

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

STRATEGIC MONITORING PLAN Field Sheet

July 2022

Meter
Passed End
of Day CCVYes ☒ No ☐

WIN Station Name:	Airport Drain on Eglin AFB				Sample Date:	10/19/2022	
WIN / Field ID:	32010272	ORG ID:	21FLPNS	ENR:		Latitude:	30.47247
County:	Okaloosa	WBID:	760	STREAM	3F	Longitude:	-86.509633
Receiving Body of Water:	Jack Lake / Choctawhatchee Bay Lower Segment					RQ-	2022-10-10-28

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

Sampling Equipment			
x	Sample Container	Carboy	
	Dipper	Van Dorn	
	Syringe	Pole	
	Syringe Lot# 1363514	Filter Lot#	
	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:	154179 (ProDSS)

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 (PPTth)
CEN	950	0.4	0.2	3.26	35.4	19.8	5.99	0.4	135.5	0.06
								VOB (s)		

Biological Samples Collected:	HA LVS RPS SCI			
SBIO Visit ID: 85684	HA ID: 17969	RPS ID: 9978	Macrophyte ID: 12297	LIMS Sample ID Entered Into The Macrophyte Module: 2364096

Parameter Suite	Parameter Methods (LIMS Test Codes)	Preservation				
		Type	Lot#	Expiration Date	pH Check	
Microbiology	E. coli Contract Lab	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#:			
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						
Organics (LC)	W-E8321-DI	W-E8321-MS				
Macroinvertebrates	MI-FW-QLDC	Formalin	12345			
Organics (GC)	W-PSNP-TQ	Ice	*2.0 ml of H2SO4 Used Unless Noted Otherwise			
Molecular						
Periphyton						
Phytoplankton						
BOD						
DOC			SyringeLot#		FilterLot#	
Other(s)						
Field Comments:	/ SCI Collection Time: 1015					
Comments on COC:	Microbiology sample(s) submitted to contract laboratory.					
Relinquish Date:	10/19/2022	Signature:				

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)Save Field Sheets on Network: _____
(Initials/Date)Migrate Data to WIN: _____
(Initials/Date)

Site Name: Airport Drain on Eglin AFB
Storet 32010272 Field ID 32010272
Visit ID 85684
RPS ID 9978
Macro ID 12297
HA ID 17969

Date: 10/19/22
Project: SMP
RQ: 2022-10-10-28
LIMS ID: 2364496
WBID: 760

- ☒ SCI
☐ RPS/LVS Only
☒ Sample Site Created in SBIO
☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO Initial FB, 10/25/22 ☒ Date and Initial QA: 11/10/22 JF
☒ RPS entered in SBIO Initial FB, 10/25/22 ☒ Date and Initial QA: 11/10/22 JF
☒ LVS entered in SBIO Initial FB, 10/25/22 ☒ Date and Initial QA: 11/10/22 JF

☐ < 2 m² vegetation

- ☒ Plants getting verified
☒ Plants verified

Date submitted: In House
Date returned: In House

☒ RPS authorized in SBIO ☒ Date and Initial: FB, 11/16/2022
☒ RPS score: Φ
☒ Macro authorized in SBIO ☒ Date and Initial: FB, 11/16/2022
☒ LVS Score: FLAPC 2.076, Avg PoFC 4.1
☒ SCI complete: 11/17/2022, M. Heyn SCI Score: 15

☒ Add SBIO-ID, HA-ID, RPS-ID, MACROPHYTE-ID and LIMS# to field sheet in database

☐ E. coli samples shipped to Tallahassee Lab for analysis.

