



Maine Department of Environmental Protection  
Biological Monitoring Program  
Aquatic Life Classification Attainment Report

Station Information

**Station Number: S-303**  
Waterbody: Frost Gulley Brook - Station 303  
Town: Freeport  
Directions: ABOVE

DEP Drainage: Piscataqua - Presumpscot - Saco  
HUC8: 01060001  
HUC8 Name: Presumpscot  
Latitude: 43 51 39.94 N  
Longitude: 70 5 39.44 W  
Stream Order: 1

Sample Information

**Log Number: 1920**  
Subsample Factor: X1

Type of Sample: ROCK BAG  
Replicates: 3

Date Deployed: 7/8/2010  
Date Retrieved: 8/11/2010

Classification Attainment

**Statutory Class: A**  
Model Result with P>.6: B  
Date Last Calculated: 3/7/2011

**Final Determination: B**  
**Reason for Determination: Model**  
Comments: Class A (.23)

Date: 3/7/2011

Model Probabilities

First Stage Model				C or Better Model	
Class A	0.32	Class C	0.25	Class A, B, or C	1.00
Class B	0.43	NA	0.00	Non-Attainment	0.00

  

B or Better Model		A Model	
Class A or B	0.80	Class A	0.23
Class C or Non-Attainment	0.20	Class B or C or Non-Attainment	0.77

Model Variables

01 Total Mean Abundance	122.00	18 Relative Abundance Ephemeroptera	0.21
02 Generic Richness	49.00	19 EPT Generic Richness	16.00
03 Plecoptera Mean Abundance	0.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	16.17
04 Ephemeroptera Mean Abundance	25.33	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	4.43	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	3.75
06 Hilsenhoff Biotic Index	5.43	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	13.67
07 Relative Abundance - Chironomidae	0.53	28 EP Generic Richness/14	0.57
08 Relative Generic Richness Diptera	0.41	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	3.33		
11 <i>Cheumatopsyche</i> Abundance	1.00		
12 EPT Generic Richness/ Diptera	0.80		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.01		
15 Perlidae Mean Abundance	0.00		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	2.75		
(Family Functional Group)			
17 Chironomini Abundance (Family	29.59		
Functional Group)			

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Micropsectra</i>	13.25
2	<i>Polypedilum</i>	11.56
3	<i>Maccaffertium</i>	11.20
4	<i>Microtendipes</i>	10.15
5	<i>Acerpenna</i>	6.56



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Date Retrieved: 8/11/2010

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 20.6 deg C  
Dissolved Oxygen: 8.3 mg/l  
Specific Conductance: 275 uS/cm  
Velocity: 21 cm/s  
pH:  
Wetted Width: 2.2 m  
Bankfull Width: 7.6 m  
Depth: 25 cm

**Waterbody Information - Retrieval**

Temperature: 19.4 deg C  
Dissolved Oxygen: 8.2 mg/l  
Specific Conductance: 265 uS/cm  
Velocity: 31 cm/s  
pH: 7.41  
Wetted Width: 2.9 m  
Bankfull Width: 7.6 m  
Depth: 30 cm

**Water Chemistry - 8/11/2010**

Ammonia As Nitrogen	<0.01 mg/l	Soluble Reactive Phosphorus	ug/l
Nitrate+nitrite As N	0.28 mg/l	Total Phosphorus	0.024 mg/l
Total Kjeldahl Nitrogen	0.2 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	2.2 mg/l	Total Dissolved Solids	180 mg/l

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Dense	Rolling
Upland Hardwood		
Urban		

<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Altered Hydrology	Above Town	Boulder 5 %
	Above Urban NPS	Gravel 15 %
		Rubble/Cobble 55 %
		Sand 25 %

**Landcover Summary - 2004 Data**

Total Area (ac)	1117	High Int. Dev. %	0.5	Water %	0.8	Non-vegetated %	0.2
		Med Int. Dev. %	0.9	Wetland %	1.5	Tilled Agriculture %	1.0
		Low Int. Dev. %	7.1	Upland Woody %	72.8	Grassland %	12.0
		Development %	8.4	Natural %	74.3	Human Altered %	24.9
						Impervious %	7.6

**Sample Comments**

7/8/2010 BANKS ERODED.



