

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

STRATEGIC MONITORING PLAN Field Sheet

July 2022

Meter
Passed End
of Day CCV

Yes / No

WIN Station Name:	Pace Mill Creek upstream of Hwy 90				Sample Date:	12/15/2022	
WIN / Field ID:	G4NW0481	ORG ID:	21FLPNS	ENR:			
County:	Santa Rosa	WBID:	420	STREAM	3F	Latitude:	30.59383
Receiving Body of Water:	Escambia Bay North Segment				Longitude:	-87.174637	
					RQ-	2022-12-19-18	

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Frank Butera	x		x		
Nathan Mulkey		x		x	x

Sampling Equipment			
x	Sample Container	Carboy	
	Dipper	Van Dorn	
	Syringe	Pole	
	Syringe Lot# 1363514	Filter Lot# 17460495	
	Secchi Equipment ID:	Secchi - 2	
Collection Method			
x	Wading	Canoe/Kayak	
	From Shore	Electric Motor	
		Gasoline Motor	
	Depth Measured With	Meter	

Water Level:	Low
Flow:	Flowing
Matrix:	Fresh
Tide Stage:	
High Tide:	
Low Tide:	
Photos:	Yes
Meter ID:	155077 (ProDSS)
Depth Gauge ID:	depth_gauge

Time Zone	Time	Total Depth (m)	Sample Depth (m)	DO (mg/L)	DO (%SAT)	Temp. (°C)	pH	Secchi Disk (m)	Sp COND (µmhos/cm)	Salinity (PPT)
CEN	1000	0.57	0.25	7.84	81.9	17.6	5.5	1.0	52.4	0.02
								VOB (s)		

Biological Samples Collected: HA RPS SCI LVS

SBIO Visit ID: 85873 HA ID: 18081 RPS ID: 10028 Macrophyte ID: N/A LIMS Sample ID Entered Into The Macrophyte Module: 2375924

Parameter Suite	Parameter Methods (LIMS Test Codes)	Preservation				
		Type	Lot#	Expiration Date	pH Check	
Microbiology	E. coli	ICE				
Chlorophyll	CHLSUITE-W	ICE				
Physical/Aggregate Nutrients	ALKALINITY, TURBIDITY, W-F, W-TSS	ICE				
	W-CL-IC, W-COLOR, W-SO4-IC, W-TDS	ICE				
Filtered Nutrients	W-PO4-F	ICE	Syringe Lot#:1363514; Filter Lot#:17460495			
Acid Preserved Nutrients	W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	ICE	H2SO4*	SA2145160	06/02/2023	H2SO4 pH<2
Metals	W-ICPMS	ICE	HNO3**	NA1105100	06/07/2023	HNO3 pH<2
Organics (LC)	W-E8321-DI					
Macroinvertebrates	MI-FW-QLDC					
Organics (GC)	W-PSNP-TQ	Ice	*2.0 ml of H2SO4 Used Unless Noted Otherwise **2.0 ml of HNO3 Used Unless Noted Otherwise			
Molecular	W-TR-SQ-R					
Periphyton						
Phytoplankton						
BOD						
DOC			SyringeLot#		FilterLot#	
Other(s)						
Field Comments:	Heavy rain morning / SCI Collection Time: 1030 E. coli sent to TLH laboratory for analysis.					
Comments on COC:						
Relinquish Date:	12/15/2022	Signature:				

LIMS EVENT ID: _____ WIN Import ID: _____

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ QC Station ID, Field Parameters In LIMS DMT: _____
(Initials/Date) (Initials/Date)Save Field Sheets on Network: _____ Migrate Data to WIN: _____
(Initials/Date) (Initials/Date)

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

SAMPLE ID 85873 ORG ID 21FLPNS LATITUDE N 30.59383
 COUNTY Santa Rosa (Pace) WIN ID/STORET # G4NW0481 LONGITUDE W 87.17464
 DATE 12/15/2022 TIME 10:00 CTZ SAMPLING AGENCY FL DEP - NWROC
 SITE NAME Pace Mill Creek upstream of Hwy 90 RQ- 2022-12-19-18
 FIELD ID/NAME G4NW0481 RECEIVING BODY OF WATER WBID 420 Project: SMP / TMDL Studies