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

SAMPLE ID 85684 ORG ID 21FLPNS LATITUDE 30.47247
 COUNTY Orange WIN ID/STORET # 32010272 LONGITUDE 81.509633
 DATE 10/19/22 TIME 1000 CTZ SAMPLING AGENCY FL DEP - NWROC
 SITE NAME Airport Drain RQ-2020 10-10-28
 FIELD ID/NAME 32010272 RECEIVING BODY OF WATER Chert Bay WBID 960 Project: SMP

RIPARIAN ZONE / STREAM FEATURES

LIMS ID: 2364096

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) <u>N/A</u>	
Local Watershed Erosion (select one): ☐ None ☒ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy						Typical Width (m) Depth (m)/Velocity (m/sec) Transect <u>3.0</u> m wide	
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>2m</u> Right Bank: <u>18</u>				Hydrologic Modification Score (per FT 3101) <u>5-6</u>		<u>.01</u> m/s <u>.01</u> m/s <u>.01</u> m/s	
High Water Mark: <u>1.0</u> + <u>.5</u> = <u>1.5</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☒ Yes ☐ No		<u>.5</u> m deep <u>.5</u> m deep <u>.5</u> m deep	
Artificially ☐ No ☐ Mostly recovered, more sinuous Channelized: ☒ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☒ Moderate Shaded (46-80%)			

