



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

Station Information

Station Number: 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

Log Number: 2826	Type of Sample: ROCK BAG	Date Deployed: 7/16/2020
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/17/2020

Classification Attainment

Statutory Class: A	Final Determination: A	Date: 3/3/2022
Model Result with $P \geq 0.6$: A	Reason for Determination: Model	
Date Last Calculated: 10/18/2021	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.66	Class A, B, or C	1.00
Class B	0.32	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.93
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.07

Model Variables

01 Total Mean Abundance	224.00	18 Relative Abundance Ephemeroptera	0.54
02 Generic Richness	45.00	19 EPT Generic Richness	16.00
03 Plecoptera Mean Abundance	1.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	2.00
04 Ephemeroptera Mean Abundance	120.67	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	3.27	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	1.33
06 Hilsenhoff Biotic Index	4.06	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	109.67
07 Relative Abundance - Chironomidae	0.16	28 EP Generic Richness/14	0.50
08 Relative Generic Richness Diptera	0.24	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	5.00		
11 <i>Cheumatopsyche</i> Abundance	0.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.45		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	1.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	2.67		
17 Chironomini Abundance (Family Functional Group)	19.67		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Maccaffertium</i>	48.36
2	<i>Lepidostoma</i>	7.89
3	<i>Microtendipes</i>	6.55
4	Tricladida	3.87
5	<i>Acerpenna</i>	3.87
6	<i>Rheotanytarsus</i>	3.87



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

Station Number: S-437 Town: Wells Date Deployed: 7/16/2020
Log Number: 2826 Waterbody: Merriland River - Station 437 Date Retrieved: 8/17/2020

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: LOTIC INC.

Waterbody Information - Deployment

Temperature: 20.8 deg C
Dissolved Oxygen: 9.39 mg/l
Dissolved Oxygen Saturation: 103.3 %
Specific Conductance: 110.8 uS/cm
Velocity: 22.3 cm/s
pH: 7.35
Wetted Width: 10 m
Bankfull Width: 11 m
Depth: 29 cm

Waterbody Information - Retrieval

Temperature: 19.1 deg C
Dissolved Oxygen: 9.53 mg/l
Dissolved Oxygen Saturation: 102.9 %
Specific Conductance: 129.2 uS/cm
Velocity: 0.9 cm/s
pH: 7.43
Wetted Width: 11 m
Bankfull Width: 11 m
Depth: 22.7 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Conifer	Partly Open	Hilly	
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
	Below Road Crossing	Bedrock	30 %
		Boulder	35 %
		Rubble/Cobble	30 %
		Sand	5 %

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
Total Land (ac)	8706	High Int. Dev. %	0.3	Water %	N/A	Non-vegetated %	N/A
		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 %	11.7
						Impervious %	3.0

