] | Habitat Area (M)      | Left Bank | Right Bank |
|-----------------|-----------------------|-----------|------------|
|                 | Snag 3.0              | Bankfull  | Bankfull   |
| 90m width 8.0   | Root 0.1              | +         | +          |
|                 | Leaf 0.1              | Slope -   | Slope +    |
| Avg. Depth 0.7  | Veg                   |           |            |
| Max Depth 71.0  | Gravel                | Veg -     | Veg +      |
| Rip. Buff L     | Rock                  |           | +          |
| Rip. Buff R     | Other (E) (S) (P) (A) |           |            |

| 90 - 100 meter [J] | Habitat Area (M)      | Left Bank | Right Bank |
|--------------------|-----------------------|-----------|------------|
|                    | Snag 4.5              | Bankfull  | Bankfull   |
| 100m width 9.0     | Root 0.2              | +         | +          |
|                    | Leaf 0.2              | Slope -   | Slope -    |
| Avg. Depth 0.6     | Veg                   |           |            |
| Max Depth 1.1      | Gravel                | Veg +     | Veg +      |
| Rip. Buff L 718    | Rock                  |           | +          |
| Rip. Buff R 718    | Other (E) (S) (P) (A) |           |            |

Panther Cr Jhn Riley Barnhill Rd

Storet: G4NW0296

Date 3/6/19

0 meter (Dec Deg)

30.86886

86.74760

100 meter (Dec Deg)

30.86938

86.74667

Water Quality Measured at 0m

Stream Velocity and location.

33 m/s 24 meter mark

Number of Pools & Location 3 E-G

High Water: 2.1

Silt smothering @

NA

Sand Smothering @

A-J

Algae Smothering @

B, C, H

E, F, G, H, J

Degraded Banks @ A, B, E-J

Fe/Sulfur Bact. @ NA

| Total Habitat  | Sq. Meters | Percent |
|----------------|------------|---------|
| Snags          | 55.5       | 6.5     |
| Roots          | 10.8       | 1.3     |
| Leaf           | 2.8        | 0.3     |
| Veg            | 1.5        | 0.2     |
| Rock           |            |         |
| Gravel         |            |         |
| Sand           | 780.9      | 91.9    |
| Other          |            |         |
| Sum 1° Habitat |            | 8.3     |

| Avg. Depth | Max. Depth | Avg. Width |
|------------|------------|------------|
| 0.6        | 71.5       | 8.5        |

Notes: SB10 TD 79224, Bank stability: left + 2.3 at 2.3

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

|                             |                  |                                                              |                                |                                              |
|-----------------------------|------------------|--------------------------------------------------------------|--------------------------------|----------------------------------------------|
| SAMPLING AGENCY:<br>21FLPNS |                  | STORET STATION NUMBER:<br>G4NW0296                           | DATE (MM/DD/YY):<br>03/06/2019 | RECEIVING BODY OF WATER:<br>Blackwater River |
| REMARKS:<br>WBID 27         | COUNTY: Okaloosa | LOCATION: Panther Cr Jhn Riley Barnhill Rd<br>OKA.CO.SECT.11 |                                | FIELD ID/NAME: G4NW0296                      |

