



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

Station Information

Station Number: S-437
Waterbody: Merriland River - Station 437
Town: Wells
Directions: DOWNSTREAM COLES HILL RD - ABOUT 25 M
DEP Drainage: Piscataqua - Presumpscot - Saco
HUC8: 01060003
HUC8 Name: Piscataqua-Salmon Falls
Latitude: 43 20 57.37 N
Longitude: 70 34 45 W
Stream Order: 3

Sample Information

Log Number: 1975
Subsample Factor: X1
Type of Sample: ROCK BAG
Replicates: 3
Date Deployed: 7/28/2010
Date Retrieved: 8/31/2010

Classification Attainment

Statutory Class: A
Model Result with P>.6: A
Date Last Calculated: 3/28/2011
Final Determination: A
Reason for Determination: Model
Date: 3/28/2011
Comments:

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.71	Class A, B, or C	1.00
Class B	0.27	Non-Attainment	0.00
Class C			
0.02			
NA			
0.00			
B or Better Model		A Model	
Class A or B	1.00	Class A	0.97
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.03

Model Variables

01 Total Mean Abundance	186.00	18 Relative Abundance Ephemeroptera	0.39
02 Generic Richness	46.00	19 EPT Generic Richness	22.00
03 Plecoptera Mean Abundance	0.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	72.00	23 Relative Generic Richness- Plecoptera	0.04
05 Shannon-Wiener Generic Diversity	3.89	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	1.36
06 Hilsenhoff Biotic Index	4.12	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	53.20
07 Relative Abundance - Chironomidae	0.10	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.26	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	16.64		
11 <i>Cheumatopsyche</i> Abundance	1.36		
12 EPT Generic Richness/ Diptera	1.83		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.01		
15 Perlidae Mean Abundance	0.33		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	1.33		
(Family Functional Group)			
17 Chironomini Abundance (Family	10.00		
Functional Group)			

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Maccaffertium</i>	28.42
2	<i>Lepidostoma</i>	11.47
3	<i>Simulium</i>	9.68
4	<i>Hydropsyche</i>	8.95
5	<i>Oecetis</i>	8.60



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature:	21.7 deg C
Dissolved Oxygen:	8.1 mg/l
Specific Conductance:	63 uS/cm
Velocity:	35 cm/s
pH:	6.57
Wetted Width:	11.4 m
Bankfull Width:	16 m
Depth:	50 cm

Waterbody Information - Retrieval

Temperature:	20.9 deg C
Dissolved Oxygen:	8.2 mg/l
Specific Conductance:	64 uS/cm
Velocity:	22 cm/s
pH:	6.07
Wetted Width:	14.6 m
Bankfull Width:	16 m
Depth:	48 cm

Water Chemistry

Summary of Habitat Characteristics

Landuse Name

Pasture

Upland Conifer

Upland Hardwood

Canopy Cover

Partly Open

Terrain

Rolling

Potential Stressor

Location

Below Road Crossing

Substrate

Boulder	70 %
Gravel	10 %
Rubble/Cobble	10 %
Sand	10 %

Landcover Summary - 2004 Data

Total Area (ac)	8714	High Int. Dev. %	0.3	Water %	0.1	Non-vegetated %	1.0
		Med Int. Dev. %	0.4	Wetland %	20.4	Tilled Agriculture %	1.1
		Low Int. Dev. %	3.1	Upland Woody %	67.9	Grassland %	4.1
		Development %	3.7	Natural %	88.3	Human Altered %	11.6
						Impervious %	3.0

Sample Comments

7/28/2010 VERY DARK WATER.