Sample Comments



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-437

Waterbody: Merriland River - Station 437

Town: Wells

Log Number: 2826

Subsample Factor: X1

Replicates: 3

Calculated: 10/18/2021

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Hydra</i>	02010101001	0.33	0.33		PR	0.1	0.1
<i>Tricladida</i>	030101	8.67	8.67		--	3.9	3.9
<i>Prostoma</i>	04010101001	0.33	0.33		--	0.1	0.1
<i>Helobdella</i>	08030101005		2.00		--		0.9
<i>Helobdella stagnalis complex</i>	08030101005004	2.00			--	0.9	
<i>Acroneuria</i>	09020209042		1.33	0	PR		0.6
<i>Acroneuria abnormis</i>	09020209042121	1.33		0	PR	0.6	
<i>Boyeria</i>	09020301004		0.33	2	PR		0.1
<i>Boyeria vinosa</i>	09020301004012	0.33			--	0.1	
<i>Libellula</i>	09020306035	0.33	0.33	9	PR	0.1	0.1
<i>Calopteryx</i>	09020307043	0.33	0.33	5	PR	0.1	0.1
<i>Argia</i>	09020309048	0.67	0.67	7	PR	0.3	0.3
<i>Baetis</i>	09020401001		0.67	4	CG		0.3
<i>Baetis flavistriga</i>	09020401001004	0.67			--	0.3	
<i>Acerpenna</i>	09020401007		8.67	5	CG		3.9
<i>Acerpenna pygmaea</i>	09020401007011	8.67			--	3.9	
<i>Leucrocuta</i>	09020402011	1.00	1.00	1	SC	0.4	0.4
<i>Maccaffertium</i>	09020402015	67.00	108.33	4	SC	29.9	48.4
<i>Maccaffertium modestum</i>	09020402015051	11.33			--	5.1	
<i>Maccaffertium vicarium</i>	09020402015055	30.00			--	13.4	
<i>Paraleptophlebia</i>	09020406026	0.67	0.67	1	CG	0.3	0.3
<i>Tricorythodes</i>	09020411038	1.33	1.33	4	CG	0.6	0.6
<i>Chimarra</i>	09020601003		3.67	2	CF		1.6
<i>Chimarra aterrima</i>	09020601003002	3.67			--	1.6	
<i>Polycentropus</i>	09020603010	0.67	0.67	6	PR	0.3	0.3
<i>Hydropsyche</i>	09020604016		5.00	4	CF		2.2
<i>Hydropsyche sparna</i>	09020604016032	5.00			--	2.2	
<i>Rhyacophila</i>	09020605019		0.67	2	PR		0.3
<i>Rhyacophila fuscula</i>	09020605019060	0.67			PR	0.3	
<i>Pycnopsyche</i>	09020610049	0.33	0.33	4	SH	0.1	0.1
<i>Lepidostoma</i>	09020611064	17.67	17.67	1	SH	7.9	7.9
<i>Psilotreta</i>	09020614068		3.33	0	SC		1.5
<i>Psilotreta frontalis</i>	09020614068134	3.33			--	1.5	
<i>Helicopsyche</i>	09020616070		6.00	3	SC		2.7
<i>Helicopsyche borealis</i>	09020616070137	6.00			--	2.7	
<i>Oecetis</i>	09020618078	7.67	7.67	8	PR	3.4	3.4
Chironomidae	09021011				--		



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-437

Waterbody: Merriland River - Station 437

Town: Wells

Log Number: 2826

Subsample Factor: X1

Replicates: 3

Calculated: 10/18/2021

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Labrundinia</i>	09021011008		0.67	7	PR		0.3
<i>Labrundinia neopilosella</i>	09021011008021	0.67			--	0.3	
<i>Thienemannimyia</i>	09021011020		2.00	3	PR		0.9
<i>Thienemannimyia group</i>	09021011020041	2.00			--	0.9	
<i>Pagastia</i>	09021011025	1.00	1.00	1	--	0.4	0.4
<i>Orthocladus</i>	09021011050		0.33	6	CG		0.1
<i>Orthocladus annectens</i>	09021011050092	0.33			--	0.1	
<i>Parametricnemus</i>	09021011053	1.33	1.33	5	CG	0.6	0.6
<i>Rheocricotopus</i>	09021011057		0.33	6	CG		0.1
<i>Rheocricotopus robacki</i>	09021011057105	0.33			--	0.1	
<i>Tvetenia</i>	09021011065		0.67	5	CG		0.3
<i>Tvetenia paucunca</i>	09021011065114	0.67			--	0.3	
<i>Rheotanytarsus</i>	09021011072	8.67	8.67	6	CF	3.9	3.9
<i>Tanytarsus</i>	09021011076	1.33	1.33	6	CF	0.6	0.6
<i>Microtendipes</i>	09021011094		14.67	6	CF		6.5
<i>Microtendipes rydalensis group</i>	09021011094168	14.67			--	6.5	
<i>Polypedilum</i>	09021011102	2.00	5.00	6	SH	0.9	2.2
<i>Polypedilum aviceps</i>	09021011102181	3.00			--	1.3	
<i>Simulium</i>	09021012047			4	CF		
<i>Hydroporus</i>	09021103013	0.33	0.33		PR	0.1	0.1
<i>Dineutus</i>	09021104032	0.33	0.33	2	--	0.1	0.1
<i>Psephenus</i>	09021108058	0.67	0.67	4	SC	0.3	0.3
<i>Ectopria</i>	09021109059	0.67	0.67	5	SC	0.3	0.3
<i>Promoresia</i>	09021113069	2.33	2.33		--	1.0	1.0
<i>Stenelmis</i>	09021113070	0.33	0.33	5	SC	0.1	0.1
Valvatidae	10010101	0.33	0.33		--	0.1	0.1
<i>Amnicola</i>	10010104013	1.00	1.00		SC	0.4	0.4
<i>Physella</i>	10010202027	1.33	1.33		SC	0.6	0.6
<i>Sphaerium</i>	10020201003	0.67	0.67		CF	0.3	0.3