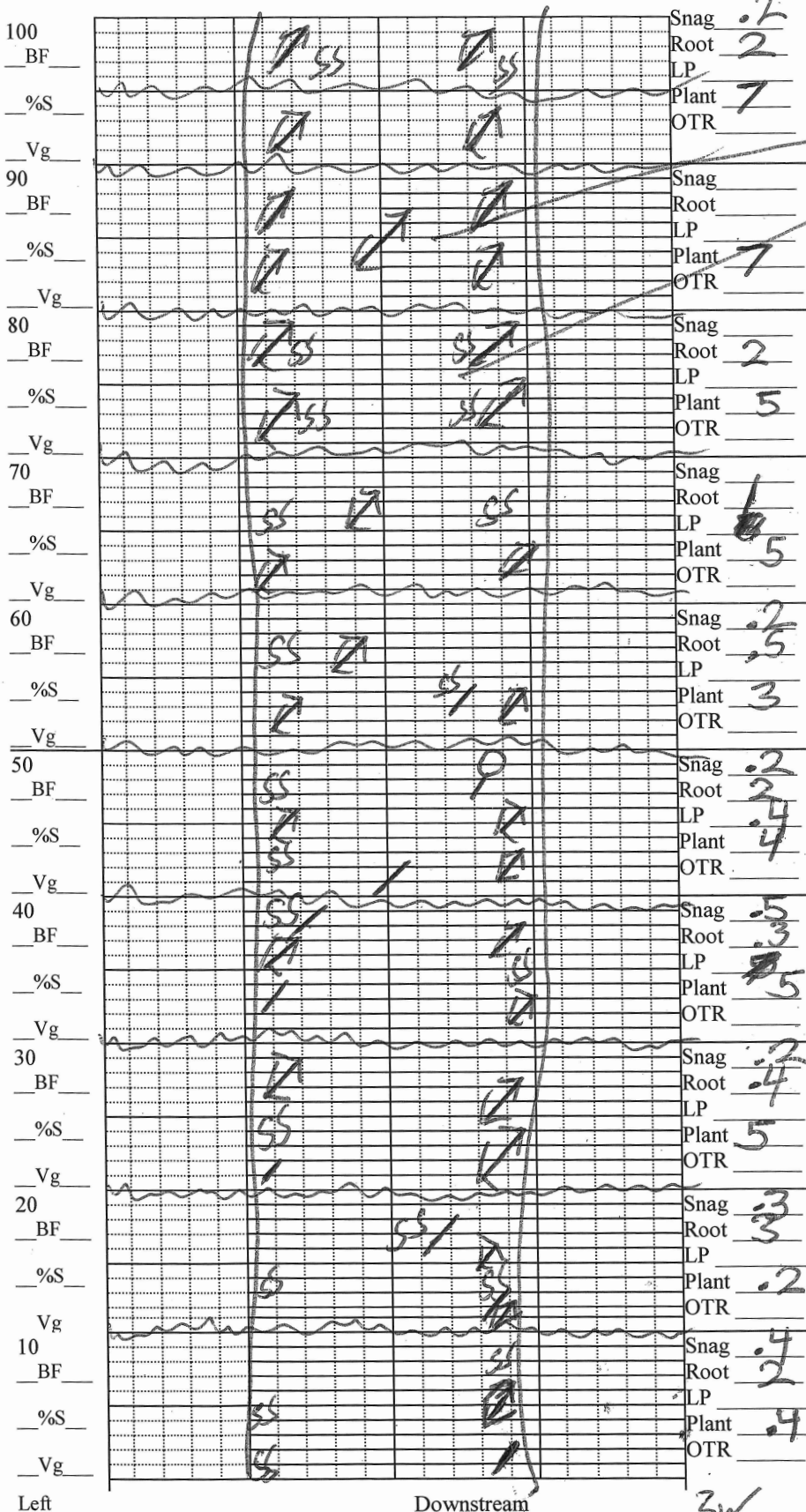
SEDIMENT / SUBSTRATE

Sediment Oils ☐ Absent ☐ Slight ☒ Moderate ☐ Profuse			Sediment Odors ☐ Normal ☐ Sewage ☒ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify):			Smothering of Substrates Sand Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐ Silt Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒ Algae Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐		
SUBSTRATE TYPE Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.2</u> <u>19.8</u> <u>5.99</u> <u>3.26</u> <u>35.4</u> <u>135.5</u> <u>0.06</u> <u>.5</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ VOB Bottom: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ TOTAL DEPTH Meter ID: <u>154179</u> <u>5</u>			Water Odors Normal ☐ Petroleum ☒ Sewage ☐ Chemical ☐ Other ☐		
Woody Debris (Snags) <u>0.7</u> <u>2</u> <u></u> Undercut Banks / Roots <u>4.4</u> <u>7</u> <u></u> Leaf Packs or Mat <u>.13</u> <u>1</u> <u></u> Aquatic Vegetation <u>13.9</u> <u>7</u> <u></u> Rock or Shell Rubble.. <u></u> <u></u> <u></u> Sand..... <u>80.84</u> <u>3</u> <u></u> Mud / Muck / Silt <u></u> <u></u> <u></u> Other <u></u> <u></u> <u></u> Other <u></u> <u></u> <u></u>			Water Surface Oils Normal ☐ Sheen ☐ Globbs ☒ Slick ☐ Other ☐			Color Tannic ☐ Green (Algae) ☒ Clear ☐ Other (Specify) ☐		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☐ ☐ ☒ ☒			Water 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: ☒ The antecedent hydrologic conditions have been met to my best knowledge.					
SAMPLING TEAM: <u>Nathan Mulkey / Frank Butera</u>			SIGNATURE: <u>Nathan Mulkey</u>			DATE: <u>10/19/22</u>		

Airport Drain on Eglon Ave

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 $\frac{2}{300} = 0.7\%$

☒ SS Roots/undercut banks $\frac{13.2}{300} = 4.4\%$

☒ P Leaf Packs (or mats) $\frac{4}{300} = 1.3\%$

☒ Macrophytes $\frac{41.6}{300} = 13.9\%$

☐
☐
☐

Velocity: 0.61
Note where velocity measures were taken. 90 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 3 m

Average depth 5 m

WQ & chemistry taken @ 90 m

Storet. 32010272

Field ID.

