RQ-2019-06-10-34

Field Personnel processing steps

☐ New Field IDs created (when using a new station) Date: _____ initials: _____ ☒ NA

☐ Create entry in SMPStationCreationFile if new station is used

\\Fldep1\wqap\NW ROC\TMDL\WIN_Station Creation

☑ Date sampled Date: 06/19/2019 initials: FB

☐ Update MAT Date: _____ initials: _____

☑ Update "SMP Tracker" Date: 06/19/2019 initials: NM

☐ Photos put into archive Date: _____ initials: _____ ☒ NA

☑ RQ Sheet – from LIMS (display/print request)

☑ Field Sheets initialed/dated @ "Scan/Save Field Sheets" then scanned (with calibration logs) and saved into:

Scans_ToBeProcessed Date: 6/24/2019 initials: FB

☑ Update "Data Tracker"

\\publicfiles\pubfds\DEAR\WQAPmonitoring\StrategicMonitoring\2019\21FLPNS

Ready for folder system (top)

LIMS processing (to be completed by LIMS data personnel) (MC)

☐ Field parameters entered into LIMS Date: _____ initials: _____

☐ Digital RQ packet put into

SMP 2019/Data/Scanned Field Sheets Date: _____ initials: _____

☐ Digital field Sheets put into archive Date: _____ initials: _____

☐ Date submitted for QA/QC Date: _____ initials: _____

☐ Update "Data Tracker"

Database processing (Cheryl)

☐ Field parameters QA/QC in LIMS Date: _____ initials: _____

☐ Lab results put into archive (CB) Date: _____ initials: _____

☐ Data migrated to WINS Date: _____ initials: _____

☐ Update "Data Tracker"

Notes: Biology at 2 sites (G4NW0420, G4NW0421)

RQ-2019-06-10-34

Date of Request: 21-MAY-2019
Created By: KING_M On: 21-MAY-2019
Modified By: JASROTIA_P On: 22-MAY-2019
Customer: NW-DIST
Project: SMP
Division: Division of Environmental Assessment and Restoration
District: Northwest District NWROC
Sampling Event: SMP Bioassessment

Send Coolers To:

Phone: 850-595-0605
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Michael King

Send Final Report To:

160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

Program Module Number:
Priority: 3
Event Status: R
Criminal Investigation: NO
Chemistry Request Reviewed By: WATTS_J On: 22-MAY-2019
Biology Request Reviewed By: JASROTIA_P On: 22-MAY-2019
Sampling Kit Required: NO Ship on:
Sampling Kit Shipped:
Sampling Kit Packed By:
Preservatives Needed: NO
Date to Receive Samples: 10-JUN-2019
Received By: SHAIK_A On: 20-JUN-2019

Report Type: Final Only
FTP Data: NO
QC Report: YES
Date Log: NO
Authorization Log: NO

Comments: Group A: (WBID 18A, 356) Nutrients, Metals, Tracers, Q-PSNP-TQ

Group B: SCI, Algae_ID

Group C: (WBID 11) Nutrients, Metals, Tracers, Full Pesticides

Packing notes:
Please send labels

Bottle Group A (Water) With 2 Samples:

Bottle Type: P-1L Number of Bottles: 2 Preserved With: ICE

ALKALINITY Total Alkalinity	Template: DEFAULT	(SM 2320 B-97) Alkalinity in aqueous matrices as mg CaCO3/L
TURBIDITY Turbidity	Template: DEFAULT	(EPA 180.1 Rev. 2.0) Turbidity in aqueous matrices
W-CL-IC Chloride	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Chloride in aqueous matrices
W-COLOR Color (true)	Template: DEFAULT	(SM 2120 B) True Color measured at 450 nm
W-F Fluoride	Template: DEFAULT	(SM 4500 F-C-97) Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
W-SO4-IC Sulfate	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Sulfate in aqueous matrices
W-TDS TDS	Template: DEFAULT	(SM 2540 C-97) Total Dissolved Solids in aqueous matrices
W-TSS TSS	Template: DEFAULT	(SM 2540 D-97) Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample

Bottle Type: BP-1L Number of Bottles: 2 Preserved With: ICE

CHLSUITE-W Chlorophyll-a, Corrected	Template: DEFAULT	(SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry

Bottle Group A (Water) With 2 Samples:

Bottle Type: BP-1L Number of Bottles: 2 Preserved With: ICE

CHLSUITE-W Template: DEFAULT (SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry

- Chlorophyll-a, Uncorrected
- Phaeophytin-a

Bottle Type: TEST HAS NO Number of Bottles: 2 Preserved With: ICE

NW-UWF-ECQ Template: DEFAULT (SM 9223 B Quanti-Tray) E. coli by Colilert-18/QT by UWF in Pensacola

- Escherichia Coli-Quanti-Tray

Bottle Type: BG-500ML Number of Bottles: 2 Preserved With: ICE

W-E8321-DI Template: DEFAULT (EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

- *Acesulfame K
- *AMPA
- *Endothall
- *Glufosinate
- *Glyphosate
- *Sucralose

W-E8321-MS Template: (EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

- *Acetaminophen
- *Carbamazepine
- *Fluridone
- *Hydrocodone
- *Ibuprofen
- *Imazapyr
- *Naproxen
- *Primidone
- *Pyraclostrobin
- *Triclopyr
- 2,4-D
- Bentazon
- Diuron
- Fenuron
- Imidacloprid
- Linuron
- MCPP

Bottle Type: P-500ML Number of Bottles: 2 Preserved With: HNO3

W-ICP Template: (EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

- Barium
- Calcium
- Iron
- Magnesium
- Potassium
- Sodium
- Zinc

W-ICPMS Template: (EPA 200.8 Rev. 5.4) Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

- *Boron
- Aluminum
- Antimony
- Arsenic
- Cadmium
- Chromium
- Copper
- Lead
- Nickel
- Selenium
- Silver
- Thallium

Bottle Type: P-500ML Number of Bottles: 2 Preserved With: ICE And H2SO4

W-NH3 Template: DEFAULT (EPA 350.1 Rev. 2.0) Ammonia in aqueous matrices as mg N/L

- Ammonia-N

Bottle Group A (Water) With 2 Samples:

