



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

**Station Information**

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

**Sample Information**

<b>Log Number:</b> 2383	Type of Sample: ROCK BAG	Date Deployed: 7/22/2015
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/19/2015

**Classification Attainment**

<b>Statutory Class:</b> A	<b>Final Determination:</b> B	Date: 4/28/2016
Model Result with $P \geq 0.6$ : B	<b>Reason for Determination:</b> Model	
Date Last Calculated: 4/26/2016	Comments:	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.39	Class C	0.03
Class B	0.58	NA	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.98	Class A	0.11
Class C or Non-Attainment	0.02	Class B or C or Non-Attainment	0.89

**Model Variables**

01 Total Mean Abundance	474.67	18 Relative Abundance Ephemeroptera	0.09
02 Generic Richness	36.00	19 EPT Generic Richness	14.00
03 Plecoptera Mean Abundance	18.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.35
04 Ephemeroptera Mean Abundance	42.67	23 Relative Generic Richness- Plecoptera	0.03
05 Shannon-Wiener Generic Diversity	3.53	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	2.71
06 Hilsenhoff Biotic Index	4.44	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	29.33
07 Relative Abundance - Chironomidae	0.40	28 EP Generic Richness/14	0.43
08 Relative Generic Richness Diptera	0.42	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	144.00		
11 <i>Cheumatopsyche</i> Abundance	0.00		
12 EPT Generic Richness/ Diptera Generic Richness	0.93		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	18.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	4.06		
17 Chironomini Abundance (Family Functional Group)	120.37		

**Five Most Dominant Taxa**

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	30.34
2	<i>Polypedilum</i>	17.67
3	<i>Rheotanytarsus</i>	11.11
4	<i>Microtendipes</i>	7.69
5	<i>Lepidostoma</i>	4.49



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**Log Number: 2383**      Waterbody: Merriland River - Station 437      Date Retrieved: 8/19/2015

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 20.8 deg C  
 Dissolved Oxygen: 8.1 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance: 108.9 uS/cm  
 Velocity: 39.6 cm/s  
 pH: 7.12  
 Wetted Width: 7 m  
 Bankfull Width: 16 m  
 Depth: 45 cm

**Waterbody Information - Retrieval**

Temperature: 23 deg C  
 Dissolved Oxygen: 8.04 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance: 113.6 uS/cm  
 Velocity: 12.2 cm/s  
 pH: 7.34  
 Wetted Width: 6.5 m  
 Bankfull Width: 16 m  
 Depth: 36 cm

**Water Chemistry - 8/19/2015**

Nitrate+nitrite As N	0.07 mg/l	Total Phosphorus	23 ug/l
Total Kjeldahl Nitrogen	0.4 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	3.2 mg/l	Total Dissolved Solids	90 mg/l
Orthophosphate As Phosphorus	4 ug/l		

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Pasture	Partly Open	Rolling	
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
	Below Road Crossing	Bedrock	15 %
		Boulder	70 %
		Gravel	5 %
		Rubble/Cobble	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**

7/22/2015: 91.5% DO.  
 8/19/2015: 93.4% DO.



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Waterbody: Merriland River - Station 437

