



**GADNR/EPD MACROINVERTEBRATE REFERENCE DATA**  
**SOUTHEASTERN PLAINS ECOREGION (65)**  
**Atlantic Southern Loam Plains - 65I Data**

<b>(65) SOUTHEASTERN PLAINS ECOREGION</b>				
<b>65I Atlantic Southern Loam Plains - reference streams</b>				
<b>Waterbody Name</b>	<b>Catchment Area (m2)</b>	<b>Basin Name</b>	<b>Major Basin Name</b>	<b>Collection Date</b>
<i>Reference Site 1</i>	28568130.84	Upper Ogeechee	Ogeechee	01/21/2001
<i>Reference Site 2</i>	3034109.524	Lower Ocmulgee	Altamaha	01/14/2001
<i>Reference Site 3</i>	35756804.8	Lower Ocmulgee	Altamaha	01/14/2001
<i>**Reference Site 4</i>	6944269.892	Alapaha	Suwannee	01/04/2003
<i>Reference Site 5</i>	22817523.08	Alapaha	Suwannee	02/01/2003

\*\* Reference Site 4 will be removed from inclusion in MMI, due to data results, please do not use for data comparisons



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**SOUTHEASTERN PLAINS ECOREGION (65)**  
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% Land use per Catchment Area for Reference Sites: 65I- Atlantic Southern Loam Plains						
Sample Number						
					<i>Reference Site 4**</i>	
Land use	Year	<i>Reference Site 1</i>	<i>Reference Site 2</i>	<i>Reference Site 3</i>		<i>Reference Site 5</i>
% Forested	1998	53.60	41.26	51.81	85.19	49.88
% Urban	1998	0.00	0.01	0.00	2.36	7.92
% Agriculture Total	1998	26.76	40.10	27.79	2.88	11.28
% Barren	1998	9.71	9.16	7.05	5.54	24.84
% Wetland	1998	11.12	9.51	3.82	4.02	6.07
% Forested	1994	56.75	35.29	47.78	85.19	49.88
% Urban	1994	4.26	6.63	5.55	2.36	7.92
% Agriculture Total	1994	21.78	30.25	26.25	2.88	11.28
% Barren	1994	2.94	4.77	8.59	5.54	24.84
% Wetland	1994	14.25	23.05	11.83	4.02	6.07

*Note: 1994 is \*MRLC data and 1998 is \*\*GLUT data (can not compare)*

\* Multi Resolution Land Characteristics Consortium

\*\* Georgia Land Use Trends

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**GADNR/EPD MACROINVERTEBRATE REFERENCE DATA**  
**SOUTHEASTERN PLAINS ECOREGION (65)**  
**Atlantic Southern Loam Plains - 65l Data**

Water Chemistry Values for Reference Sites: 65l - Atlantic Southern Loam Plains						
		Sample Number				
		Reference Site 1	Reference Site 2	Reference Site 3	Reference Site 4**	Reference Site 5
Parameters	Chemical Units					
Air Temperature	°C	5	16.41	8.5	8.27	13.58
Conductivity	mS/cm	0.1345	0.054	0.0724	0.0838	0.0562
Dissolved Oxygen	%	75.1	73.6	78.4	63.5	96.6
Dissolved Oxygen	mg/l	9.31	8.31	9.5	7.56	10.52
pH	SU	6.92	5.31	5.71	4.98	5.8
Turbidity	NTU	4.7	2.8	0.3	17.1	37.7
Water Temperature	°C	6.64	10.19	7.27	8.03	11.38
Depth	m	0.2	0.2	0.3	0.2	0.2
Ammonia	mg/l as N	BD	0.054	0.073	0.042	BD
Copper	mg/l	BD	BD	BD	0.003	BD
Manganese	mg/l	BD	BD	BD	0.141	BD
Nitrate-Nitrite	mg/l as N	0.039	0.013	0.358	BD	BD
Total Phosphorus	mg/l as P	BD	0.018	0.016	BD	0.178
Zinc	mg/l	BD	BD	BD	0.030	BD
Iron	mg/l	0.248	BD	0.140	0.293	0.315
Nitrite	mg/l as N	BD	BD	BD	0.015	BD
Alkalinity	mg/L as CaCO <sub>3</sub>	50.59	1.64	3.69	0.0	5.04
Hardness	mg/L as CaCO <sub>3</sub>	51.26	13.86	16.58	27.67	21.20