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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
Dugesidae	03010102	0.67	0.67		--	0.4	0.4
<i>Nais</i>	08020202009		1.00		CG		0.5
<i>Nais behningi</i>	08020202009003	1.00			--	0.5	
<i>Isoperla</i>	09020207026	0.33	0.33	2	PR	0.2	0.2
<i>Acroneuria</i>	09020209042	0.33	0.33	0	PR	0.2	0.2
<i>Boyeria</i>	09020301004		0.33	2	PR		0.2
<i>Boyeria vinosa</i>	09020301004012	0.33			--	0.2	
<i>Hagenius</i>	09020302008		0.67	1	PR		0.4
<i>Hagenius brevistylus</i>	09020302008015	0.67			PR	0.4	
Calopterygidae	09020307	0.33	0.33		--	0.2	0.2
<i>Calopteryx</i>	09020307043		1.67	5	PR		0.9
<i>Calopteryx maculata</i>	09020307043088	1.67			--	0.9	
<i>Argia</i>	09020309048	0.33	0.33	7	PR	0.2	0.2
Baetidae	09020401	0.33			--	0.2	
<i>Baetis</i>	09020401001	1.00	2.75	4	CG	0.5	1.5
<i>Baetis flavistriga</i>	09020401001004	1.67			--	0.9	
<i>Acerpenna</i>	09020401007	1.33	8.59	5	CG	0.7	4.6
<i>Acerpenna pygmaea</i>	09020401007011	7.00			--	3.8	
Heptageniidae	09020402	2.33			--	1.3	
<i>Stenacron</i>	09020402014	0.33	3.13	7	SC	0.2	1.7
<i>Stenacron interpunctatum</i>	09020402014045	2.67			--	1.4	
<i>Maccaffertium</i>	09020402015	17.33	52.87	4	SC	9.3	28.4
<i>Maccaffertium luteum</i>	09020402015049	0.67			--	0.4	
<i>Maccaffertium modestum</i>	09020402015051	32.67			--	17.6	
Leptophlebiidae	09020406	1.00	1.00		--	0.5	0.5
<i>Paraleptophlebia</i>	09020406026	0.33	0.33	1	CG	0.2	0.2
<i>Ephemerella</i>	09020410035	2.00	2.00	1	CG	1.1	1.1
<i>Serratella</i>	09020410037		1.33	2	CG		0.7
<i>Serratella (Teloganopsis) deficiens</i>	09020410037121	1.33			--	0.7	
<i>Dolophilodes</i>	09020601001	1.33	1.33	0	CF	0.7	0.7
<i>Chimarra</i>	09020601003	0.33	0.33	2	CF	0.2	0.2
<i>Polycentropus</i>	09020603010	1.00	1.00	6	PR	0.5	0.5
Hydropsychidae	09020604	0.33			--	0.2	
<i>Cheumatopsyche</i>	09020604015	1.33	1.36	5	CF	0.7	0.7
<i>Hydropsyche</i>	09020604016	3.67	16.64	4	CF	2.0	8.9
<i>Hydropsyche morosa</i>	09020604016030	0.33			--	0.2	
<i>Hydropsyche sparna</i>	09020604016032	12.33			--	6.6	
<i>Rhyacophila</i>	09020605019	0.33	0.67	2	PR	0.2	0.4



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<i>Rhyacophila fuscula</i>	09020605019060	0.33			PR	0.2	
<i>Lepidostoma</i>	09020611064	21.33	21.33	1	SH	11.5	11.5
<i>Psilotreta</i>	09020614068		1.00	0	SC		0.5
<i>Psilotreta indecisa</i>	09020614068132	1.00			--	0.5	
<i>Helicopsyche</i>	09020616070		3.00	3	SC		1.6
<i>Helicopsyche borealis</i>	09020616070137	3.00			--	1.6	
<i>Ceraclea</i>	09020618072	3.33	3.33	3	CG	1.8	1.8
<i>Nectopsyche</i>	09020618074	0.33	0.33	3	SH	0.2	0.2
<i>Oecetis</i>	09020618078	0.67	16.00	8	PR	0.4	8.6
<i>Oecetis persimilis</i>	09020618078157	15.33			--	8.2	
<i>Conchapelopia</i>	09021011004			6	PR		
<i>Rheopelopia</i>	09021011017		1.33		PR		0.7
<i>Rheopelopia acra group</i>	09021011017036	1.33			--	0.7	
<i>Pagastia</i>	09021011025		0.33	1	--		0.2
<i>Pagastia orthogonia</i>	09021011025001	0.33			--	0.2	
<i>Corynoneura</i>	09021011036	0.33	0.33	7	CG	0.2	0.2
<i>Eukiefferiella</i>	09021011041		0.33	8	CG		0.2
<i>Eukiefferiella brehmi group</i>	09021011041073	0.33			--	0.2	
<i>Parametriocnemus</i>	09021011053	0.33	0.33	5	CG	0.2	0.2
<i>Rheocricotopus</i>	09021011057		1.00	6	CG		0.5
<i>Rheocricotopus robacki</i>	09021011057105	1.00			--	0.5	
<i>Synorthocladius</i>	09021011061			2	CG		
<i>Tvetenia</i>	09021011065		1.67	5	CG		0.9
<i>Tvetenia vitracies</i>	09021011065113	1.33			--	0.7	
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.2	
<i>Rheotanytarsus</i>	09021011072	2.67	2.67	6	CF	1.4	1.4
<i>Microtendipes</i>	09021011094		6.33	6	CF		3.4
<i>Microtendipes rydalensis group</i>	09021011094168	6.33			--	3.4	
<i>Polypedilum</i>	09021011102		3.67	6	SH		2.0
<i>Polypedilum aviceps</i>	09021011102181	3.67			--	2.0	
<i>Simulium</i>	09021012047		18.00	4	CF		9.7
<i>Simulium jenningsi</i>	09021012047060				--		
<i>Simulium tuberosum</i>	09021012047067	1.67			--	0.9	
<i>Simulium jenningsi complex</i>	09021012047070	16.33			CF	8.8	
<i>Atherix</i>	09021015055	1.00	1.00	2	PR	0.5	0.5
<i>Dubiraphia</i>	09021113064	0.33	0.33	6	--	0.2	0.2
<i>Promoresia</i>	09021113069		2.67		--		1.4
<i>Promoresia tardella</i>	09021113069052	2.67			--	1.4	



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<i>Stenelmis</i>	09021113070	0.67	1.00	5	SC	0.4	0.5
<i>Stenelmis crenata</i>	09021113070055	0.33			--	0.2	
<i>Amnicola</i>	10010104013	0.33	0.33		SC	0.2	0.2
<i>Physa</i>	10010202026	0.67	0.67		SC	0.4	0.4