RIPARIAN ZONE / STREAM FEATURES

LIMS ID: 2375924

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						Typical Width (m) <u>4</u> Depth (m)/Velocity (m/sec) Transect m/s <u>0.09</u> m/s <u></u> m/s <u></u> m deep <u>0.0</u> m deep <u></u> m deep <u></u>		
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>718</u> Right Bank: <u>718</u>				Hydrologic Modification Score (per FT 3101) <u></u>		High Water Mark: <u>2.0</u> + <u>71.5</u> = <u>73.6</u> (m) (above present water level) (present depth) (above bed)		
Artificially ☐ No ☐ Mostly recovered, more sinuous Channelized: ☒ Some recovery ☐ Recent, severe				Artificially Impounded ☐ Yes ☒ No Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☒ Heavily Shaded ☐ Moderate Shaded (46-80%)				

SEDIMENT / SUBSTRATE

Sediment Oils ☐ Absent ☐ Slight ☒ Moderate ☐ Profuse		Sediment Odors ☐ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☒ Anaerobic ☐ Other (Specify):		Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒ Algae Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒	
SUBSTRATE TYPE Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon % Coverage INVERT # Times Sampled PERI # Times Sampled Woody Debris (Snags) <u>12.8</u> <u>5</u> Undercut Banks / Roots <u>2.0</u> <u>5</u> Leaf Packs or Mat <u>10.4</u> <u>5</u> Aquatic Vegetation Rock or Shell Rubble..... Sand..... <u>71.8</u> <u>3</u> Mud / Muck / Silt Other <u>Gravel</u> <u>2</u> Other			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.25</u> <u>17.6</u> <u>5.5</u> <u>7.84</u> <u>61.9</u> <u>52.4</u> <u>0.02</u> <u>1.0</u> Mid: <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> Bottom: <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> Meter ID: <u>15077</u> Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>512145100</u> Exp: <u>6/4/23</u> Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: <u></u> Exp: <u></u>		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☐ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☐ ☐ ☐ ☒			Water Surface Oils Normal ☐ Sheen ☒ Globs ☒ Slick ☐ Other ☐ Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐ Clarity Clear ☐ Slightly Turbid ☐ Turbid ☒ Opaque ☐		
System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐			AMBIENT FIELD CONDITIONS / NOTES: SCT @ 10:30 * Insufficient veg. (<2.0m ²) to perform LVS Everything covered in thick Fe Sulfur bacteria ☒ The antecedent hydrologic conditions have been met to my best knowledge.		

SAMPLING TEAM: Frank Butera, Nathan Mulkey

SIGNATURE:

[Signature]

DATE:

12/15/2022

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).

100 BF		Snag <u>2.5</u>
+ %S		Root <u>0.5</u>
+ Vg		LP <u>3.0</u>
90 BF		Plant _____
+ %S		OTR _____
+ Vg		Snag <u>1.0</u>
80 BF		Root <u>3.4</u>
+ %S		LP <u>2</u>
+ Vg		Plant _____
70 BF		OTR _____
+ %S	Snag <u>5</u>	
+ Vg	Root <u>2</u>	
60 BF	LP <u>5</u>	
+ %S	Plant _____	
+ Vg	OTR _____	
50 BF	Snag <u>1.5</u>	
+ %S	Root <u>3</u>	
+ Vg	LP <u>8</u>	
40 BF	Plant _____	
+ %S	OTR _____	
+ Vg	Snag _____	
30 BF	Root _____	
+ %S	LP _____	
+ Vg	Plant _____	
20 BF	OTR _____	
+ %S	Snag <u>2.0</u>	
+ Vg	Root _____	
10 BF	LP <u>5</u>	
+ %S	Plant _____	
+ Vg	OTR _____	
0 BF	Snag <u>1.0</u>	
+ %S	Root <u>1.0</u>	
+ Vg	LP <u>2.0</u>	
0 BF	Plant _____	
+ %S	OTR _____	
+ Vg	Snag <u>1.0</u>	
0 BF	Root <u>1.0</u>	
+ %S	LP <u>1.0</u>	
+ Vg	Plant _____	
0 BF	OTR _____	

WIN ID G4NW0481

Substrates: Code key,
draw proportionate habitat
abundance.