| 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>12</u>                                                                                | 20 19 18 17 16                                                                                                                                                                                                            | 15 14 13 12 11                                                                                                                                                          | 10 9 8 7 6                                                                                                                                        | 5 4 3 2 1                                                                                                                                  |
| Substrate Availability <u>7</u>                                                                              | Greater than 30% major productive habitat present at site<br>20 19 18 17 16                                                                                                                                               | 16% to 30% major productive habitat, by aerial extent<br>15 14 13 12 11                                                                                                 | 6% to 15% major productive habitat<br>10 9 8 7 6                                                                                                  | Less than 5% major productive habitat<br>5 4 3 2 1                                                                                         |
| Water Velocity <u>20</u>                                                                                     | Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec<br>≥0.33 0.31 0.29 0.27 >0.25<br><u>20</u> 19 18 17 16                                                                                                     | Max. observed at typical transect: >0.1 to 0.25 m/sec<br>0.25 0.21 0.17 0.13 >0.1<br>15 14 13 12 11                                                                     | Max. observed at typical transect: 0.05 to 0.1 m/sec<br>0.1 0.09 0.07 0.06 0.05<br>10 9 8 7 6                                                     | Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec<br><0.05 0.04 0.03 0.01 <0.01<br>5 4 3 2 1                   |
| Habitat Smothering <u>15 14</u><br>-----<br>Primary Score <u>53</u>                                          | Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae.<br>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.<br><u>15</u> 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).<br>10 9 8 7 6                | Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation.<br>5 4 3 2 1                                         |
| Secondary Habitat Components<br>Artificial Channelization <u>16</u>                                          | Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.<br>20 19 18 17 <u>16</u>                                                                                  | Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.<br>15 14 13 12 11                                          | Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.<br>10 9 8 7 6                 | Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.<br>5 4 3 2 1 |
| Bank Stability<br>Right Bank <u>7 7</u><br>Left Bank                                                         | 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.<br>10 9                                                            | Only meets 2 of the 3 requirements for optimal bank stability.<br>8 7 6                                                                                                 | Only meets 1 of the 3 requirements for optimal bank stability.<br>5 4                                                                             | Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.<br>3 2 1                       |
| Riparian Buffer Zone Width<br>Right Bank <u>14</u><br>Left Bank <u>14</u>                                    | Width of vegetation greater than 18 m<br>10 9                                                                                                                                                                             | Width of vegetation >12 to 18m<br>8 7 6                                                                                                                                 | Width of vegetation 6 to 12 m. human activities close to system<br>5 4                                                                            | Less than 6 m of buffer zone due to intensive human activities<br>3 2 1                                                                    |
| Riparian Zone Vegetation Quality<br>Right Bank <u>9 9</u><br>Left Bank<br>-----<br>Secondary Score <u>68</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.<br>10 9 | >50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.<br>8 7 6 | 25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.<br>5 4 | Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).<br>3 2 1         |

121 TOTAL SCORE 1566 HA ID 15666

|                  |                              |            |
|------------------|------------------------------|------------|
| Date: 03/06/2019 | Analyst: F. Butera, A. Hogue | Signature: |
|------------------|------------------------------|------------|

# DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Panther Cr Jhn Riley Barnhill Rd  
OKA.CO.SECT.11

County: Okaloosa

Date: 03/06/19

Investigators: F. Butera, A. Hogue

| Transect (m) | Point<br>1=right<br>9=left | Algal Thickness Rank<br>(N-6, X) | Estimated | Canopy Cover | Transect (m) | Point<br>1=right<br>9=left | Algal Thickness Rank<br>(N-6, X) | Estimated | Canopy Cover |
|--------------|----------------------------|----------------------------------|-----------|--------------|--------------|----------------------------|----------------------------------|-----------|--------------|
| 0            | 1                          | N                                | N         | 92           | 60           | 1                          | N                                | N         |              |
|              | 2                          |                                  |           |              |              |                            |                                  |           |              |
|              | 3                          |                                  |           |              |              |                            |                                  |           |              |
|              | 4                          |                                  |           |              |              |                            |                                  |           |              |
|              | 5                          |                                  |           |              |              |                            |                                  |           |              |
|              | 6                          |                                  |           |              |              |                            |                                  |           |              |
|              | 7                          |                                  |           |              |              |                            |                                  |           |              |
|              | 8                          |                                  |           |              |              |                            |                                  |           |              |
|              | 9                          |                                  |           |              |              |                            |                                  |           |              |
| 10           | 1                          | N                                | N         | 91           | 70           | 1                          | N                                | N         |              |
|              | 2                          |                                  |           |              |              |                            |                                  |           |              |
|              | 3                          |                                  |           |              |              |                            |                                  |           |              |
|              | 4                          |                                  |           |              |              |                            |                                  |           |              |
|              | 5                          |                                  |           |              |              |                            |                                  |           |              |
|              | 6                          |                                  |           |              |              |                            |                                  |           |              |
|              | 7                          |                                  |           |              |              |                            |                                  |           |              |
|              | 8                          |                                  |           |              |              |                            |                                  |           |              |
|              | 9                          |                                  |           |              |              |                            |                                  |           |              |
| 20           | 1                          | N                                | N         | 96           | 80           | 1                          | N                                | N         |              |
|              | 2                          |                                  |           |              |              |                            |                                  |           |              |
|              | 3                          |                                  |           |              |              |                            |                                  |           |              |
|              | 4                          |                                  |           |              |              |                            |                                  |           |              |
|              | 5                          |                                  |           |              |              |                            |                                  |           |              |
|              | 6                          |                                  |           |              |              |                            |                                  |           |              |
|              | 7                          |                                  |           |              |              |                            |                                  |           |              |
|              | 8                          |                                  |           |              |              |                            |                                  |           |              |
|              | 9                          |                                  |           |              |              |                            |                                  |           |              |
| 30           | 1                          | N                                | N         | 50           | 90           | 1                          | N                                | N         |              |
|              | 2                          |                                  |           |              |              |                            |                                  |           |              |
|              | 3                          |                                  |           |              |              |                            |                                  |           |              |
|              | 4                          |                                  |           |              |              |                            |                                  |           |              |
|              | 5                          |                                  |           |              |              |                            |                                  |           |              |
|              | 6                          |                                  |           |              |              |                            |                                  |           |              |
|              | 7                          |                                  |           |              |              |                            |                                  |           |              |
|              | 8                          |                                  |           |              |              |                            |                                  |           |              |
|              | 9                          |                                  |           |              |              |                            |                                  |           |              |
| 40           | 1                          | N                                | N         | 82           | 100          | 1                          | N                                | N         |              |
|              | 2                          |                                  |           |              |              |                            |                                  |           |              |
|              | 3                          |                                  |           |              |              |                            |                                  |           |              |
|              | 4                          |                                  |           |              |              |                            |                                  |           |              |
|              | 5                          |                                  |           |              |              |                            |                                  |           |              |
|              | 6                          |                                  |           |              |              |                            |                                  |           |              |
|              | 7                          |                                  |           |              |              |                            |                                  |           |              |
|              | 8                          |                                  |           |              |              |                            |                                  |           |              |
|              | 9                          |                                  |           |              |              |                            |                                  |           |              |
| 50           | 1                          | N                                | N         | 74           |              | 1                          | N                                | N         |              |
|              | 2                          |                                  |           |              |              |                            |                                  |           |              |
|              | 3                          |                                  |           |              |              |                            |                                  |           |              |
|              | 4                          |                                  |           |              |              |                            |                                  |           |              |
|              | 5                          |                                  |           |              |              |                            |                                  |           |              |
|              | 6                          |                                  |           |              |              |                            |                                  |           |              |
|              | 7                          |                                  |           |              |              |                            |                                  |           |              |
|              | 8                          |                                  |           |              |              |                            |                                  |           |              |
|              | 9                          |                                  |           |              |              |                            |                                  |           |              |