Bottle Type: P-500ML Number of Bottles: 2 Preserved With: ICE And H2SO4

- W-NO2NO3 Template: DEFAULT (EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L
  - NO2NO3-N
- W-S-A-TP Template: DEFAULT (EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L
  - Total-P
- W-TKN Template: DEFAULT (EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices
  - Kjeldahl Nitrogen
- W-TOC Template: DEFAULT (SM 5310 B-00) Nonpurgeable Organic Carbon in aqueous matrices
  - Organic Carbon

Bottle Type: P-125ML Number of Bottles: 2 Preserved With: FILTER-ICE

- W-PO4-F Template: DEFAULT (EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
  - O-Phosphate-P

Bottle Type: BG-1L Number of Bottles: 6 Preserved With: ICE

- W-PSNP-TQ Template: DEFAULT (EPA 8270E) Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS
  - *Dimethenamid
  - *Dithiopyr
  - *Fipronil Desulfinyl
  - *Oxadiazon
  - *Prodiamine
  - *Tebuconazole
  - Acetochlor
  - Alachlor
  - Ametryn
  - Atrazine
  - Atrazine Desethyl
  - Azinphos Methyl
  - Bromacil
  - Butylate
  - Chlorpyrifos Ethyl
  - Chlorpyrifos Methyl
  - Cyanazine
  - Demeton
  - Diazinon
  - Disulfoton
  - EPTC
  - Ethion
  - Ethoprop
  - Fenamiphos
  - Fipronil
  - Fipronil Sulfide
  - Fipronil Sulfone
  - Fonofos
  - Hexazinone
  - Malathion
  - Metalaxyl
  - Metolachlor
  - Metribuzin
  - Mevinphos
  - Molinate
  - Norflurazon
  - Parathion Ethyl
  - Parathion Methyl
  - Pendimethalin
  - Phorate
  - Prometon
  - Prometryn
  - Simazine
  - Terbufos
  - Terbuthylazine

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PJ-2L Number of Bottles: 6 Preserved With: Formalin

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PJ-2L Number of Bottles: 6 Preserved With: Formalin
- MI-FW-QLDC Template: DEFAULT (SOP-IZ06) No. Taxa of FW macroinverts, qual samp, 20 dipnets.
  - *Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2
  - *Stream Condition Index (SCI)

Bottle Type: PT-50ML Number of Bottles: 3 Preserved With: ICE
- ALGAL_ID Template: DEFAULT (SOP-AB05) Qualitative assessment of algal taxa present without counts
  - *Dominant sample taxon

Bottle Group C (Water) With 1 Samples:

Bottle Type: P-1L Number of Bottles: 1 Preserved With: ICE
- ALKALINITY Template: DEFAULT (SM 2320 B-97) Alkalinity in aqueous matrices as mg CaCO3/L
  - Total Alkalinity
- TURBIDITY Template: DEFAULT (EPA 180.1 Rev. 2.0) Turbidity in aqueous matrices
  - Turbidity
- W-CL-IC Template: DEFAULT (EPA 300.0 Rev. 2.1) Chloride in aqueous matrices
  - Chloride
- W-COLOR Template: DEFAULT (SM 2120 B) True Color measured at 450 nm
  - Color (true)
- W-F Template: DEFAULT (SM 4500 F-C-97) Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
  - Fluoride
- W-SO4-IC Template: DEFAULT (EPA 300.0 Rev. 2.1) Sulfate in aqueous matrices
  - Sulfate
- W-TDS Template: DEFAULT (SM 2540 C-97) Total Dissolved Solids in aqueous matrices
  - TDS
- W-TSS Template: DEFAULT (SM 2540 D-97) Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample
  - TSS

Bottle Type: BP-1L Number of Bottles: 1 Preserved With: ICE
- CHLSUITE-W Template: DEFAULT (SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry
  - Chlorophyll-a, Corrected
  - Chlorophyll-a, Uncorrected
  - Phaeophytin-a

Bottle Type: TEST HAS NO Number of Bottles: 1 Preserved With: ICE
- NW-UWF-ECQ Template: DEFAULT (SM 9223 B Quanti-Tray) E. coli by Colilert-18/QT by UWF in Pensacola
  - Escherichia Coli-Quanti-Tray

Bottle Type: BG-500ML Number of Bottles: 1 Preserved With: CH2ClCOOH Pre-Preserved
- W-CARB-AA Template: DEFAULT (EPA 8321B) Carbamates in water matrices by HPLC/MS/MS
  - 3-Hydroxycarbofuran
  - Aldicarb
  - Aldicarb Sulfone
  - Aldicarb Sulfoxide
  - Carbaryl
  - Carbofuran
  - Methiocarb
  - Methomyl
  - Oxamyl
  - Propoxur

Bottle Type: BG-500ML Number of Bottles: 4 Preserved With: ICE
- W-CT-CI-R Template: DEFAULT (EPA 8276) Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization
  - Chlordane
  - Toxaphene
- W-PCL-SQ-R Template: DEFAULT (EPA 8270E) Organochlorine pesticides in water matrices by GC/MS-SIM
  - *Bifenthrin
  - *Cis-Nonachlor
  - *Ethalfluralin
  - *Hexachlorobenzene
  - *Trans-Nonachlor
  - Aldrin
  - Alpha-BHC

Bottle Group C (Water) With 1 Samples:

Bottle Type: BG-500ML Number of Bottles: 4 Preserved With: ICE

W-PCL-SQ-R Template: DEFAULT (EPA 8270E) Organochlorine pesticides in water matrices by GC/MS-SIM

- Alpha-Chlordane
- Beta-BHC
- Carbophenothion
- Chlorothalonil
- Cypermethrin
- DDD-p,p'
- DDE-p,p'
- DDT-p,p'
- Delta-BHC
- Dicofol
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan Sulfate
- Endrin
- Endrin Aldehyde
- Endrin Ketone
- Gamma-BHC
- Gamma-Chlordane
- Heptachlor
- Heptachlor Epoxide
- Methoxychlor
- Mirex
- Permethrin
- Trifluralin

Bottle Type: BG-500ML Number of Bottles: 1 Preserved With: ICE

W-E8321-DI Template: DEFAULT (EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