Town: Wells

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Subsample Factor: X4

Replicates: 3

Calculated: 4/26/2016

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Sminthuridae</i>	09020104	1.33	1.33		--	0.3	0.3
<i>Acroneuria</i>	09020209042	13.33	18.67	0	PR	2.8	3.9
<i>Acroneuria abnormis</i>	09020209042121	5.33		0	PR	1.1	
<i>Boyeria</i>	09020301004		1.33	2	PR		0.3
<i>Boyeria vinosa</i>	09020301004012	1.33			--	0.3	
Baetidae	09020401	1.33			--	0.3	
<i>Baetis</i>	09020401001	14.67	18.20	4	CG	3.1	3.8
<i>Baetis flavistriga</i>	09020401001004	2.67			--	0.6	
<i>Acerpenna</i>	09020401007	1.33	9.80	5	CG	0.3	2.1
<i>Acerpenna pygmaea</i>	09020401007011	8.00			--	1.7	
<i>Maccaffertium</i>	09020402015	8.00	10.67	4	SC	1.7	2.2
<i>Maccaffertium modestum</i>	09020402015051	2.67			--	0.6	
<i>Ephemerella</i>	09020410035	2.67	2.67	1	CG	0.6	0.6
<i>Tricorythodes</i>	09020411038	1.33	1.33	4	CG	0.3	0.3
<i>Chimarra</i>	09020601003	6.67	6.67	2	CF	1.4	1.4
<i>Ceratotina</i>	09020603006	1.33	1.33		PR	0.3	0.3
<i>Neureclipsis</i>	09020603008	4.00	4.00	7	CF	0.8	0.8
Hydropsychidae	09020604	4.00	4.00		--	0.8	0.8
<i>Hydropsyche</i>	09020604016	81.33	144.00	4	CF	17.1	30.3
<i>Hydropsyche morosa</i>	09020604016030	1.33			--	0.3	
<i>Hydropsyche sparna</i>	09020604016032	61.33			--	12.9	
<i>Rhyacophila</i>	09020605019	1.33	5.33	2	PR	0.3	1.1
<i>Rhyacophila fuscula</i>	09020605019060	4.00			PR	0.8	
<i>Lepidostoma</i>	09020611064	21.33	21.33	1	SH	4.5	4.5
<i>Oecetis</i>	09020618078	1.33	1.33	8	PR	0.3	0.3
Chironomidae	09021011	2.67			--	0.6	
<i>Rheopelopia</i>	09021011017		2.71		PR		0.6
<i>Rheopelopia acra group</i>	09021011017036	2.67			--	0.6	
<i>Trissopelopia</i>	09021011021		1.35		PR		0.3
<i>Trissopelopia ogemawi</i>	09021011021042	1.33			--	0.3	
<i>Corynoneura</i>	09021011036	1.33	1.35	7	CG	0.3	0.3
<i>Cricotopus</i>	09021011037		1.35	7	SH		0.3
<i>Cricotopus bicinctus</i>	09021011037057	1.33			--	0.3	
<i>Nanocladius</i>	09021011049		2.71	3	CG		0.6
<i>Nanocladius downesi</i>	09021011049092	2.67			--	0.6	
<i>Parametricnemus</i>	09021011053	1.33	1.35	5	CG	0.3	0.3
<i>Tvetenia</i>	09021011065		1.35	5	CG		0.3



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<i>Tvetenia paucunca</i>	09021011065114	1.33			--	0.3	
<i>Micropsectra</i>	09021011070	1.33	1.35	7	CG	0.3	0.3
<i>Rheotanytarsus</i>	09021011072		52.75	6	CF		11.1
<i>Rheotanytarsus exiguus group</i>	09021011072127	18.67			CF	3.9	
<i>Rheotanytarsus pellucidus</i>	09021011072128	33.33			CF	7.0	
<i>Tanytarsus</i>	09021011076	1.33	1.35	6	CF	0.3	0.3
<i>Microtendipes</i>	09021011094		36.52	6	CF		7.7
<i>Microtendipes rydalensis group</i>	09021011094168	36.00			--	7.6	
<i>Polypedilum</i>	09021011102		83.86	6	SH		17.7
<i>Polypedilum aviceps</i>	09021011102181	81.33			--	17.1	
<i>Polypedilum albicorne</i>	09021011102195	1.33			--	0.3	
<i>Simulium</i>	09021012047		1.33	4	CF		0.3
<i>Simulium jenningsi</i>	09021012047060	1.33			--	0.3	
<i>Atherix</i>	09021015055	1.33	1.33	2	PR	0.3	0.3
<i>Roederiodes</i>	09021016058	14.67	14.67	3	PR	3.1	3.1
<i>Psephenus</i>	09021108058		1.33	4	SC		0.3
<i>Psephenus herricki</i>	09021108058028	1.33			--	0.3	
<i>Promoresia</i>	09021113069		10.67		--		2.2
<i>Promoresia tardella</i>	09021113069052	10.67			--	2.2	
<i>Stenelmis</i>	09021113070	1.33	1.33	5	SC	0.3	0.3
<i>Hydrozetes</i>	09030115001	1.33	1.33		--	0.3	0.3
<i>Physa</i>	10010202027	2.67	2.67		SC	0.6	0.6