BD = below detection

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Pebble Count % for Reference Sites: 65l - Atlantic Southern Loam Plains					
	Sample Number				
<b>Particle</b>	<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>
Silt/Clay	5	16	5	5	12
Sand	95	84	95	95	88
Gravel	1	0	0	0	0
Cobble	0	0	0	0	0
Boulder	0	0	0	0	0
Bedrock	0	0	0	0	0

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**GADNR/EPD MACROINVERTEBRATE REFERENCE DATA**  
**SOUTHEASTERN PLAINS ECOREGION (65)**  
**Atlantic Southern Loam Plains - 65I Data**

Habitat Values for Reference Sites: 65I Atlantic Southern Loam Plains					
Habitat Parameters	Sample Number				
	Reference Site 1	Reference Site 2	Reference Site 3	Reference Site 4**	Reference Site 5
Epifaunal Substrate/Available Cover	16.00	16.00	16.00	14.00	18.00
Embeddedness	N/A	N/A	N/A	N/A	N/A
Velocity/Depth Regime	N/A	N/A	N/A	N/A	N/A
Pool Substrate Characterization	15.00	16.00	17.00	7.00	13.00
Pool Variability	16.00	18.00	17.00	7.00	18.00
Sediment Deposition	17.00	18.00	18.00	14.00	11.00
Channel Flow Status	18.00	17.00	17.00	16.00	16.00
Channel Alteration	18.00	19.00	18.00	20.00	19.00
Frequency of Riffles (or bends)	N/A	N/A	N/A	N/A	N/A
Channel Sinuosity	19.00	16.00	9.00	20.00	18.00
Bank Stability (Left Bank)	9.00	9.00	9.00	9.00	9.00
Bank Stability (Right Bank)	9.00	9.00	9.00	9.00	9.00
Vegetative Protection (Left Bank)	8.00	8.00	9.00	6.00	8.00
Vegetative Protection (Right Bank)	8.00	8.00	8.00	6.00	9.00
Riparian Vegetative Zone Width (Left Bank)	9.00	9.00	8.00	10.00	9.00
Riparian Vegetative Zone Width (Right Bank)	9.00	9.00	8.00	10.00	7.00
<b>Total Habitat Score</b>	<b>171.00</b>	<b>172.00</b>	<b>163.00</b>	<b>148.00</b>	<b>164.00</b>

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**SOUTHEASTERN PLAINS ECOREGION (65)**  
**Atlantic Southern Loam Plains - 65l Data**

<b>(65) SOUTHEASTERN PLAINS ECOREGION</b>	
<b>65l Atlantic Southern Loam Plains - reference streams</b>	
<b>Waterbody Name</b>	<b>MMI Score</b>
<i>Reference Site 1</i>	94
<i>Reference Site 2</i>	52
<i>Reference Site 3</i>	66
<i>Reference Site 4**</i>	16
<i>Reference Site 5</i>	74

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**GADNR/EPD MACROINVERTEBRATE REFERENCE DATA**  
**SOUTHEASTERN PLAINS ECOREGION (65)**  
**Atlantic Southern Loam Plains - 65I Data**

**65I - Atlantic Southern Loam Plains - reference streams**  
**Reference Site 1**

Order	Family	Final ID	Individuals	TCR	Stage
		Oligochaeta	14		X
Amphipoda	Talitridae	<i>Hyalella azteca</i>	19	TCR-2	X
Coleoptera	Elmidae	<i>Ancyronyx variegatus</i>	2		L
		<i>Dubiraphia sp.</i>	1		L
		<i>Dubiraphia bivittata</i>	1		A
		<i>Macronychus glabratus</i>	7		A
		<i>Macronychus glabratus</i>	7		L
		<i>Stenelmis sp.</i>	4		L
Decapoda	Cambaridae	Cambarinae	3		X
Diptera	Chironomidae	<i>Apedilum sp.</i>	3		X
		<i>Conchapelopia sp.</i>	6	TCR-2	X
		<i>Harnischia Complex D</i>	1		X
		<i>Helopelopia sp.</i>	1		X
		<i>Natarsia sp.</i>	1	TCR-2	X
		Orthoclaadiinae	1		X
		<i>Orthocladus sp.</i>	1		X
		<i>Parametriocnemus sp.</i>	4		X
		<i>Paratanytarsus sp.</i>	1		X
		<i>Polypedilum sp.</i>	1		X
		<i>Polypedilum aviceps</i>	13		X
		<i>Polypedilum fallax group</i>	3	TCR-2	X
		<i>Polypedilum illinoense group</i>	4		X
		<i>Rheotanytarsus sp.</i>	4		X
		<i>Rheotanytarsus A</i>	3		X
		<i>Rheotanytarsus pellucidus</i>	2		X
		<i>Stempellinella sp.</i>	1		X