- *Acesulfame K
- *AMPA
- *Endothall
- *Glufosinate
- *Glyphosate
- *Sucralose

W-E8321-MS Template: (EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

- *Acetaminophen
- *Carbamazepine
- *Fluridone
- *Hydrocodone
- *Ibuprofen
- *Imazapyr
- *Naproxen
- *Primidone
- *Pyraclostrobin
- *Triclopyr
- 2,4-D
- Bentazon
- Diuron
- Fenuron
- Imidacloprid
- Linuron
- MCPP

Bottle Type: P-500ML Number of Bottles: 1 Preserved With: HNO3

W-ICP Template: (EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

- Barium
- Calcium
- Iron
- Magnesium
- Potassium

Bottle Group C (Water) With 1 Samples:

Bottle Type: P-500ML Number of Bottles: 1 Preserved With: HNO3

W-ICP Template: (EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

- Sodium
- Zinc

W-ICPMS Template: (EPA 200.8 Rev. 5.4) Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

- *Boron
- Aluminum
- Antimony
- Arsenic
- Cadmium
- Chromium
- Copper
- Lead
- Nickel
- Selenium
- Silver
- Thallium

Bottle Type: P-500ML Number of Bottles: 1 Preserved With: ICE And H2SO4

W-NH3 Template: DEFAULT (EPA 350.1 Rev. 2.0) Ammonia in aqueous matrices as mg N/L

- Ammonia-N

W-NO2NO3 Template: DEFAULT (EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L

- NO2NO3-N

W-S-A-TP Template: DEFAULT (EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L

- Total-P

W-TKN Template: DEFAULT (EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices

- Kjeldahl Nitrogen

W-TOC Template: DEFAULT (SM 5310 B-00) Nonpurgeable Organic Carbon in aqueous matrices

- Organic Carbon

Bottle Type: P-125ML Number of Bottles: 1 Preserved With: FILTER-ICE

W-PO4-F Template: DEFAULT (EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

- O-Phosphate-P

Bottle Type: BG-1L Number of Bottles: 2 Preserved With: ICE

W-PSNP-TQ Template: DEFAULT (EPA 8270E) Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS

- *Dimethenamid
- *Dithiopyr
- *Fipronil Desulfinyl
- *Oxadiazon
- *Prodiamine
- *Tebuconazole
- Acetochlor
- Alachlor
- Ametryn
- Atrazine
- Atrazine Desethyl
- Azinphos Methyl
- Bromacil
- Butylate
- Chlorpyrifos Ethyl
- Chlorpyrifos Methyl
- Cyanazine
- Demeton
- Diazinon
- Disulfoton
- EPTC
- Ethion
- Ethoprop
- Fenamiphos
- Fipronil
- Fipronil Sulfide

Bottle Group C (Water) With 1 Samples:

Bottle Type: BG-1L Number of Bottles: 2 Preserved With: ICE

W-PSNP-TQ Template: DEFAULT (EPA 8270E) Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS

- Fipronil Sulfone
- Fonofos
- Hexazinone
- Malathion
- Metalaxyl
- Metolachlor
- Metribuzin
- Mevinphos
- Molinate
- Norflurazon
- Parathion Ethyl
- Parathion Methyl
- Pendimethalin
- Phorate
- Prometon
- Prometryn
- Simazine
- Terbufos
- Terbuthylazine

* - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: 54179 RQ- 2019-06-10-34 Project: SMP BIO

Notes: (1) Always wait for meter to stabilize before recording any readings.
(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 6/13/19

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro-meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.											P / F	L / F
ICV											P / F	L / F
CCV	NM	6/19/19	0840	24.1	763	8.403	8.38	99.4			(P) / F	(L) F
CCV	MC	6/19/19	1505	28.5	762	7.75	7.74	99.4			(P) / F	(L) F

DO Acceptance criteria from Table ± 0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	NM	6/19/19	0845	1901160A	1/20	1000	1000	P / F	(L) F
ICV			0848	1904058	4/20	100	104	(P) F	(L) F
CCV	MC	6/19/19	1450	1904058	4/20	100	101.6	(P) F	(L) F
CCV			1507					P / F	L / F

Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	NM	6/19/19	0650	2811803	10/20	7.	23.2	7.0		P / F	(L) F
Calibr.			0654	2902818	1/21	4.	23.2	4.0		P / F	(L) F
Calibr.			0658	4904E09	9/20	10.	23.2	10.0		P / F	(L) F
ICV			0700	2902818	1/21	4.0	23.2	3.88	125.8	(P) F	(L) F
CCV	MC	6/19/19	1509	2811803	10/20	7.0	24.3	7.06	-57.7	(P) / F	(L) / F
CCV										P / F	L / F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50; mV pH 4 Range +180 ± 50; mV pH 10 Range -180 ± 50;
If mV are recorded: slope from 7 to 10 _____, slope from 4 to 7 _____ (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? (YES) / NO / NA (not surf. water project)
If **YES**, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 6/13/19
If **NO**, what will be used? (circle one) **Secchi Disk Line / Sonar** Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	NM	6/19/19	0705	0.00	0.00	(P) F	(L) F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria ± 5 % or ± 0.05m, whichever is greater.

COMMENTS:

Site Name Big Escambia Creek downstream of Fannie Rd. Date: 06/19/2019

Field ID G4NW0421 Storet G4NW0421 Project: TMDL Studies

Visit ID 79841 WBID 10 RQ: 2019-06-10-34

RPS ID 9376 LIMS ID: _____

VPDB ID N/A

HA ID 16097

☑ SCI

☐ RPS/LVS Only

☑ Sample Site Created in SBIO

☑ Phys/Chem entered in SBIO

☑ HA entered in SBIO Initial FB, 6/20/2019 ☑ Date and Initial QA: 6/24/19

☑ RPS entered in SBIO Initial FB, 6/20/2019 ☑ Date and Initial QA: 6/24/19

☐ LVS entered in SBIO Initial _____ ☐ Date and Initial QA: _____

☑ < 2 m^2 vegetation

☐ Plants getting verified Date submitted: _____

☐ Plants verified Date returned: _____

☑ RPS authorized in SBIO ☑ Date and Initial: 6/24/2019, FB

☑ RPS score: 4

☐ Macro authorized in SBIO ☐ Date and Initial: _____

☐ Macro score: _____

☐ SCI complete: _____ SCI Score: _____

☑ If SMP, scanned into database

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified? Yes / (No)

