



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

Station Information

Station Number: S-689 DEP Drainage: St. John  
Waterbody: Gardner Brook - Station 689 HUC8: 01010004  
Town: Wade HUC8 Name: Aroostook River  
Directions: UPSTREAM OF GARDNER CREEK RD Latitude: 46 45 31.01 N  
Longitude: 68 14 22.17 W  
Stream Order: 3

Sample Information

Log Number: 1860 Type of Sample: ROCK BAG Date Deployed: 7/22/2009  
Subsample Factor: X1 Replicates: 3 Date Retrieved: 8/19/2009

Classification Attainment

Statutory Class: B Final Determination: A Date: 4/1/2010  
Model Result with P>.6: A Reason for Determination: Model  
Date Last Calculated: 4/1/2010 Comments:

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.82	Class A, B, or C	1.00
Class B	0.18	Non-Attainment	0.00
B or Better Model		A Model	
Class A or B	1.00	Class A	1.00
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.00

Model Variables

01 Total Mean Abundance	470.67	18 Relative Abundance Ephemeroptera	0.19
02 Generic Richness	51.00	19 EPT Generic Richness	26.00
03 Plecoptera Mean Abundance	9.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	4.73
04 Ephemeroptera Mean Abundance	88.67	23 Relative Generic Richness- Plecoptera	0.16
05 Shannon-Wiener Generic Diversity	3.29	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	0.68
06 Hilsenhoff Biotic Index	3.38	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	4.33
07 Relative Abundance - Chironomidae	0.10	28 EP Generic Richness/14	1.21
08 Relative Generic Richness Diptera	0.31	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	157.33		
11 <i>Cheumatopsyche</i> Abundance	0.34		
12 EPT Generic Richness/ Diptera Generic Richness	1.63		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	3.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	0.00		
17 Chironomini Abundance (Family Functional Group)	13.86		

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	33.43
2	<i>Baetis</i>	16.14
3	<i>Simulium</i>	14.38
4	<i>Dolophilodes</i>	8.22
5	<i>Lepidostoma</i>	5.31



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**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 16.5 deg C  
Dissolved Oxygen: 8.6 mg/l  
Specific Conductance: 68 uS/cm  
Velocity: 70 cm/s  
pH: 7.54  
Wetted Width: 7.9 m  
Bankfull Width: 8.8 m  
Depth: 33 cm

**Waterbody Information - Retrieval**

Temperature: 21.7 deg C  
Dissolved Oxygen: 7.6 mg/l  
Specific Conductance: 93 uS/cm  
Velocity: 66 cm/s  
pH: 7.04  
Wetted Width: 2.4 m  
Bankfull Width: 8.8 m  
Depth: 18 cm

**Water Chemistry - 7/22/2009**

Soluble Reactive Phosphorus	2 ug/l	Nitrate+nitrite As N	0.04 mg/l
Total Phosphorus	0.015 mg/l	Total Kjeldahl Nitrogen	0.3 mg/l
Dissolved Organic Carbon	9 mg/l	Total Alkalinity	35 mg/l

**Summary of Habitat Characteristics**

Landuse Name

Upland Hardwood  
Urban

Canopy Cover

Open

Terrain

Rolling

Potential Stressor

Sedimentation

Location

Below Forestry NPS

Substrate

Boulder	20 %
Gravel	35 %
Rubble/Cobble	35 %
Sand	10 %

**Landcover Summary - 2004 Data**

Total Area (ac)	8412	High Int. Dev. %	0.0	Water %	0.0	Non-vegetated %	0.7
		Med Int. Dev. %	0.0	Wetland %	2.8	Tilled Agriculture %	1.8
		Low Int. Dev. %	0.8	Upland Woody %	93.8	Grassland %	0.2
		Development %	0.8	Natural %	96.7	Human Altered %	3.3
						Impervious %	0.0