\* continued on next page

**651 - Atlantic Southern Loam Plains - reference streams**  
**Reference Site 1 Continued**

Order	Family	Final ID	Individuals	TCR	Stage
Diptera	Chironomidae	Tanypodinae	1		X
		<i>Tanytarsus sp.</i>	1		X
		<i>Thienemannimyia group sp.</i>	1	TCR-2	X
		<i>Tribelos jucundus</i>	1		X
		<i>Xestochironomus sp.</i>	1		X
	Simuliidae	<i>Prosimulium sp.</i>	1		X
	Tabanidae	<i>Tabanus sp.</i>	1		X
	Tipulidae	<i>Tipula sp.</i>	3		X
		Tipulidae	3		X
Ephemeroptera	Ephemeridae	<i>Hexagenia limbata</i>	1		X
	Heptageniidae	<i>Stenonema femoratum</i>	5	TCR-2	X
Megaloptera	Corydalidae	<i>Nigronia serricornis</i>	4		X
	Sialidae	<i>Sialis sp.</i>	1		X
Neotaenioglossa	Pleuroceridae	<i>Elimia sp.</i>	25	TCR-2	X
		<i>Pleurocera sp.</i>	56		X
Odonata	Coenagrionidae	Coenagrionidae	2		X
Plecoptera	Perlidae	<i>Acroneuria sp.</i>	1		X
Trichoptera	Calamoceratidae	<i>Anisocentropus pyraloides</i>	2		X
	Hydropsychidae	<i>Cheumatopsyche sp.</i>	5		X
	Limnephilidae	Limnephilidae	2		X
	Polycentropodidae	<i>Polycentropus sp.</i>	1		X
Veneroida	Corbiculidae	<i>Corbicula fluminea</i>	2	TCR-2	X
<b>Total Individuals</b>			228		





**GADNR/EPD MACROINVERTEBRATE REFERENCE DATA**  
**SOUTHEASTERN PLAINS ECOREGION (65)**  
**Atlantic Southern Loam Plains - 65I Data**

**65I - Atlantic Southern Loam Plains - reference streams**  
**Reference Site 2**

Order	Family	Final ID	Individuals	TCR	Stage
		Oligochaeta	7		X
Amphipoda	Talitridae	<i>Hyalella azteca</i>	3		X
Coleoptera	Dytiscidae	<i>Hydroporus (Neoporus) sp.</i>	1		L
	Elmidae	<i>Microcylloepus pusillus</i>	1		A
	Elmidae	<i>Stenelmis sp.</i>	3		L
Decapoda	Cambaridae	Cambarinae	3		X
Diptera	Ceratopogonidae	<i>Bezzia complex</i>	2		X
	Chironomidae	Chironomidae	2		X
		<i>Chironomus sp.</i>	2		X
		<i>Conchapelopia sp.</i>	1		X
		<i>Dicrotendipes sp.</i>	6		X
		<i>Glyptotendipes sp.</i>	4		X
		<i>Harnischia Complex D</i>	1		X
		<i>Helopelopia sp.</i>	1	TCR-2	X
		<i>Heterotrissocladius sp.</i>	1		X
		<i>Hydrobaenus sp.</i>	2		X
		<i>Kiefferulus sp.</i>	5	TCR-2	X
		<i>Nanocladius sp.</i>	12	TCR-2	X
		Orthoclaadiinae	1		X
		<i>Parachironomus chaetaolus complex</i>	1	TCR-2	X
		<i>Parametriocnemus sp.</i>	14		X
		<i>Polypedilum sp.</i>	2		X
		<i>Polypedilum illinoense group</i>	7		X
		<i>Polypedilum tritum</i>	4	TCR-2	X
		<i>Stenochironomus sp.</i>	1		X
		<i>Tanypus sp.</i>	2		X
		<i>Tvetenia sp.</i>	112		X
	Simuliidae	<i>Prosimulium sp.</i>	13		X
		<i>Simulium sp.</i>	4		X
	Syrphidae	<i>Neoascia sp.</i>	1	TCR-2	X
	Tabanidae	<i>Tabanus sp.</i>	1		X
Isopoda	Asellidae	<i>Caecidotea sp.</i>	17		X

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**651 - Atlantic Southern Loam Plains - reference streams**  
**Reference Site 2 Continued**

