



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

Station Information

**Station Number:** S-436  
**Waterbody:** Merriland River - Station 436  
**Town:** Wells  
**Directions:** UPSTREAM RTE 9A - SECOND RIFFLE - ABOUT 40M  
**DEP Drainage:** Piscataqua - Presumpscot - Saco  
**HUC8:** 01060003  
**HUC8 Name:** Piscataqua-Salmon Falls  
**Latitude:** 43 21 34.37 N  
**Longitude:** 70 36 32.09 W  
**Stream Order:** 3

Sample Information

**Log Number:** 1976  
**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	0.77	Class A, B, or C	1.00
Class B	0.23	Non-Attainment	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	319.33	18 Relative Abundance Ephemeroptera	0.16
02 Generic Richness	43.00	19 EPT Generic Richness	19.00
03 Plecoptera Mean Abundance	4.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.67
04 Ephemeroptera Mean Abundance	52.00	23 Relative Generic Richness- Plecoptera	0.07
05 Shannon-Wiener Generic Diversity	3.59	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	16.00
06 Hilsenhoff Biotic Index	3.63	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	35.00
07 Relative Abundance - Chironomidae	0.08	28 EP Generic Richness/14	0.64
08 Relative Generic Richness Diptera	0.37	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	63.67		
11 <i>Cheumatopsyche</i> Abundance	16.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.19		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	4.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	0.67		
17 Chironomini Abundance (Family Functional Group)	14.33		

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Chimarra</i>	20.04
2	<i>Hydropsyche</i>	19.94
3	<i>Simulium</i>	18.68
4	<i>Maccaffertium</i>	9.92
5	<i>Cheumatopsyche</i>	5.01



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Waterbody: Merriland River - Station 436

Date Retrieved: 8/31/2010

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 21.8 deg C  
Dissolved Oxygen: 7.4 mg/l  
Specific Conductance: 57 uS/cm  
Velocity: 40 cm/s  
pH: 6.37  
Wetted Width: 5.9 m  
Bankfull Width: 7.3 m  
Depth: 34 cm

**Waterbody Information - Retrieval**

Temperature: 20.9 deg C  
Dissolved Oxygen: 8 mg/l  
Specific Conductance: 57 uS/cm  
Velocity: 41 cm/s  
pH: 5.81  
Wetted Width: 4.8 m  
Bankfull Width: 7.3 m  
Depth: 27 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

Landuse Name

Pasture

Upland Hardwood

Potential Stressor

Canopy Cover

Dense

Location

Above Road Crossing

Below Agriculture NPS

Terrain

Rolling

Substrate

Boulder 45 %

Gravel 10 %

Rubble/Cobble 15 %

Sand 30 %

**Landcover Summary - 2004 Data**

Total Area (ac)	7279	High Int. Dev. %	0.3	Water %	0.1	Non-vegetated %	1.2
		Med Int. Dev. %	0.4	Wetland %	24.4	Tilled Agriculture %	0.8
		Low Int. Dev. %	2.9	Upland Woody %	65.2	Grassland %	2.6
		Development %	3.6	Natural %	89.6	Human Altered %	10.3
						Impervious %	2.7

**Sample Comments**

7/28/2010 VERY DARK WATER.



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Subsample Factor: X1

Replicates: 3

Calculated: 3/28/2011

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Nais</i>	08020202009		0.33		CG		0.1
<i>Nais behningi</i>	08020202009003	0.33			--	0.1	
<i>Aulodrilus</i>	08020202018		0.33		--		0.1
<i>Aulodrilus pluriseta</i>	08020202018004	0.33			--	0.1	
<i>Erpobdella</i>	08030203002		0.33		--		0.1
<i>Erpobdella punctata</i>	08030203002001	0.33			--	0.1	
<i>Leuctra</i>	09020204020	0.33	0.33	0	SH	0.1	0.1
<i>Acroneuria</i>	09020209042		3.33	0	PR		1.0
<i>Acroneuria abnormis</i>	09020209042121	3.33		0	PR	1.0	
<i>Neoperla</i>	09020209048	0.67	0.67	1	PR	0.2	0.2
<i>Boyeria</i>	09020301004		0.67	2	PR		0.2
<i>Boyeria vinosa</i>	09020301004012	0.67			--	0.2	
Baetidae	09020401	0.33			--	0.1	
<i>Baetis</i>	09020401001	0.67	8.97	4	CG	0.2	2.8
<i>Baetis brunneicolor</i>	09020401001003	8.00			--	2.5	
<i>Acerpenna</i>	09020401007	0.33	0.69	5	CG	0.1	0.2
<i>Acerpenna pygmaea</i>	09020401007011	0.33			--	0.1	
<i>Iswaeon</i>	09020401015		0.34		--		0.1
<i>Iswaeon anoka</i>	09020401015001	0.33			--	0.1	
<i>Maccaffertium</i>	09020402015	16.67	31.67	4	SC	5.2	9.9
<i>Maccaffertium modestum</i>	09020402015051	15.00			--	4.7	
Leptophlebiidae	09020406	1.67	1.67		--	0.5	0.5
<i>Serratella</i>	09020410037		8.67	2	CG		2.7
<i>Serratella (Teloganopsis) deficiens</i>	09020410037121	8.67			--	2.7	
Philopotamidae	09020601	0.33	0.33		--	0.1	0.1
<i>Chimarra</i>	09020601003	64.00	64.00	2	CF	20.0	20.0
<i>Neureclipsis</i>	09020603008	0.33	0.33	7	CF	0.1	0.1
<i>Polycentropus</i>	09020603010	0.33	0.33	6	PR	0.1	0.1
Hydropsychidae	09020604	1.67			--	0.5	
<i>Cheumatopsyche</i>	09020604015	15.67	16.00	5	CF	4.9	5.0
<i>Hydropsyche</i>	09020604016	26.33	63.67	4	CF	8.2	19.9
<i>Hydropsyche bronta</i>	09020604016029	0.33			--	0.1	
<i>Hydropsyche morosa</i>	09020604016030	0.67			--	0.2	
<i>Hydropsyche sparna</i>	09020604016032	33.67			--	10.5	
<i>Hydropsyche depravata complex</i>	09020604016041	1.33			CF	0.4	
<i>Rhyacophila</i>	09020605019	1.67	3.67	2	PR	0.5	1.1
<i>Rhyacophila fuscula</i>	09020605019060	2.00			PR	0.6	
Limnephilidae	09020610				--		