Date: 10/19/22

Sampled By. Nathan/Frank

Plants observed/other notes: see

30.47134

86.50978

30.47220

86.50965

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

SAMPLING AGENCY: 21FLPNS <i>FOEP NWROC</i>		STORET STATION NUMBER: <i>32010272</i>	DATE (MM/DD/YY): <i>10/19/22</i>	RECEIVING BODY OF WATER: <i>Choct Bay</i>
REMARKS: <i>Regulate M.I.P.s</i>	COUNTY: <i>Okaloosa</i>	<i>Airport Drain on Eglin</i>		FIELD ID/NAME:
WBID <i>760</i>		<i>AP-2022-10-10-28</i>	<i>APB</i>	<i>32010272</i>

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity <u>11</u>	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock) 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 <u>11</u>	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability <u>13</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>2</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 <u>0.01</u> <0.01 5 4 3 <u>2</u> 1
Habitat Smothering <u>2</u> ----- Primary Score <u>28</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 <u>2</u> 1
Secondary Habitat Components Artificial Channelization <u>3</u>	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank <u>6</u> Left Bank <u>5</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>9</u> Left Bank <u>1</u>	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>9</u> Left Bank <u>6</u> ----- Secondary Score <u>39</u>	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

TOTAL SCORE

Date: 10/19/22	Analyst: Nathan Miller	Signature: Nathan Miller
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SBID ID: 8586113 HA ID: 17969 SBID ID: 85684

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Airport Drain on Eglar County: Oklahoma Date: 10/19/22 Investigators: Nathan Malke

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		
	2			
	3			
	4			
	5			74
	6			
	7			
	8			
	9			
10	1	N		
	2	N		
	3	N		
	4			
	5			58
	6			
	7			
	8			
	9			
20	1	N		
	2			
	3			
	4			
	5			50
	6			
	7			
	8			
	9			
30	1	N		
	2	N		
	3	N		
	4			
	5			50
	6			
	7			
	8			
	9			
40	1	N		
	2	N		
	3	N		
	4			
	5			66
	6			
	7			
	8			
	9			
50	1	N		
	2			
	3			
	4			
	5			74
	6			
	7			
	8			
	9			

STORET Station Number: 32010272

Secchi depth 0.5
Estimated?

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 1
Habitat Assessment 1
SCI/Biorecon 1
Water sample 1
RQ ~~2010-02-11-28~~
2022-10-10-28

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: 85684

RPS ID: 9978

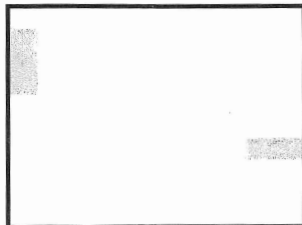
RPS Score: 0

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%.

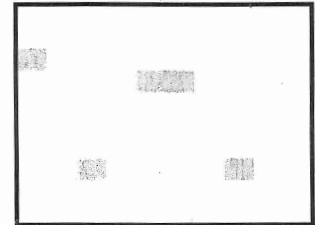
DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

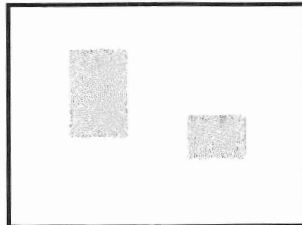
5% Macrophyte Coverage



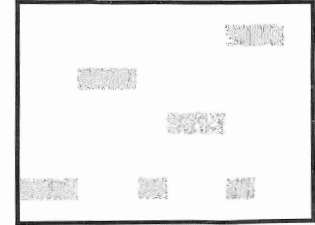
5% Macrophyte Coverage



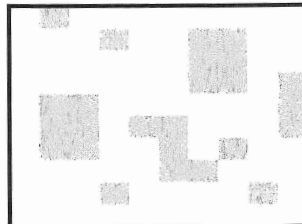
10% Macrophyte Coverage



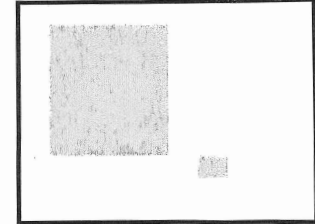
10% Macrophyte Coverage



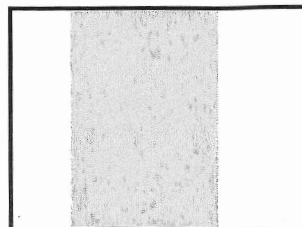
25% Macrophyte Coverage



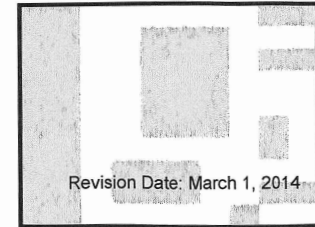
25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage



Station: Airport Drain (Jack's Creek)
 GPS: 30.47247 x -86509633
 Storet: 32010272 Field ID 32010272
 SBIO Sample ID: 85684
 Macro ID:

12297

Sampled : 10/19/2022
 Sampled By. F. Butera, N. Mulkey
 Location. Eglin AFB, Niceville, Okaloosa
 Receiving Waters: Jack's Lake, Choctawhatchee Bay
 LIMS ID: 2364096

	Taxa	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	C of C	Coll.	Verified
1	<i>Andropogon</i> sp.					1								
2	<i>Cyperus blepharoleptos</i> *								1		1			
3	<i>Eleocharis</i> (wispy viviparous)	D	D	D	D	D	D	1	C	D	D			
4	<i>Fuirena scirpoidea</i>				1							6.50		
5	<i>Juncus effusus</i>			1								3.25		
6	<i>Panicum repens</i>										1	0.00		
7	<i>Potamogeton illinoensis</i>	1	1											
8	<i>Sacciolepis striata</i>			1	1	1	1	1				5.35		
9	<i>Boehmeria cylindrica</i>	1		1				1				5.91		
10	<i>Hydrocotyle</i> sp.			1	1							2.00		
11	<i>Ludwigia repens</i>			1	1							5.20	Y	FB
12	<i>Mikania scandens</i>	1		1				1				1.95		
13	<i>Micranthemum umbros</i>	1	1	1	1	1				1				
14	<i>Nuphar luteum</i>								C			4.64		
15	<i>Polygonum hydropiperoides</i>			1			1	1				4.02		
16	<i>Rumex verticillatus</i>							1			1			
17	<i>Osmunda cinnamomoea</i>	1	1	1	1			1			1	6.44		
	Total	6	4	10	7	4	3	7	3	2	5			
	Taxa per section	5	3	9	6	3	2	7	1	1	4	Herb. Taxa		16
	Exotic Present	0	0	0	0	0	0	0	1	0	2	Woody Taxa		0
	Avg. taxa per section	4										Ferns		1
	sections with exotics	2										Macro Algae		0
	Exotic Taxa	2	Exotics per Section: 0.18									Total Taxa		17

* These taxa were observed fully within the stream channel.

Station: Airport Drain (Jack's Creek)
 GPS: 30.47247 x -86509633
 Storet: 32010272 Field ID 32010272

Plants seen above waterline. DO NOT COUNT towards LVS

	Taxa	
1	<i>Chasmanthium</i> sp.	1
2	<i>Paspalum</i> urvillei	1
3	<i>Bidens</i> alba	1
4	<i>Boehmeria</i> cylindrica	1
5	<i>Ipomoea</i> sp.	1
6	<i>Rubus</i> sp.	1
7	<i>Solidago</i> sp.	1
8	<i>Vitis</i> sp.	1
9	<i>Albizia</i> julibrissin	1
10	<i>Baccharis</i> sp.	1
11	<i>Callicarpa</i> americana	1
12	<i>Cinnamomum</i> camphora	1
13	<i>Ilex</i> sp. cultivar	1
14	<i>Magnolia</i> virginiana	1
15	<i>Myrica</i> cerifera	1
16	<i>Quercus</i> nigra	1
17	<i>Sabal</i> palmetto	1
18	<i>Sapium</i> sebiferum	1
19	<i>Osmunda</i> cinnamonmoea	1