Order	Family	Final ID	Individuals	TCR	Stage
Trichoptera	Limnephilidae	<i>Hesperophylax sp.</i>	1	TCR-2	X
	Phryganeidae	<i>Agrypnia sp.</i>	1	TCR-2	X
	Polycentropodidae	<i>Polycentropus sp.</i>	1	TCR-2	X
<b>Total Individuals</b>			240		



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**65I - Atlantic Southern Loam Plains - reference streams**  
**Reference Site 3**

Order	Family	Final ID	Individuals	TCR	Stage
		Oligochaeta	1		X
Amphipoda	Talitridae	<i>Hyalella azteca</i>	57		X
Basommatophora	Physidae	<i>Physella</i> sp.	1		X
	Planorbidae	<i>Gyraulus</i> sp.	6		X
Coleoptera	Dytiscidae	<i>Hydroporus (Neoporus)</i> sp.	3		A
		<i>Hydroporus (Neoporus)</i> sp.	1		L
		<i>Laccophilus</i> sp.	3	TCR-2	L
	Hydrophilidae	<i>Hydrochus rugosus</i>	1	sp. TCR - 2	A
Decapoda	Cambaridae	Cambarinae	2		X
Diptera	Ceratopogonidae	<i>Bezzia complex</i>	3		X
	Chironomidae	<i>Ablabesmyia peleensis</i>	1	TCR-2	X
		Chironomidae	2		X
		<i>Chironomus ochreateus</i>	1		X
		<i>Clinotanypus</i> sp.	1		X
		<i>Conchapelopia</i> sp.	1		X
		<i>Dicrotendipes</i> sp.	7		X
		<i>Dicrotendipes leucoscelis</i>	3		X
		<i>Dicrotendipes simpsoni</i>	2		X
		<i>Glyptotendipes</i> sp.	13		X
		<i>Glyptotendipes paripes</i>	3	1 - TCR-2	X
		<i>Heterotrissocladius</i> sp.	5		X
		<i>Limnophyes</i> sp.	1	TCR-2	X
		<i>Orthocladius</i> sp.	3		X
		<i>Orthocladius oliveri</i>	10	1 - TCR-2	X
		<i>Orthocladius vaillanti</i>	1		X
		<i>Parachironomus</i> sp.	2		X
		<i>Parachironomus tenuicaudatus complex</i>	1		X

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651 - Atlantic Southern Loam Plains - reference streams

Reference Site 3 Continued

Order	Family	Final ID	Individuals	TCR	Stage
Diptera	Chironomidae	<i>Parametriocnemus sp.</i>	3		X
		<i>Paratanytarsus E</i>	1	TCR-2	X
		<i>Phaenopsectra sp.</i>	2		X
		<i>Polypedilum sp.</i>	1		X
		<i>Polypedilum fallax group</i>	1		X
		<i>Polypedilum illinoense group</i>	3		X
		<i>Polypedilum tritum</i>	6		X
		<i>Procladius sp.</i>	7		X
		<i>Stenochironomus sp.</i>	1		X
		<i>Tanytarsus sp.</i>	4		X
		<i>Tanytarsus D</i>	2	1-TCR-2	X
		<i>Tribelos jucundus</i>	1		X
		<i>Zavreliella marmorata</i>	2		X
	Simuliidae	<i>Simulium sp.</i>	1		X
Ephemeroptera	Caenidae	<i>Caenis sp.</i>	15		X
Isopoda	Asellidae	<i>Caecidotea</i>	3		X
		<i>Lirceus sp.</i>	42		X
Odonata	Coenagrionidae	Coenagrionidae	4		X
Trichoptera	Phryganeidae	<i>Agrypnia sp.</i>	1		X
		<i>Ptilostomis sp.</i>	1		X
	Polycentropodidae	<i>Neureclipsis sp.</i>	2		X
		<i>Polycentropus sp.</i>	2		X
		<b>Total Individuals</b>	240		



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**65I - Atlantic Southern Loam Plains - reference streams**  
**Reference Site 4\*\***