WIN Station Name: Big Escambia Creek downstream of Fannie Rd **Date:** 06/19/2019 (mm/dd/yyyy)

WIN/ Field ID: G4NW0421 **WBID:** 10 **Latitude:** 30.98369 (Decimal Degrees)

County: Escambia **ORG ID:** 21FLPNS **Longitude:** -87.23347 (Decimal Degrees)

Receiving Body of Water: Escambia River **RQ-** 2019-06-10-3284

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
M. Mulkey	X				
F. Butera					
M. Clark	X	X	X	X	X

Sampling Equipment
- [X] Sample Container [ ] Van Dorn [ ] Pole
- [ ] Carboy [X] Syringe
- [ ] Dipper [ ] Other
- Depth Measured with
- Equipment ID

Collection Method
- [X] Wading [ ] Canoe/Kayak
- [ ] From Shore [ ] Electric Motor
- [ ] Other [ ] Gasoline Motor

Water Level: Dry/ Pooled/ (Low) Normal / High / Flooded **Meter ID#** 15429 **Matrix:** (Fresh) / Marine / DI

Photos: Yes (No) **Flow:** No Flow / Intestital (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 (µmhos/cm)	Temp. (C°)
EST	12:50	0.4	0.2	0.4 "SI"	8.22	99.9	6.01	0.01	33.9	25.3
(CEN)										

Biological Samples Collected: [redacted] (HA) (SCI) (RPS) Algae ID (LVS) LVI Other:

SBIO ID Numbers: SBIO-ID: 7934 HA-ID: 16097 RPS-ID: Macrophyte-ID: N/A LIMS#:

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	[X] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	[X] Ice [X] H_2SO_4	8K1080	7/16/19	[X] <2
Metals	[X] W-ICPMS [ ] W-ICP	[X] Ice [X] HNO_3	834080	12/10/19	[X] <2
Filtered Nutrients	[X] W-PO4-F [X] Field Filtered 0.45 µm Filter	[X] Ice	1169823		
Chlorophyll	[X] CHLSUITE-W	[ ] Ice			
Physical/Aggregate (Fresh)	[X] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	[ ] Ice			
Physical/Aggregate (Marine)	[ ] Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	[ ] Ice			
Macroinvertebrates	[ ] MI HW-QLDC	[ ] Formalin			
Periphyton	[ ] ALGAE-ID	[ ] Ice			
Microbiology	[X] E Coli [ ] F Coli [ ] Enterococci	[ ] Ice			
Molecular	[ ] PCR-FILTER [ ] PCR-BacR [ ] PCR-GULL2 [ ] PCR-HF183 [ ] PCR-DG3 [ ] PCR-GFD	[ ] Ice			
Tracers	[X] W-E8321-TB [X] W-E8321-MS	[X] Ice N/A			
Pesticides	[ ] W-PSNP-TQ [ ] W-CT-CL-R [ ] W-E8321-DI [ ] W-PCL-SQ-R [X] WE8321-MS [ ] W-CARB-AA	[ ] Ice			
Phytoplankton	[ ] DTY-QN-C [ ] PKD-QN-C				

Place Preservative Sticker(s) Here (If Available)

Notes: 65 meter upstream from 33020114 Stream moved back into re-engineered historic channel early 2000's.

Field/WIN ID

G4NW0421

Location: Big Escambia Creek downstream of Fannie Rd

Signature: [signature] **Date:** 6/19/19

LIMS EVENT ID: WIN Import ID:

Enter Field Parameters, Verify Station ID In LIMS DMT: (Initials/Date) QC Station ID, Field Parameters In LIMS DMT: (Initials/Date)

Scan/Save Field Sheets (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)

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

SAMPLE ID 79841 | ORG ID 21FLPNS | LATITUDE 30.98369
COUNTY ESCAMBIA | STORET # G4NW0421 | LONGITUDE 87.23347
DATE 6/19/2019 | TIME 1250 | SAMPLING AGENCY FL DEP - NW ROC
SITE NAME Big Escambia Creek below downstream of Fannie Rd
FIELD ID/NAME G4NW0421 | RECEIVING BODY OF WATER
RQ-2019-06-10-34

RIPARIAN ZONE / STREAM FEATURES

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

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
2	X	X	X		X		

Landscape Development Intensity Index (LDI): N/A

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: 30 m wide

Width of Riparian Vegetation (m) on Each Buffer Side: Left Bank: 0 Right Bank: 0

Hydrologic Modification Score (per FT 3101): 3-4

Velocity (m/sec)	Depth (m deep)
.25	0.5
.33	0.8
— (Too Deep)	—

High Water Mark: 2.0 (m) + 71.5 (above present water level) = 73.5 (present depth) (above bed)

Artificially Impounded: ☐ Yes ☒ No

Artificially Channelized: ☐ No ☒ Some recovery ☐ Mostly recovered, more sinuous ☐ 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

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☐	☐	☒
Silt Smothering:	☐	☐	☒	☐
Algae Smothering:	☐	☒	☐	☐

SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	1.3	10	
Undercut Banks / Roots	0.1	5	
Leaf Packs or Mat	0.1	92	
Aquatic Vegetation		1	
Rock or Shell Rubble..			
Sand.....	98.5	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)
Top:	0.2	25.3	6.01	8.22	99.9	33.9	0.01
Mid:							
Bottom							

SECCHI (M): ☒ VOB

TOTAL DEPTH: 71.5

Meter ID: 15429

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: _____ Exp: _____

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:
Stream Restoration project returned flow to original re-engineered channel which is eroding.