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%.

STORET Station Number:  
G4NW0298

Field ID. G4NW0296

Secchi depth "5" 0.5  
Estimated? NO

# points ranked 4-6 0  
total points assessed 86  
% 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- 2019-02-18-18

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                                  |

RPS ID 9250

VPDB ID N/A

SBIO ID. 79244

| DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET                                                                                                                                                                                                                                                                                                                   |  |            |       |       |       |       |       |       |       |                        |        |                                      |                    |  |                  |       |       |       |       |                         |       |       |       |        |                                      |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|-------|-------|-------|-------|-------|-------|-------|------------------------|--------|--------------------------------------|--------------------|--|------------------|-------|-------|-------|-------|-------------------------|-------|-------|-------|--------|--------------------------------------|--|
| Waterbody: Panther Cr Jhn Riley Barnhill Rd OKA.CO.SECT.11                                                                                                                                                                                                                                                                                                                  |  |            |       |       |       |       |       |       |       | Date:                  |        |                                      |                    |  | County: Okaloosa |       |       |       |       | Storet Number: G4NW0296 |       |       |       |        |                                      |  |
| Analyst: F. Butera                                                                                                                                                                                                                                                                                                                                                          |  |            |       |       |       |       |       |       |       | Signature: [Signature] |        |                                      |                    |  |                  |       |       |       |       |                         |       |       |       |        |                                      |  |
| Comments: Insufficient Veg. (<2m) LVS NOT Conducted                                                                                                                                                                                                                                                                                                                         |  |            |       |       |       |       |       |       |       |                        |        |                                      |                    |  |                  |       |       |       |       |                         |       |       |       |        |                                      |  |
| Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m <sup>2</sup> 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 |       |       |       |       |       |       |       |                        |        | Specime<br>n<br>collected<br>(check) | HERBACEOUS SPECIES |  | Meter Mark       |       |       |       |       |                         |       |       |       |        | Specime<br>n<br>collected<br>(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 monneri                                                                                                                                                                                                                                                                                                                                                              |  |            |       |       |       |       |       |       |       |                        |        | 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                                                                                                                                                                                                                                                                                                                                                          |  |            |       |       |       |       |       |       |       |                        |        |                                      |                    |  |                  |       |       |       |       |                         |       |       |       |        |                                      |  |
| Ludwigia repens                                                                                                                                                                                                                                                                                                                                                             |  |            |       |       |       | </    |       |       |       |                        |        |                                      |                    |  |                  |       |       |       |       |                         |       |       |       |        |                                      |  |

Revision Date: March 1, 2014  
62-160.800, F.A.C.