Order	Family	Final ID	Individuals	TCR	Stage
		Oligochaeta	18		X
Amphipoda	Gammaridae	<i>Gammarus sp.</i>	21	TCR-2	X
	Curculionidae	<i>Anchytarsus bicolor</i>	2		L
Coleoptera	Dytiscidae	<i>Agabus sp.</i>	1		L
		Dytiscidae	1	TCR-2	L
	Elmidae	<i>Dubiraphia sp.</i>	2		A
Diptera	Ceratopogonidae	<i>Bezzia complex</i>	11		X
	Chironomidae	<i>Corynoneura sp.</i>	2		X
		<i>Eukiefferiella brehmi group</i>	17		X
		<i>Heterotrissocladius cladwell/boltoni complex</i>	5		X
		<i>Mesocricotopus loticus</i>	2	1-TCR-2, 1-TCR-3	X
		Orthoclaadiinae	1		X
		<i>Polypedilum illinoense group</i>	13		X
		<i>Tribelos fuscicorne</i>	2		X
		<i>Xylotopus par</i>	1		X
		<i>Zalutschia briani</i>	6		X
	Culicidae	<i>Culex sp.</i>	4		X
	Empididae	Empididae	3		X
	Tipulidae	Tipulidae	2		X
Isopoda	Asellidae	Asellidae	17		X
		Caecidotea	15		X
		<i>Lirceus sp.</i>	27		X
Tubificida	Lumbricidae	Lumbricidae	1		X
<b>Total Individuals</b>			174		

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**Reference Site 5**

Order	Family	Final ID	Individuals	TCR	Stage
		Oligochaeta	4		X
Amphipoda	Talitridae	<i>Hyalella azteca</i>	21	1 TCR-3	X
Coleoptera	Dytiscidae	<i>Hygrotus farctus</i>	6		L
	Elmidae	<i>Dubiraphia sp.</i>	4		L
Diptera	Ceratopogonidae	<i>Bezzia complex</i>	1		X
	Chironomidae	<i>Ablabesmyia mallochi</i>	6		X
		Chironominae	1		X
		<i>Corynoneura sp.</i>	9		X
		<i>Cryptochironomus sp.</i>	1		X
		<i>Hydrobaenus sp.</i>	5		X
		<i>Labrundinia pilosella</i>	1		X
		<i>Mesocricotopus loticus</i>	1		X
		<i>Microtendipes pedellus group</i>	3	1 TCR-2	X
		<i>Nanocladius sp.</i>	1		X
		<i>Orthocladius oliveri</i>	21	2 TCR-2, 1 TCR-3	X
		<i>Parachironomus sp.</i>	1		X
		<i>Parakiefferiella D</i>	1		X
		<i>Parametriocnemus sp.</i>	1		X
		<i>Paratanytarsus sp.</i>	4	3 TCR-2	X
		<i>Paratanytarsus dissimilis</i>	27	4 TCR-2	X
		<i>Phaenopsectra/Tribelos complex</i>	1		X
		<i>Polypedilum sp.</i>	2	1 TCR-2	X
		<i>Polypedilum flavum</i>	2		X
		<i>Polypedilum tritum</i>	5		X
		<i>Rheotanytarsus sp.</i>	4	1 TCR-2	X
		<i>Rheotanytarsus A</i>	2		X
		<i>Rheotanytarsus exiguus group</i>	9		X
		<i>Stempellinella A</i>	2	1 TCR-2	X

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651 - Atlantic Southern Loam Plains - reference streams

Reference Site 5 Continued

Order	Family	Final ID	Individuals	TCR	Stage
Diptera	Chironomidae	Tanytarsini	4		X
		<i>Tanytarsus sp.</i>	22	3 TCR-2	X
		<i>Thienemannimyia group</i>	3		X
		<i>Tribelos sp.</i>	2		X
		<i>Tribelos jucundus</i>	6	1 TCR-2	X
		<i>Tvetenia bavarica group</i>	1		X
	Simuliidae	Simuliidae	2		X
		<i>Simulium sp.</i>	30		X
	Tipulidae	<i>Molophilus sp.</i>	1	TCR-2	X
		Tipulidae	1		X
Ephemeroptera	Baetidae	Baetidae	2		X
	Heptageniidae	Heptageniidae	2		X
	Leptophlebiidae	Leptophlebiidae	2		X
Heteroptera	Corixidae	Corixidae	1		X
Isopoda	Asellidae	<i>Caecidotea sp.</i>	3	1 TCR-2	X
Megaloptera	Sialidae	<i>Sialis sp.</i>	1		X
Trichoptera	Hydropsychidae	<i>Cheumatopsyche sp.</i>	1		X
	Leptoceridae	Leptoceridae	1		X
	Limnephilidae	Limnephilidae	1		X
	Phryganeidae	<i>Agrypnia sp.</i>	1		X
	Rhyacophilidae	Rhyacophilidae	1		X
Veneroida	Pisidiidae	Pisidiidae	3	TCR-2	X
Total Individuals			237		