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

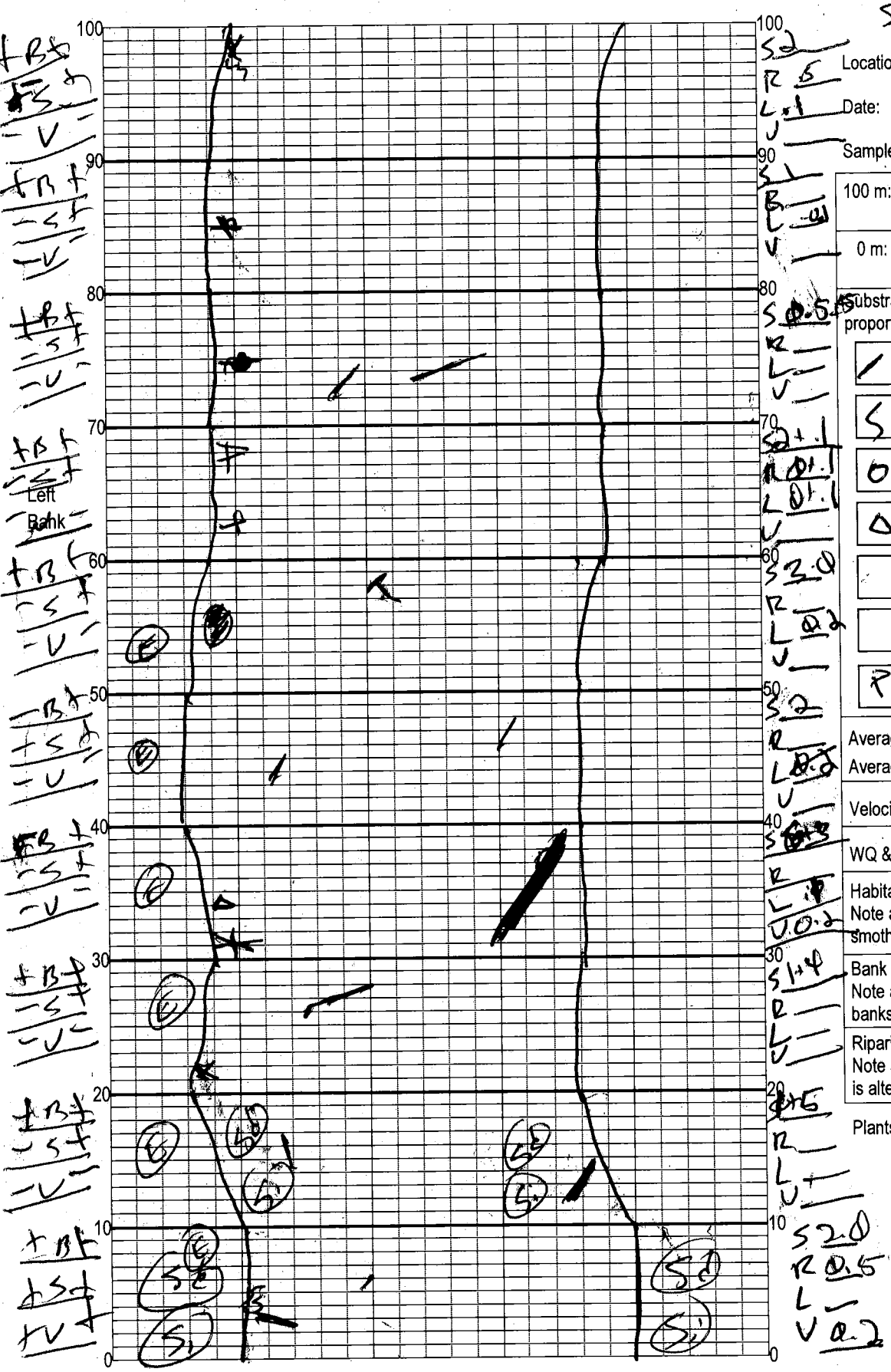
SAMPLING TEAM: F Butler, N. Mulkey, M. Clark

SIGNATURE: [signature]

DATE: 06/19/2019

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

start GYNW0421



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

Location: Big Escambia Ck

Date: 06/19/2019

Sampler: F Butler, M. Clark

100 m: Latitude 30.98351
Longitude 87.23343

0 m: Latitude 30.98347
Longitude 87.23344

Substrates: Code key, draw proportionate habitat abundance. 1.3 %

- Snags 38/300 1.3
- Roots/undercut banks 1/3000
- Leaf Packs (or mats) 9/3000
- Aquatic Macrophytes
- Pools total # observed = 0, # range expected = 01

Average width 30 m
Average depth 1.5 m

Velocity measured at 30 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: 0
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

SABO ID 79141

Popcorn Tree

Panicum hemitomon

Red Maple

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

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
NWFROC		GWNW042	06/19/19	Escambia River
REMARKS:	COUNTY: Escambia	LOCATION: Big Escambia Ck Farmers Rd Below		FIELD ID/NAME: GWNW042

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 1	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 (1)
Substrate Availability 1	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 (1)
Water Velocity 20	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 24 Primary Score 26	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 (4) 3 (2) 1
Secondary Habitat Components **Artificial Channelization** 10	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening 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 7 Left Bank 3	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 (7) 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas. (3) 2 1
Riparian Buffer Zone Width Right Bank 1 Left Bank 1	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 (1)
Riparian Zone Vegetation Quality Right Bank 2 Left Bank 2 Secondary Score 26	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 (2) 1

52 **TOTAL SCORE** SBIO ID 79841 HA 20 16097

Date: 6/19/2019	Analyst: F. Burton	Signature:

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Big Escambia Ck | County: Escambia | Date: 06/19/19 | Investigators:

STORET Station Number: GLNW0421

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9			
10	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9			
20	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		
30	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		
40	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		
50	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9			
70	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		
80	1	X		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		
90	1	N		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		
100	1	N		
	2	X		
	3	X		
	4	X		
	5	N		0
	6			
	7			
	8			
	9	N		

Secchi depth	1.5
Estimated?	✓

# points ranked 4-6	0
total points assessed	56
% 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-2019-06-10-34

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

SBIO ID 79841

RPS ID 9376

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 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: Big Escambia Ck | Date: 9/12/19 | County: ESCAMBIA | Storet Number: G4NW042

Analyst: F. Butera | Signature:

Comments: <2m² Vegetation. Vegetation Absent

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² 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.