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Subsample Factor: X1

Replicates: 3

Calculated: 3/7/2011

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Gordius</i>	06010101001	0.33	0.33		--	0.3	0.3
<i>Stylodrilus</i>	08020101004		1.00		--		0.8
<i>Stylodrilus heringianus</i>	08020101004001	1.00			--	0.8	
Chloroperlidae	09020208	0.33	0.33		--	0.3	0.3
<i>Boyeria</i>	09020301004		1.00	2	PR		0.8
<i>Boyeria vinosa</i>	09020301004012	1.00			--	0.8	
Calopterygidae	09020307	1.00	1.00		--	0.8	0.8
<i>Calopteryx</i>	09020307043		0.33	5	PR		0.3
<i>Calopteryx maculata</i>	09020307043088	0.33			--	0.3	
<i>Baetis</i>	09020401001	0.33	0.33	4	CG	0.3	0.3
<i>Acerpenna</i>	09020401007	1.00	8.00	5	CG	0.8	6.6
<i>Acerpenna macdunnoughi</i>	09020401007001	6.67			--	5.4	
<i>Acerpenna pygmaea</i>	09020401007011	0.33			--	0.3	
<i>Stenacron</i>	09020402014	0.67	0.67	7	SC	0.5	0.5
<i>Maccaffertium</i>	09020402015	13.33	13.67	4	SC	10.9	11.2
<i>Maccaffertium modestum</i>	09020402015051	0.33			--	0.3	
Leptophlebiidae	09020406	1.33	1.33		--	1.1	1.1
<i>Paraleptophlebia</i>	09020406026	1.00	1.00	1	CG	0.8	0.8
<i>Ephemerella</i>	09020410035	0.33	0.33	1	CG	0.3	0.3
<i>Dolophilodes</i>	09020601001	0.67	0.67	0	CF	0.5	0.5
<i>Polycentropus</i>	09020603010	6.00	6.00	6	PR	4.9	4.9
<i>Cheumatopsyche</i>	09020604015	1.00	1.00	5	CF	0.8	0.8
<i>Hydropsyche</i>	09020604016	0.33	3.33	4	CF	0.3	2.7
<i>Hydropsyche sparna</i>	09020604016032	3.00			--	2.5	
<i>Rhyacophila</i>	09020605019	1.00	2.33	2	PR	0.8	1.9
<i>Rhyacophila fuscula</i>	09020605019060	1.33			PR	1.1	
<i>Lepidostoma</i>	09020611064	0.67	0.67	1	SH	0.5	0.5
<i>Psilotreta</i>	09020614068	0.33	0.33	0	SC	0.3	0.3
Leptoceridae	09020618				--		
<i>Oecetis</i>	09020618078		1.67	8	PR		1.4
<i>Oecetis persimilis</i>	09020618078157	1.67			--	1.4	
<i>Nigronia</i>	09020701003		0.33	0	PR		0.3
<i>Nigronia serricornis</i>	09020701003003	0.33			--	0.3	
Chironomidae	09021011	2.00			--	1.6	
<i>Ablabesmyia</i>	09021011001		0.34	8	PR		0.3
<i>Ablabesmyia mallochi</i>	09021011001004	0.33			--	0.3	
<i>Conchapelopia</i>	09021011004	0.33	0.34	6	PR	0.3	0.3
<i>Nilotanyus</i>	09021011012		0.34	6	PR		0.3



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		Actual	Adjusted			Actual	Adjusted
<i>Nilotanypus fimbriatus</i>	09021011012027	0.33			--	0.3	
<i>Rheopelopia</i>	09021011017	0.33	0.34		PR	0.3	0.3
<i>Trissopelopia</i>	09021011021		0.69		PR		0.6
<i>Trissopelopia ogemawi</i>	09021011021042	0.67			--	0.5	
<i>Zavreliomyia</i>	09021011022		0.69	8	PR		0.6
<i>Zavreliomyia thryptica group</i>	09021011022045	0.67			PR	0.5	
<i>Corynoneura</i>	09021011036	0.33	0.34	7	CG	0.3	0.3
<i>Orthocladius</i>	09021011050		0.34	6	CG		0.3
<i>Orthocladius lignicola</i>	09021011050100	0.33			--	0.3	
<i>Symposiocladius lignicola</i>	09021011050100	0.33			--	0.3	
<i>Parametriocnemus</i>	09021011053	2.33	2.41	5	CG	1.9	2.0
<i>Thienemanniella</i>	09021011062	0.33	0.34	6	CG	0.3	0.3
<i>Tvetenia</i>	09021011065		2.06	5	CG		1.7
<i>Tvetenia paucunca</i>	09021011065114	2.00			--	1.6	
<i>Micropsectra</i>	09021011070	15.67	16.17	7	CG	12.8	13.3
<i>Rheotanytarsus</i>	09021011072	7.00	7.22	6	CF	5.7	5.9
<i>Tanytarsus</i>	09021011076	2.33	2.41	6	CF	1.9	2.0
<i>Microtendipes</i>	09021011094		12.39	6	CF		10.2
<i>Microtendipes pedellus group</i>	09021011094166	0.67			--	0.5	
<i>Microtendipes rydalensis group</i>	09021011094168	11.33			--	9.3	
<i>Nilothauma</i>	09021011095	0.33	0.34	2	--	0.3	0.3
<i>Phaenopsectra</i>	09021011101		2.75	7	SC		2.3
<i>Phaenopsectra obediens</i>	09021011101182	2.00			SC	1.6	
<i>Phaenopsectra punctipes</i>	09021011101183	0.67			SC	0.5	
<i>Polypedilum</i>	09021011102		14.11	6	SH		11.6
<i>Polypedilum aviceps</i>	09021011102181	10.67			--	8.7	
<i>Polypedilum laetum</i>	09021011102186	0.33			--	0.3	
<i>Polypedilum scalaenum group</i>	09021011102189	0.33			--	0.3	
<i>Polypedilum angulum</i>	09021011102198	2.33			--	1.9	
<i>Rheosmittia</i>	09021011122	0.67	0.69		--	0.5	0.6
<i>Simulium</i>	09021012047			4	CF		
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.3	0.3
<i>Ectopria</i>	09021109059		0.33	5	SC		0.3
<i>Ectopria leechi</i>	09021109059030	0.33			--	0.3	
<i>Dubiraphia</i>	09021113064	1.33	1.33	6	--	1.1	1.1
<i>Macronychus</i>	09021113065		0.33	4	--		0.3
<i>Macronychus glabratus</i>	09021113065040	0.33			--	0.3	
<i>Optioservus</i>	09021113067		0.67	3	SC		0.5



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<i>Optioservus ovalis</i>	09021113067046	0.67			--	0.5	
<i>Promoresia</i>	09021113069		6.33		--		5.2
<i>Promoresia tardella</i>	09021113069052	6.33			--	5.2	
<i>Stenelmis</i>	09021113070	1.00	2.33	5	SC	0.8	1.9
<i>Stenelmis crenata</i>	09021113070055	1.33			--	1.1	
<i>Helisoma</i>	10010203030		0.33		SC		0.3
<i>Helisoma anceps</i>	10010203030058	0.33			--	0.3	