



GADNR/EPD MACROINVERTEBRATE REFERENCE DATA
SOUTHERN COASTAL PLAIN ECOREGION (75)
Sea Island/Coastal Marsh & Sea Island Flatwoods - Tidal (75j & 75f) Data

75 Southern Coastal Plain Ecoregion					
75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams					
Station ID	Waterbody Name	Catchment Area (m2)	Basin Name	Major Basin Name	Collection Date
75j-16	Reference Site 1	3081898.18	Ogeechee Coastal	Ogeechee	1/19/2003
75j-31	Reference Site 2	8253980.249	Satilla	St. Marys - Satilla	1/27/2001
75j-37	Reference Site 3	1265885.155	Cumberland-St. Simons	St. Marys - Satilla	2/15/2003
75j-41	Reference Site 4	5567504.036	Cumberland-St. Simons	St. Marys - Satilla	2/14/2003
75f-124	Reference Site 5	7304766.177	Satilla	St. Marys - Satilla	1/28/2001

* Due to drought conditions during the sampling years and the possible need for separate metric indices for black water and clear water ecosystems some of the potential reference sites ranked as fair. Do not compare your individual test sites to these sites, compare your sites to the multi-metric index. Use the spreadsheets in this excel workbook (excel file) to calculate the metric index score and give a stream rating for your sample location.

The current goal of GADNR/EPD is to update the metric indices within the next 5 years for the entire Southern Coastal Plain Ecoregion (during non-drought condition). The second goal is to determine if the Sea Islands/Coastal Marsh Subecoregion for both tidal and non-tidal should have separate indices for black water and clear water streams.



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75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams metric scores							
Station ID	Waterbody Name	Simp'D	stdsimpd	NonInPct	stdnoninpct	TolerPct	stdtolpct
75j-16	Reference Site 1	0.929	0.00	1.80	100.00	0.90	100.00
75j-31	Reference Site 2	0.151	97.74	31.16	67.65	49.30	30.15
75j-37	Reference Site 3	0.206	90.85	2.11	99.73	69.47	0.00
75j-41	Reference Site 4	0.393	67.38	92.44	0.00	9.24	90.02
75f-124	Reference Site 5	0.277	81.91	74.58	19.71	10.83	87.65

DE

0.6

0.8

0.6

75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams metric scores						
Station ID	Waterbody Name	ShredPct	stdshredpct	PredPct	stdpredpct	Index Score
75j-16	Reference Site 1	1.35	23.50	0.00	0.00	45
75j-31	Reference Site 2	1.40	24.27	14.42	111.69	64
75j-37	Reference Site 3	6.84	100.00	8.42	65.23	71
75j-41	Reference Site 4	0.84	14.61	0.00	0.00	34
75f-124	Reference Site 5	0.00	65.22	3.75	30.98	57

DE

0.8

0.6



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		% Land use per Catchment Area for Reference Sites: 75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods				
		Stream Name and Sample Identification Number				
		<i>Reference Site 1</i>	<i>Reference Site 2</i>	<i>Reference Site 3</i>	<i>Reference Site 4</i>	<i>Reference Site 5</i>
Landuse	Year	75j-16	75j-31	75j-37	75j-41	75f-124
% Natural	1998	90.126	93.5657	94.6505	90.5816	92.7551
% Urban	1998	9.874	5.3856	5.3495	8.4168	5.5076
% Agriculture Total	1998	0	0	0	1.0016	1.4539
% Barren	1998	8.702	19.161	0.2853	0.6462	11.3356
% Natural	1994	90.126	89.8113	94.6505	90.5816	94.9414
% Urban	1994	9.874	0	5.3495	8.4168	0
% Agriculture Total	1994	0	0.6763	0	1.0016	2.5683
% Barren	1994	8.702	9.5124	0.2853	0.6462	2.5336



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		Water Chemistry Values for Reference Sites: 75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods				
		Stream Name and Sample Identification Number				
		<i>Reference Site 1</i>	<i>Reference Site 2</i>	<i>Reference Site 3</i>	<i>Reference Site 4</i>	<i>Reference Site 5</i>
Parameter	Chemical Units	75j-16	75j-31	75j-37	75j-41	75f-124
Air Temperature	°C	6.67	10	17.4	15.26	5
Water Temperature	°C	6.8	6.48	14.85	10.71	6.98
Specific Conductivity	mS/cm	4.37	0.1202	0.427	3.73	8.92
Dissolved Oxygen	%	121	43.6	77.6	83.99	60.4
Dissolved Oxygen	mg/l	14.6	5.6	8.03	9.28	7.26
pH	SU	4.48	5.72	6.21	5.89	6.72
Turbidity	NTU	25.7	3	10.5	4.6	0.96
Depth	m	0.15	0.2	0.1	0.1	0.2
Ammonia	mg/l as N	0.980	<0.03	<0.03	<0.03	<0.03
Nitrate-Nitrite	mg/l as N	<0.01	<0.01	<0.01	<0.01	0.053
Total Phosphorus	mg/l as P	<0.01	<0.01	0.323	<0.01	0.065
Alkalinity	mg/l as CaCO ₃	0.0	0.018	29.40	19.35	101.43
Hardness	mg/l as CaCO ₃	468.00	25.83	135.33	600.33	1067.00
Copper	mg/l	<0.002	<0.1	<0.002	<0.002	<0.1
Iron	mg/l	1.572	<0.1	2.897	0.500	0.363
Manganese	mg/l	0.041	<0.1	<0.004	<0.004	<0.1
Zinc	mg/l	<0.006	<0.1	<0.006	<0.006	<0.1