**Sample Comments**



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Replicates: 3

Calculated: 4/1/2010

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Stylodrilus</i>	08020101004		0.33		--		0.1
<i>Stylodrilus heringianus</i>	08020101004001	0.33			--	0.1	
Leuctridae	09020204	0.33	0.33		--	0.1	0.1
<i>Pteronarcys</i>	09020205023		3.00	0	SH		0.6
<i>Pteronarcys biloba</i>	09020205023061	3.00			--	0.6	
Perlodidae	09020207	1.00	1.00		--	0.2	0.2
<i>Isoperla</i>	09020207026	0.67	0.67	2	PR	0.1	0.1
<i>Haploperla</i>	09020208037	0.33	0.33	1	PR	0.1	0.1
<i>Sweltsa</i>	09020208040	1.00	1.00		PR	0.2	0.2
Perlidae	09020209	0.33	0.33		--	0.1	0.1
<i>Agnetina</i>	09020209050		2.67	2	PR		0.6
<i>Agnetina capitata</i>	09020209050152	2.67		2	PR	0.6	
<i>Boyeria</i>	09020301004	2.00	2.00	2	PR	0.4	0.4
<i>Ophiogomphus</i>	09020302015	0.33	0.33	1	PR	0.1	0.1
Baetidae	09020401	1.67			--	0.4	
<i>Baetis</i>	09020401001	3.00	75.98	4	CG	0.6	16.1
<i>Baetis flavistriga</i>	09020401001004	2.33			--	0.5	
<i>Baetis intercalaris</i>	09020401001008	0.33			--	0.1	
<i>Baetis tricaudatus</i>	09020401001012	68.67			--	14.6	
<i>Diphetor</i>	09020401013		1.02		--		0.2
<i>Diphetor hageni</i>	09020401013001	1.00			--	0.2	
<i>Epeorus</i>	09020402009	1.33	1.33	0	SC	0.3	0.3
<i>Heptagenia</i>	09020402010		2.00	2	SC		0.4
<i>Heptagenia flavescens</i>	09020402010038	2.00			--	0.4	
<i>Maccaffertium</i>	09020402015	1.67	4.33	4	SC	0.4	0.9
<i>Maccaffertium luteum</i>	09020402015049	2.67			--	0.6	
Leptophlebiidae	09020406	1.67	1.67		--	0.4	0.4
<i>Paraleptophlebia</i>	09020406026	0.33	0.33	1	CG	0.1	0.1
<i>Ephemerella</i>	09020410035	1.33	1.33	1	CG	0.3	0.3
<i>Eurylophella</i>	09020410036	0.67	0.67	3	CG	0.1	0.1
<i>Dolophilodes</i>	09020601001	38.67	38.67	0	CF	8.2	8.2
Hydropsychidae	09020604	3.00			--	0.6	
<i>Cheumatopsyche</i>	09020604015	0.33	0.34	5	CF	0.1	0.1
<i>Hydropsyche</i>	09020604016	87.33	157.33	4	CF	18.6	33.4
<i>Hydropsyche alhedra</i>	09020604016028	40.33			--	8.6	
<i>Hydropsyche slossonae</i>	09020604016031	4.33			--	0.9	
<i>Hydropsyche sparna</i>	09020604016032	22.33			--	4.7	
<i>Rhyacophila</i>	09020605019		2.00	2	PR		0.4



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		Actual	Adjusted			Actual	Adjusted
<i>Rhyacophila fuscula</i>	09020605019060	2.00			PR	0.4	
<i>Glossosoma</i>	09020606020	22.67	22.67	0	SC	4.8	4.8
<i>Agapetus</i>	09020606021	0.33	0.33	0	SC	0.1	0.1
<i>Pycnopsyche</i>	09020610049	0.33	0.33	4	SH	0.1	0.1
<i>Apatania</i>	09020610061	0.67	0.67		SC	0.1	0.1
<i>Lepidostoma</i>	09020611064	25.00	25.00	1	SH	5.3	5.3
<i>Antocha</i>	09021001004	0.33	0.33	3	CG	0.1	0.1
<i>Nymphomyia</i>	09021004021				SC		
Chironomidae	09021011	0.67			--	0.1	
<i>Brillia</i>	09021011033		0.34	5	SH		0.1
<i>Brillia parva</i>	09021011033050	0.33			--	0.1	
<i>Corynoneura</i>	09021011036	0.33	0.34	7	CG	0.1	0.1
<i>Nanocladius</i>	09021011049		0.34	3	CG		0.1
<i>Nanocladius branchicollis</i>	09021011049091	0.33			--	0.1	
<i>Parachaetocladius</i>	09021011051	0.33	0.34		CG	0.1	0.1
<i>Parametriocnemus</i>	09021011053	1.00	1.01	5	CG	0.2	0.2
<i>Rheocricotopus</i>	09021011057		0.34	6	CG		0.1
<i>Rheocricotopus eminellus</i>	09021011057109	0.33			--	0.1	
<i>Tvetenia</i>	09021011065		13.19	5	CG		2.8
<i>Tvetenia paucunca</i>	09021011065114	13.00			--	2.8	
<i>Micropsectra</i>	09021011070	4.67	4.73	7	CG	1.0	1.0
<i>Rheotanytarsus</i>	09021011072	12.00	12.17	6	CF	2.5	2.6
<i>Tanytarsus</i>	09021011076	0.33	0.34	6	CF	0.1	0.1
<i>Microtendipes</i>	09021011094		0.34	6	CF		0.1
<i>Microtendipes rydalensis group</i>	09021011094168	0.33			--	0.1	
<i>Polypedilum</i>	09021011102		13.53	6	SH		2.9
<i>Polypedilum aviceps</i>	09021011102181	13.00			--	2.8	
<i>Polypedilum flavum</i>	09021011102182	0.33			--	0.1	
<i>Simulium</i>	09021012047		67.67	4	CF		14.4
<i>Simulium tuberosum</i>	09021012047067	67.67			--	14.4	
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.1	0.1
Empididae	09021016			6	--		
<i>Roederiodes</i>	09021016058	0.67	0.67	3	PR	0.1	0.1
<i>Psephenus</i>	09021108058		0.33	4	SC		0.1
<i>Psephenus herricki</i>	09021108058028	0.33			--	0.1	
<i>Optioservus</i>	09021113067	0.33	0.67	3	SC	0.1	0.1
<i>Optioservus fastidius</i>	09021113067044	0.33			--	0.1	
<i>Oulimnius</i>	09021113068		1.67		--		0.4



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<i>Oulimnius latiusculus</i>	09021113068049	1.67			--	0.4	
<i>Promoresia</i>	09021113069		2.00		--		0.4
<i>Promoresia tardella</i>	09021113069052	2.00			--	0.4	
<i>Hygrobates</i>	09030102001	0.67	0.67		--	0.1	0.1
<i>Ferrissia</i>	10010204035		1.33		SC		0.3
<i>Ferrissia rivularis</i>	10010204035066	1.33			--	0.3	