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		Actual	Adjusted			Actual	Adjusted
<i>Lepidostoma</i>	09020611064	4.00	4.00	1	SH	1.3	1.3
<i>Psilotreta</i>	09020614068		0.67	0	SC		0.2
<i>Psilotreta indecisa</i>	09020614068132	0.67			--	0.2	
<i>Oecetis</i>	09020618078		2.67	8	PR		0.8
<i>Oecetis persimilis</i>	09020618078157	2.67			--	0.8	
<i>Dicranota</i>	09021001005	0.33	0.33	3	PR	0.1	0.1
<i>Nilotanyus</i>	09021011012		0.67	6	PR		0.2
<i>Nilotanyus fimbriatus</i>	09021011012027	0.67			--	0.2	
<i>Corynoneura</i>	09021011036	0.33	0.33	7	CG	0.1	0.1
<i>Orthocladius</i>	09021011050			6	CG		
<i>Parametriocnemus</i>	09021011053	1.33	1.33	5	CG	0.4	0.4
<i>Rheocricotopus</i>	09021011057		2.67	6	CG		0.8
<i>Rheocricotopus robacki</i>	09021011057105	2.67			--	0.8	
<i>Thienemanniella</i>	09021011062		0.33	6	CG		0.1
<i>Thienemanniella xena</i>	09021011062110	0.33			--	0.1	
<i>Tvetenia</i>	09021011065		0.67	5	CG		0.2
<i>Tvetenia vitracies</i>	09021011065113	0.33			--	0.1	
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.1	
<i>Micropsectra</i>	09021011070	0.67	0.67	7	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072	5.00	5.00	6	CF	1.6	1.6
<i>Stempellinella</i>	09021011074		1.00	2	--		0.3
<i>Stempellinella fimbriata</i>	09021011074002	1.00			--	0.3	
<i>Microtendipes</i>	09021011094		11.67	6	CF		3.7
<i>Microtendipes rydalensis group</i>	09021011094168	11.67			--	3.7	
<i>Nilothauma</i>	09021011095	0.33	0.33	2	--	0.1	0.1
<i>Polypedilum</i>	09021011102		2.33	6	SH		0.7
<i>Polypedilum aviceps</i>	09021011102181	1.00			--	0.3	
<i>Polypedilum flavum</i>	09021011102182	1.00			--	0.3	
<i>Polypedilum illinoense group</i>	09021011102185	0.33			--	0.1	
<i>Simulium</i>	09021012047	0.33	59.67	4	CF	0.1	18.7
<i>Simulium jenningsi</i>	09021012047060				--		
<i>Simulium tuberosum</i>	09021012047067	8.00			--	2.5	
<i>Simulium jenningsi complex</i>	09021012047070	51.00			CF	16.0	
<i>Simulium venustum/verecundum complex</i>	09021012047072	0.33			CF	0.1	
<i>Atherix</i>	09021015055	4.00	4.00	2	PR	1.3	1.3
<i>Roederiodes</i>	09021016058	0.33	0.33	3	PR	0.1	0.1
<i>Psephenus</i>	09021108058		3.00	4	SC		0.9



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		Actual	Adjusted			Actual	Adjusted
<i>Psephenus herricki</i>	09021108058028	3.00			--	0.9	
<i>Microcylloepus</i>	09021113066	0.67	0.67	3	--	0.2	0.2
<i>Promoresia</i>	09021113069		7.00		--		2.2
<i>Promoresia tardella</i>	09021113069052	7.00			--	2.2	
<i>Stenelmis</i>	09021113070	3.00	3.67	5	SC	0.9	1.1
<i>Stenelmis crenata</i>	09021113070055	0.67			--	0.2	