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Pebble Count % for Reference Sites: 75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods					
Stream Name and Sample Identification Number					
	<i>Reference Site 1</i>	<i>Reference Site 2</i>	<i>Reference Site 3</i>	<i>Reference Site 4</i>	<i>Reference Site 5</i>
Particle	75j-16	75j-31	75j-37	75j-41	75f-124
Silt/Clay	83	59	3	0	30
Sand	17	41	97	100	70



GADNR/EPD MACROINVERTEBRATE REFERENCE DATA
SOUTHERN COASTAL PLAIN ECOREGION (75)
Sea Island/Coastal Marsh & Sea Island Flatwoods - Tidal (75j & 75f) Data

Habitat Values for Reference Sites: 75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods					
Stream Name and Sample Identification Number					
	<i>Reference Site 1</i>	<i>Reference Site 2</i>	<i>Reference Site 3</i>	<i>Reference Site 4</i>	<i>Reference Site 5</i>
Habitat Parameters	75j-16	75j-31	75j-37	75j-41	75f-124
Epifaunal Substrate/Available Cover	13	15	14	16	13
Pool Substrate Characterization	13	13	8	13	15
Pool Variability	11	8	9	10	16
Sediment Deposition	17	19	8	11	18
Channel Flow Status	8	18	6	16	5
Channel Alteration	19	19	20	18	18
Channel Sinuosity	19	12	19	18	9
Bank Stability (Left Bank)	5	9	1	6	10
Bank Stability (Right Bank)	5	9	1	8	10
Vegetative Protection (Left Bank)	8	9	3	6	10
Vegetative Protection (Right Bank)	8	9	3	8	9
Riparian Vegetative Zone Width (Left Bank)	9	9	10	10	10
Riparian Vegetative Zone Width (Right Bank)	9	9	10	10	9
Total Habitat Score	144	158	112	150	152



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75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams
Reference Site 1 (75j-16)

Order	Family	Final ID	Individuals	TCR	Stage
Cyclopoida	Cyclopidae	Cyclopidae	1		X
Diptera	Chironomidae	<i>Chironomus sp.</i>	1		X
		<i>Polypedilum sp.</i>	3		X
		<i>Polypedilum tritum</i>	214		X
Isopoda	Asellidae	Caecidotea	1		X
		Nemata	2	TCR-2	X
Total Individuals			222		



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75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams
Reference Site 2 (75j-31)

Order	Family	Final ID	Individuals	TCR	Stage
Amphipoda	Crangonyctidae	<i>Crangonyx sp.</i>	20	8 @ TCR-2	A
Basommatophora	Ancylidae	<i>Laevapex diaphanus</i>	1		A
Coleoptera	Dytiscidae	<i>Copelatus caelatipennis</i>	9		A
		<i>Hydaticus bimarginatus</i>	2		A
		Hydroporini	4		L
Decapoda	Cambaridae	Cambarinae	1		A
		Cambarinae	1		I
		<i>Procambarus sp.</i>	1		A
		<i>Procambarus (Ortmannicus) sp.</i>	1		A
Diptera	Ceratopogonidae	Ceratopogonidae	2		X
	Chironomidae	<i>Chironomus sp.</i>	1		X
		<i>Clinotanytus sp.</i>	1		X
		<i>Dicrotendipes sp.</i>	2		X
		<i>Dicrotendipes simpsoni</i>	5		X
		<i>Gymnometriocnemus sp.</i>	3		X
		<i>Kiefferulus sp.</i>	75		X
		<i>Limnophyes sp.</i>	1		X
		<i>Natarsia A</i>	2		X
		<i>Polypedilum illinoense group</i>	11		X
		<i>Polypedilum tritum</i>	9		X
		<i>Pseudorthocladius sp.</i>	1	TCR-3	X
		<i>Tanytarsus V</i>	2		X
	Tabanidae	<i>Chrysops sp.</i>	1		X
		<i>Tabanus sp.</i>	3		X
	Tipulidae	<i>Erioptera sp.</i>	2		X
		<i>Pseudolimmophila sp.</i>	1		X