SBIO ID 79841

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
If no Dominant or Co-Dominant were selected, indicate with "X"	X	X	X	X	X	X	X	X	X	X	
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

Micro ID N/A

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											

LIMS ID

Site Name Little Pine Barren Creek Above CR 99 Date: 06/19/2019

Field ID G4NW0420 Storet G4NW0420 Project: TMDL Studies

Visit ID 79840 WBID 87 RQ: 2019-06-10-34

RPS ID 9375 LIMS ID: _____

VPDB ID N/A

HA ID 16096

☑ SCI

☐ RPS/LVS Only

☑ Sample Site Created in SBIO

☑ Phys/Chem entered in SBIO

☑ HA entered in SBIO Initial FB, 6/20/2019 ☑ Date and Initial QA: 6/24/19 SS

☑ RPS entered in SBIO Initial FB, 6/20/2019 ☐ Date and Initial QA: 6/24/19 SS

☐ LVS entered in SBIO Initial _____ ☐ Date and Initial QA: _____

☑ < 2 m² vegetation

☐ Plants getting verified Date submitted: _____

☐ Plants verified Date returned: _____

☑ RPS authorized in SBIO ☑ Date and Initial: 6/24/2019 FD

☑ RPS score: 0

☐ Macro authorized in SBIO ☐ Date and Initial: _____

☐ Macro score: _____

☐ SCI complete: _____ SCI Score: _____

☑ If SMP, scanned into database

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified? Yes / (No)

WIN Station Name: Little Pine Barren Creek ABOVE CR 99 **Date:** 06/19/2019 (mm/dd/yyyy)

WIN/ Field ID: G4NW0420 **WBID:** 87 **Latitude:** 30.89164 (Decimal Degrees)

County: Escambia **ORG ID:** 21FLPNS **Longitude:** -87.44683 (Decimal Degrees)

Receiving Body of Water: Escambia River **RQ-** 2019-06-10-3[illegible]4

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
FB					
MC					
AM	/	/	/		

Sampling Equipment
- [x] Sample Container [ ] Van Dorn [ ] Pole
- [ ] Carboy [x] Syringe
- [ ] Dipper [ ] Other
- Depth Measured with
- Equipment ID

Collection Method
- [x] Wading [ ] Canoe/Kayak
- [ ] From Shore [ ] Electric Motor
- [ ] Other [ ] Gasoline Motor

Water Level: Dry/ Pooled/ Low / (Normal) / High / Flooded **Meter ID#** [illegible] 154179 **Matrix:** (Fresh) / Marine / DI

Photos: Yes / (No) **Flow:** No Flow / Intestital / (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 (µmhos/cm)	Temp. (C°)
EST		0.6		VOB						
(CEN)	1025		0.3		5.75	66.9	5.40	0.02	41.9	22.9

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

SBIO ID Numbers: SBIO-ID: 79840 HA-ID: 66096 RPS-ID: 94375 Macrophyte-ID: N/A LIMS#:

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	[x] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	[x] Ice [x] H_2SO_4	819090	7/16/19	[ ] <2
Metals	[x] W-ICPMS [x] W-ICP	[x] Ice [x] HNO_3	8344050	12/10/19	[ ] <2
Filtered Nutrients	[x] W-PO4-F [x] Field Filtered 0.45 µm Filter	[x] Ice	169/8233		
Chlorophyll	[x] CHLSUITE-W	[x] Ice			
Physical/Aggregate (Fresh)	[x] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	[x] Ice			
Physical/Aggregate (Marine)	[ ] Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	[ ] Ice			
Macroinvertebrates	[x] MI FW-QLDC	[x] Formalin			
Periphyton	[ ] ALGAE-ID	[ ] *ICE			
Microbiology	[x] E Coli [ ] F Coli [ ] Enterococci	[x] Ice			
Molecular	[ ] PCR-FILTER [ ] PCR-BacR [ ] PCR-GULL2 [ ] PCR-HF183 [ ] PCR-DG3 [ ] PCR-GFD	[ ] Ice			
Tracers	[ ] W-E8321-DI [ ] W-E8321-MS	[ ] Ice			
Pesticides	[x] W-PSNP-TQ [ ] W-CT-CL-R [x] W-E8321-DI [ ] W-PCL-SQ-R [x] WE8321-MS [ ] W-CARB-AA	[x] Ice			
Phytoplankton	[ ] DTY-QN-C [ ] PKD-QN-C				

Place Preservative Sticker(s) Here (If Available)

Notes: Historic Stunet 33D20081

Field/WIN ID

G4NW0420

Location:
Little Pine Barren Creek above CR99

Signature: [signature] **Date:** 6/19/19

LIMS EVENT ID: WIN Import ID:

Enter Field Parameters, Verify Station ID In LIMS DMT: (Initials/Date) QC Station ID, Field Parameters In LIMS DMT: (Initials/Date)

Scan/Save Field Sheets (Initials/Date) Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)

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

SAMPLE ID 79840 ORG ID 21PCPNS LATITUDE 30.89164
COUNTY Escambia STORET # G4NWQ42Q LONGITUDE 87.44683
DATE 6/19/2019 TIME 1625 SAMPLING AGENCY NWROC FDEP
SITE NAME Little Pine Barren Ck above CR99 (Walnut Hill) RECEIVING BODY OF WATER Escambia River
FIELD ID/NAME G4NWQ42Q

RIPARIAN ZONE / STREAM FEATURES

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

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

Landscape Development Intensity Index (LDI): N/A

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 : 7LB Right Bank : 7LB

Hydrologic Modification Score (per FT 3101): 3-4

Typical Width (m) Depth (m)/Velocity (m/sec) Transect: 2.5 m wide

.33 m/s	.33 m/s	.2 m/s
.7 m deep	0.6 m deep	.5 m deep

High Water Mark: 0.7 (m) + 1.2 (above present water level) = 1.9 (present depth) (above bed)

Artificially Impounded ☐ Yes ☒ No

Artificially Channelized : ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ 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

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☒	☐	☐
Silt Smothering:	☐	☐	☒	☐
Algae Smothering:	☒	☐	☐	☐

SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	10.7	5	
Undercut Banks / Roots	8.8	5	
Leaf Packs or Mat	0.8%	5	0.8%
Aquatic Vegetation			
Rock or Shell Rubble			
Sand	68	2	
Mud / Muck / Silt			
Other Gravel	11.7	3	
Other			

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☐	☐	☒	☐
Aquatic Plants:	☐	☒	☐	☐
Sulfur Bacteria:	☐	☐	☐	☒

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	22.9	5.40	5.75	66.9	41.9	0.02	
Mid:								☒ VOB
Bottom								TOTAL DEPTH 0.6