- ☐ 1 Snags
- ☐ 5 Roots/undercut banks
- ☐ 0 Leaf Packs (or mats)
- ☐ Δ Macrophytes
- ☐ 2 Gravel
- ☐ _____
- ☐ _____

Velocity: 1.5 m/s
Note where velocity
measures were taken. 60 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 _____ m
Average depth _____ m
WQ & chemistry taken @ 10 m
Station Name:

Pace Mill Creek upstream of Hwy 90

Project. SMP / TMDL Studies
Sampled By/Date: FS/12/15/22

0 m Latt. 30.59392

0 m Long. 87.17489

100 m Latt. 30.59463

100 m Long. 87.17439

40 - 50 meter [E]	Habitat Area (M)	Left Bank	Right Bank
	Snag 5	Bankfull	Bankfull
50m width 6.0 4.0	Root 2	—	+
	Leaf 4	Slope +	Slope +
Avg. Depth 1.0	Veg		
Max Depth 71.5	Gravel	Veg +	Veg +
Rip. Buff L	Rock		
Rip. Buff R	Other Fe	Other S	P

90 - 100 meter [J]	Habitat Area (M)	Left Bank	Right Bank
	Snag 25	Bankfull	Bankfull
100m width 8	Root 0.5	→	→
	Leaf 3	Slope	Slope
Avg. Depth 0.6	Veg	↓	↓
Max Depth 1.1	Gravel	Veg ↓	Veg ↓
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other Si: 8F	Other E P	

Notes. Entire substrate and all habitat covered with thick layer of Fe/Sulfur bacteria

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

SAMPLING AGENCY: FL DEP NWROC. 21FLPNS		STORET STATION NUMBER: G4NW0481	DATE (MM/DD/YY): 12/15/12	RECEIVING BODY OF WATER:
REMARKS: WBID 420	COUNTY: Santa Rosa	LOCATION: Pace Mill Creek upstream of Hwy 90	FIELD ID/NAME: G4NW0481	

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>11</u>	20 19 18 17 16	15 14 13 12 <u>11</u>	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>1*</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat <u>100% - 5 muck</u> 5 4 3 2 <u>1</u>
Water Velocity <u>9</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 <u>0.09</u> 0.07 0.06 0.05 10 <u>9</u> 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering <u>11</u> Primary Score <u>32</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 <u>11</u>	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>17</u>	20 19 18 <u>17</u> 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>8</u> Left Bank <u>8</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. <u>8</u> 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>10</u> Left Bank <u>10</u>	Width of vegetation greater than 18 m <u>10</u> 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>10</u> Left Bank <u>9</u> Secondary Score <u>71</u>	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. <u>10</u> 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

103 TOTAL SCORE

Date: <u>12/15/12</u>	Analyst: <u>F Butler</u>	Signature: <u>[Signature]</u>
-----------------------	--------------------------	-------------------------------

* Entire substrate and all habitat covered with thick layer of Fe/Su bacteria

SBIO ID: 85873

HA ID: 18081

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Pace Mill Creek on Hwy 90</u>					County: <u>Santa Rosa</u>		Date: <u>12/15/2012</u>		Investigators: <u>F. Butler</u>		
STORET Station Number: <u>G4NW0481</u>											
Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover		
0	1	N	N	96	60	1	N	N	83		
	2	N	N								
	3	N	N								
	4	N	N								
	5	N	N								
	6	N	N								
	7	N	N								
	8	N	N								
	9	N	N								
10	1	N	N	94	70	1	N	N	X		
	2	N	N								
	3	N	N								
	4	N	N								
	5	N	N								
	6	N	N								
	7	N	N								
	8	N	N								
	9	N	N								
20	1	N	N	96	80	1	N	N	96		
	2	N	N								
	3	N	N								
	4	N	N								
	5	N	N								
	6	N	N								
	7	N	N								
	8	N	N								
	9	N	N								
30	1	N	N	90	90	1	N	N	84		
	2	N	N								
	3	N	N								
	4	N	N								
	5	N	N								
	6	N	N								
	7	N	N								
	8	N	N								
	9	N	N								
40	1	N	N	96	100	1	N	N	96		
	2	N	N								
	3	N	N								
	4	N	N								
	5	N	N								
	6	N	N								
	7	N	N								
	8	N	N								
	9	N	N								
50	1	N	N	92	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.						
	2	N	N								
	3	N	N								
	4	N	N								
	5	N	N								
	6	N	N								
	7	N	N								
	8	N	N								
	9	N	N								
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%.											

Secchi depth 1.0
Estimated? 1.0

points ranked 4-6 4
total points assessed 4
% points ranked 4-6 100

Check accompanying data collected at same site/date.
Algal mat sample N/A
Linear Veg Survey N/A
Habitat Assessment X
SCI/Biorecon X
Water sample X
RQ-2022-12-19-18

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

SBIO Visit ID. 85873

RPS ID. 10028

Photo Log

Storet G4NW0481

Station Name: Pace Mill Creek upstream of Hwy 90

Date: 12/15/2022

Samplers: F. B. W. N. Mulkey

- 1 N
- 2 E
- 3 S
- 4 W
- 5 Up
- 6 Down
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Notes.