* continued on next page

75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams
Reference Site 2 (75j-31) Continued

Isopoda	Asellidae	<i>Caecidotea sp.</i>	25		A
Megaloptera	Sialidae	<i>Sialis sp.</i>	3		X
Odonata	Libellulidae	<i>Libellula sp.</i>	3		X
		<i>Pachydiplax longipennis</i>	1		X
Trichoptera	Leptoceridae	<i>Oecetis E</i>	1	TCR-2	X
	Limnephilidae	<i>Ironoquia sp.</i>	3		X
Veneroida	Pisidiidae	<i>Musculium sp.</i>	3		A
		Pisidiidae	2		A
		<i>Pisidium sp.</i>	3		A
		Oligochaeta	9		A
Total Individuals			215		



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75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams
Reference Site 3 (75j-37)

Order	Family	Final ID	Individuals	TCR	Stage
Amphipoda	Crangonyctidae	<i>Crangonyx sp.</i>	1	TCR-2	X
	Talitridae	<i>Hyalella azteca</i>	1		X
Diptera	Ceratopogonidae	<i>Bezzia complex</i>	8		X
	Chironomidae	Chironominae	2		X
		<i>Chironomus sp.</i>	7		X
		<i>Corynoneura sp.</i>	1		X
		<i>Labrundinia sp.</i>	1		X
		<i>Larsia sp.</i>	1		X
		<i>Polypedilum sp.</i>	13		X
		<i>Polypedilum flavum</i>	1		X
		<i>Polypedilum halterale group</i>	32		X
		<i>Polypedilum illinoense group</i>	2		X
		<i>Polypedilum scalaenum group</i>	72		X
		<i>Polypedilum trigonum</i>	2		X
		<i>Polypedilum tritum</i>	30		X
		<i>Zavrelimyia sp.</i>	13		X
Odonata	Libellulidae	<i>Pachydiplax longipennis</i>	1		X
		Oligochaeta	2		X
Total Individuals			190		



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75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams
Reference Site 4 (75j-41)

Order	Family	Final ID	Individuals	TCR	Stage
Amphipoda	Corophiidae	<i>Corophium sp.</i>	2		X
	Gammaridae	<i>Gammarus sp.</i>	140	94 @ TCR-2	X
Decapoda	Palaemonidae	<i>Palaemonetes sp.</i>	37	19 @ TCR-2	X
Diptera	Ceratopogonidae	<i>Bezzia complex</i>	1		X
	Chironomidae	<i>Goeldichironomus sp.</i>	2	TCR-2	X
		<i>Goeldichironomus devineyae</i>	4		X
		<i>Limnophyes sp.</i>	8		X
		<i>Polypedilum sp.</i>	2	1 @ TCR-2	X
		<i>Polypedilum halterale group</i>	1		X
Isopoda	Sphaeromatidae	<i>Cassidinidea lunifrons</i>	36	TCR-2	X
		Oligochaeta	5		X
Total Individuals			238		



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75j & 75f - Sea Island/Coastal Marsh & Sea Island Flatwoods - tidal reference streams
Reference Site 5 (75f-124)

Order	Family	Final ID	Individuals	TCR	Stage
Amphipoda	Corophiidae	<i>Corophium sp.</i>	26		A
	Crangonyctidae	<i>Crangonyx sp.</i>	2		A
	Gammaridae	<i>Gammarus sp.</i>	2		A
	Talitridae	<i>Orchestia uhleri</i>	2	TCR-2	A
Decapoda	Palaemonidae	<i>Palaemonetes paludosus</i>	119	TCR-2	A
Diptera	Ceratopogonidae	Ceratopogonidae	2		X
	Chironomidae	<i>Chironomus sp.</i>	10		X
		<i>Dicrotendipes sp.</i>	29		X
		<i>Dicrotendipes simpsoni</i>	3		X
		<i>Polypedilum halterale group</i>	6		X
		<i>Polypedilum illinoense group</i>	3		X
		<i>Polypedilum scalaenum group</i>	3		X
		<i>Procladius sp.</i>	2		X
	Dolichopodidae	Dolichopodidae	3		X
Isopoda	Anthuridae	<i>Cyathura sp.</i>	14		A
	Bopyridae	<i>Probopyrus pandalicola</i>	1	TCR-2	A
	Sphaeromatidae	<i>Cassidinidea lunifrons</i>	1	TCR-2	A
		<i>Sphaeroma sp.</i>	3	TCR-2	A
		Hirudinea	2		A
		Oligochaeta	7		A
Total Individuals			240		