Meter ID: FB/54129 154179

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:_____ Exp:_____

Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☒ Led from Fe Source

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

Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

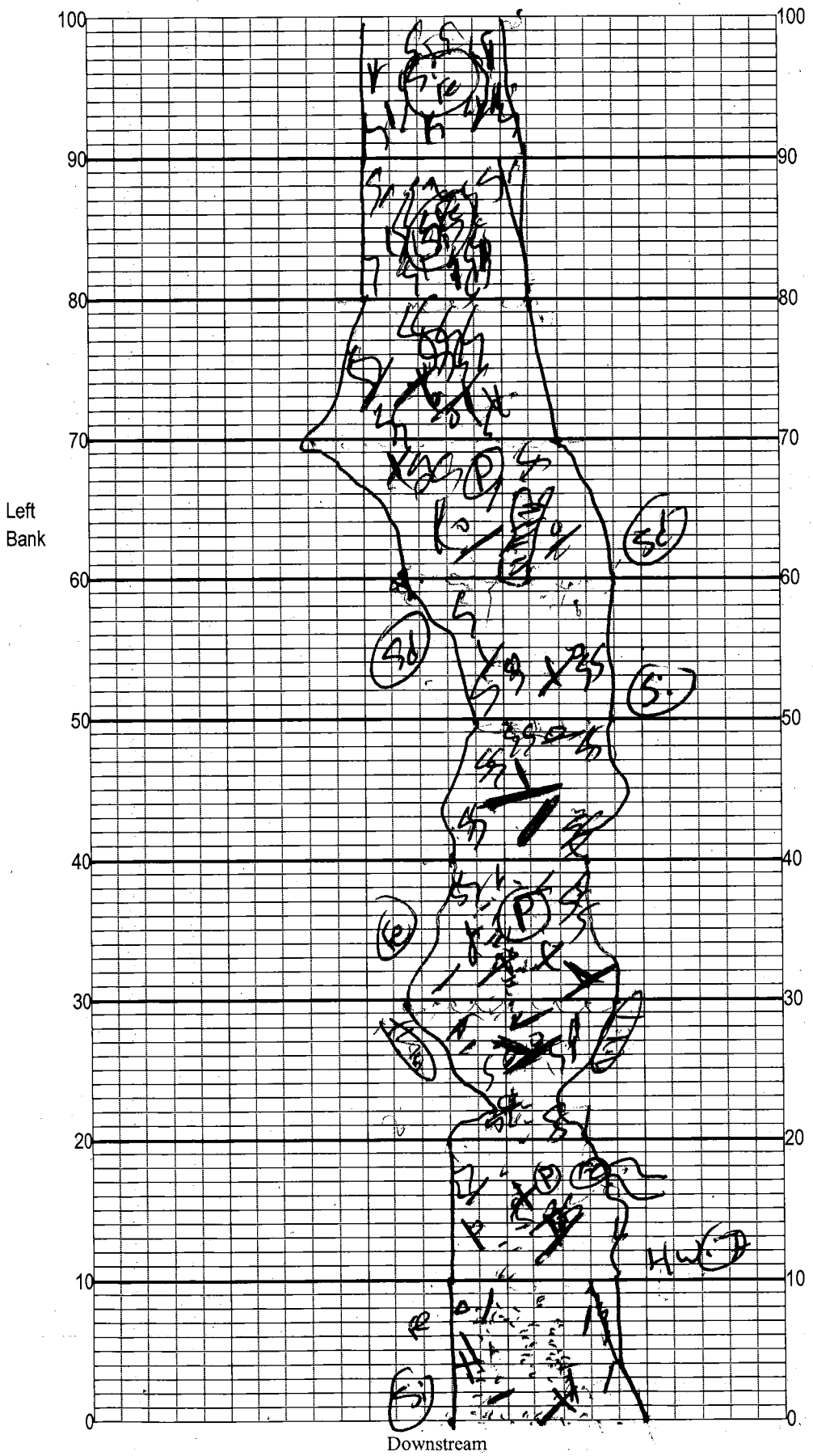
AMBIENT FIELD CONDITIONS / NOTES:

~~Original Stream Channel Re Engineered in 2000's. New channel is eroding significantly on West Bank.~~ FB

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

SAMPLING TEAM Burton, N. Mulkey, M. Clark SIGNATURE : Frank Rittes DATE : 06/19/2019

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



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

Location: Little Pine Barren @ Ck adj CR99

Date: 06/19/2019

Sampler: F. Butler, M. Clark

100 m: Latitude	30.89173
Longitude	87.44778
0 m: Latitude	30.89140
Longitude	87.44695

Substrates: Code key, draw proportionate habitat abundance. %

- Snags ____
- Roots/undercut banks ____
- Leaf Packs (or mats) ____
- Aquatic Macrophytes ____
- BAR (G) Gravel (FC) = Fe Sulfur ____
- (P) = Pool (C) = Organic (S) Silt (SD) Sand ____
- (P) Pools total # observed = 3 # range expected = 1

Average width 6.5 m

Average depth 0.5 m

Velocity measured at 22 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:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:
Started GPS 0420
SBIO ID 79840

Little Pine Barren Ck.

Storet: 6YNW042Φ

Date 6/19/2019

0 meter (Dec Deg)
30.89140
87.44695

100 meter (Dec Deg)

Water Quality Measured at
ΦM

Stream Velocity and location.
.33 m/s 30 meter mark

Number of Pools & Location
3
High Water: 0.7

Silt smothering @
A, B, D, F, J

Sand Smothering @
F, G

Algae Smothering @
—

Degraded Banks @
—

Fe/Sulfur Bact. @
A, B, D, J

0-10 meter [A]	Habitat Area (M)	Left Bank	Right Bank
	Snag 8.0	Bankfull +	Bankfull +
0m width (m) 8.4	Root 1.9		
10m width 6.0	Leaf .4	Slope +	Slope +
Avg. Depth 0.4	Veg —		
Max Depth 0.7	Gravel 15	Veg +	Veg +
Rip. Buff L 718	Rock		
Rip. Buff R 718	Fe (S.)		

10-20 meter [B]	Habitat Area (M)	Left Bank	Right Bank
	Snag 9.0	Bankfull +	Bankfull +
20m width 5.0	Root 0.4		
Avg. Depth 0.4	Leaf 0.6	Slope +	Slope +
Max Depth 1.2	Veg		
Rip. Buff L 718	Gravel 10	Veg +	Veg +
Rip. Buff R 718	Rock		
	Fe (S.)		

20-30 meter [C]	Habitat Area (M)	Left Bank	Right Bank
	Snag 14	Bankfull +	Bankfull +
30m width 7.5	Root 4.5		
Avg. Depth .4	Leaf 1.0	Slope +	Slope +
Max Depth .7	Veg		
Rip. Buff L 718	Gravel 10	Veg +	Veg +
Rip. Buff R 718	Rock		

30-40 meter [D]	Habitat Area (M)	Left Bank	Right Bank
	Snag 3.0	Bankfull +	Bankfull +
40m width 5.0	Root 3.5		
Avg. Depth .5	Leaf 0.9	Slope +	Slope +
Max Depth 1.0	Veg 0.1		
Rip. Buff L 718	Gravel 15	Veg +	Veg +
Rip. Buff R 718	Rock +		
	Fe (S.)		

40 - 50 meter [E]	Habitat Area (M)	Left Bank	Right Bank
	Snag 6.5	Bankfull +	Bankfull +
50m width 5.0	Root 5.5		
	Leaf 0.8	Slope —	Slope +
Avg. Depth .4	Veg		
Max Depth 0.6	Gravel 7.0	Veg +	Veg +
Rip. Buff L 718	Rock		
Rip. Buff R 718			

50-60 meter [F]	Habitat Area (M)	Left Bank	Right Bank
	Snag 4.0	Bankfull +	Bankfull +
60m width 7.5	Root 4.6		
Avg. Depth 0.4	Leaf 0.4	Slope +	Slope +
Max Depth 0.7	Veg		
Rip. Buff L 718	Gravel 3.0	Veg +	Veg +
Rip. Buff R 718	Rock		
	(S.) Fe		

60-70 meter [G]	Habitat Area (M)	Left Bank	Right Bank
	Snag 5.0	Bankfull +	Bankfull +
70m width 9.0	Root 3.5		
Avg. Depth .4	Leaf 0.5	Slope —	Slope +
Max Depth .8	Veg		
Rip. Buff L 718	Gravel 8	Veg +	Veg +
Rip. Buff R 718	Rock		
	Fe		

70-80 meter [H]	Habitat Area (M)	Left Bank	Right Bank
	Snag 10	Bankfull +	Bankfull +
80m width 6	Root 11.4		
Avg. Depth .6	Leaf 0.6	Slope +	Slope +
Max Depth 0.7	Veg		
Rip. Buff L 711	Gravel 6.0	Veg +	Veg +
Rip. Buff R 718	Rock		
	1.0		

80-90 meter [I]	Habitat Area (M)	Left Bank	Right Bank
	Snag 6.0	Bankfull +	Bankfull +
90m width 7m	Root 13		
Avg. Depth .6	Leaf 0.9	Slope +	Slope +
Max Depth .8	Veg		
Rip. Buff L 717	Gravel 3.0	Veg +	Veg +
Rip. Buff R 718	Rock		
	(S.) Fe		

90 - 100 meter [J]	Habitat Area (M)	Left Bank	Right Bank
	Snag 4.0	Bankfull +	Bankfull +
100m width 6m	Root 9.0		
	Leaf .3	Slope —	Slope +
Avg. Depth 0.5	Veg		
Max Depth 0.7	Gravel	Veg +	Veg +
Rip. Buff L 718	Rock		
Rip. Buff R 718	Foam	(S.) Fe	

Total Habitat	Sq. Meters	Percent
Snags	69.5	10.7
Roots	57.3	8.8
Leaf	5.7	0.8
Veg		
Rock		
Gravel	76	11.7
Sand		
Other		
Sum 1° Habitat		20.3

Avg. Depth	Max. Depth	Avg. Width
0.5	1.2	6.5

Bank Stability Score. Left Bank 27 Right Bank 30 Category Left Bk Optimal Right Bk Optimal
Add all plus signs (Max. 30 possible) and Divide by 10. Scoring. **Poor:** 0.0 - 0.9 pts. **Marginal:** 1.0-1.9 pts. **Suboptimal:** 2.0 - 2.6 **Optimal:** 2.7 +

Notes. SBIO ID 79840

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

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FL DEP - NWROC		G4NWØ42Ø	06/19/19	Escambia River
REMARKS:	COUNTY: ESCAMBIA	LOCATION: Little Pine Barren Ck.		FIELD ID/NAME: G4NWØ42Ø

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 14	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 (14) 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 14	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 (14) 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 2Ø	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 (20) 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 18 Primary Score 66	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 (18) 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 2Ø	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. (20) 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening 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 10 9 Left Bank	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas. (10) (9)	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 10 Left Bank	Width of vegetation greater than 18 m (10) 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 9 Left Bank Secondary Score 78	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. (10) (9)	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

144 **TOTAL SCORE** SBIO ID 7984Ø. HA ID 16Ø96

Date: 06/19/19	Analyst: F. Butera	Signature:

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Little Pine Barren | County: Escambia | Date: 6/19/2019 | Investigators: F Butler, M. Clark

STORET Station Number: G4NWQ 420

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
10	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
20	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
30	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
40	1	N	NO	
	2		NO	
	3		NO	
	4		YES	
	5			96
	6			
	7		NO	
	8		NO	
	9		NO	
50	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
70	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
80	1	N	NO	
	2		YES	
	3		NO	
	4			
	5			96
	6			
	7			
	8			
	9			
90	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
100	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			

Secchi depth	108
Estimated?	NO

# points ranked 4-6	0
total points assessed	99
% 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-2019-06-10-34

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

SBIO ID 79840

RBS ID 9375

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 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: Little Pine Barren	Date: 6/19/19	County: Escambia	Storet Number: G4NW0424
Analyst: F Buford		Signature: [signature]	
Comments: <2 m² Vegetation			

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if $1m^2$ 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.

SBIO ID 79840

HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
Cyrilla				|							
If no Dominant or Co-Dominant were selected, indicate with "X"	X	X	X	X	X	X	X	X	X	X	
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

MACRO ID N/A

HERBACEOUS SPECIES	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum	|										
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											