



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

Station Information

Station Number: S-439	River Basin: Saco
Waterbody: Great Works River - Station 439	HUC8 Name: Piscataqua-Salmon Falls
Town: North Berwick	Latitude: 43 19 0.91 N
Directions: UPSTREAM RTE 4 (LOWER END OF USGS SITE)	Longitude: 70 44 23.57 W
	Stream Order: 3

Sample Information

Log Number: 2802	Type of Sample: ROCK BAG	Date Deployed: 7/15/2020
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/11/2020

Classification Attainment

Statutory Class: B	Final Determination: A	Date: 5/12/2021
Model Result with $P \geq 0.6$: A	Reason for Determination: Model	
Date Last Calculated: 5/11/2021	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.61	Class A, B, or C	1.00
Class B	0.38	Non-Attainment	0.00
		<u>A Model</u>	
<u>B or Better Model</u>		Class A	1.00
Class A or B	1.00	Class B or C or Non-Attainment	0.00
Class C or Non-Attainment	0.00		

Model Variables

01 Total Mean Abundance	469.67	18 Relative Abundance Ephemeroptera	0.11
02 Generic Richness	53.00	19 EPT Generic Richness	22.00
03 Plecoptera Mean Abundance	14.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.33
04 Ephemeroptera Mean Abundance	49.67	23 Relative Generic Richness- Plecoptera	0.04
05 Shannon-Wiener Generic Diversity	4.09	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	7.00
06 Hilsenhoff Biotic Index	4.54	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	20.00
07 Relative Abundance - Chironomidae	0.50	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.34	30 Presence of Class A Indicator Taxa/7	0.71
09 <i>Hydropsyche</i> Abundance	88.67		
11 <i>Cheumatopsyche</i> Abundance	0.33		
12 EPT Generic Richness/ Diptera Generic Richness	1.22		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	14.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	9.33		
17 Chironomini Abundance (Family Functional Group)	88.67		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	18.88
2	<i>Rheotanytarsus</i>	18.59
3	<i>Microtendipes</i>	10.65
4	<i>Polypedilum</i>	8.23
5	<i>Baetis</i>	5.32



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Log Number: 2802

Town: North Berwick
Waterbody: Great Works River - Station 439

Date Deployed: 7/15/2020
Date Retrieved: 8/11/2020

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 21.7 deg C
Dissolved Oxygen: 9.6 mg/l
Dissolved Oxygen Saturation: 108.2 %
Specific Conductance: 169.6 uS/cm
Velocity: 57.9 cm/s
pH: 7.29
Wetted Width: 16 m
Bankfull Width: 16 m
Depth: 18.3 cm

Waterbody Information - Retrieval

Temperature: 23.6 deg C
Dissolved Oxygen: 9.16 mg/l
Dissolved Oxygen Saturation: 107.8 %
Specific Conductance: 163.2 uS/cm
Velocity: 23.2 cm/s
pH: 7.33
Wetted Width: 11.8 m
Bankfull Width: 16 m
Depth: 10.7 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Conifer	Partly Open	Rolling	
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
	Above Road Crossing	Boulder	20 %
		Detritus	5 %
		Gravel	20 %
		Rubble/Cobble	45 %
		Sand	10 %

Landcover Summary - 2004 Data

Total Area (ac)	3467	High Int. Dev. %	0.7	Water %	0.0	Non-vegetated %	0.1
		Med Int. Dev. %	0.5	Wetland %	6.0	Tilled Agriculture %	3.1
		Low Int. Dev. %	4.5	Upland Woody %	71.8	Grassland %	12.9
		Development %	5.7	Natural %	77.8	Human Altered %	22.2
						Impervious %	5.5

Sample Comments

HOBO LOGGER VERY CLOSE TO THE SURFACE. 2 FISH IN NETS.



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Aquatic Life Taxonomic Inventory Report**

Station Number: S-439 Waterbody: Great Works River - Station 439 Town: North Berwick
Log Number: 2802 Subsample Factor: X1 Replicates: 3 Calculated: 5/11/2021

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	0.33		CG	0.1	0.1
<i>Helobdella</i>	08030101005	0.33	0.33		--	0.1	0.1
<i>Acroneuria</i>	09020209042		5.33	0	PR		1.1
<i>Acroneuria abnormis</i>	09020209042121	5.33		0	PR	1.1	
<i>Paragnetina</i>	09020209049	5.00	9.00	1	PR	1.1	1.9
<i>Paragnetina media</i>	09020209049151	4.00			--	0.9	
<i>Boyeria</i>	09020301004		2.67	2	PR		0.6
<i>Boyeria vinosa</i>	09020301004012	2.67			--	0.6	
Calopterygidae	09020307	0.67	0.67		--	0.1	0.1
<i>Argia</i>	09020309048	0.33	0.33	7	PR	0.1	0.1
<i>Baetis</i>	09020401001	1.67	25.00	4	CG	0.4	5.3
<i>Baetis flavistriga</i>	09020401001004	9.67			--	2.1	
<i>Baetis pluto</i>	09020401001009	13.67			--	2.9	
<i>Heterocloeon</i>	09020401005		0.33	2	SC		0.1
<i>Heterocloeon curiosum</i>	09020401005020	0.33			--	0.1	
<i>Acerpenna</i>	09020401007		1.67	5	CG		0.4
<i>Acerpenna macdunnoughi</i>	09020401007001	0.33			--	0.1	
<i>Acerpenna pygmaea</i>	09020401007011	1.33			--	0.3	
<i>Epeorus</i>	09020402009	2.33	4.00	0	SC	0.5	0.9
<i>Epeorus vitreus</i>	09020402009033	1.67			--	0.4	
<i>Maccaffertium</i>	09020402015	8.67	14.67	4	SC	1.8	3.1
<i>Maccaffertium modestum</i>	09020402015051	3.00			--	0.6	
<i>Maccaffertium vicarium</i>	09020402015055	3.00			--	0.6	
<i>Isonychia</i>	09020404018	0.67	0.67	2	CF	0.1	0.1
<i>Ephemerella</i>	09020410035	1.00	1.00	1	CG	0.2	0.2
<i>Serratella</i>	09020410037		2.33	2	CG		0.5
<i>Serratella deficiens (Teloganopsis deficiens)</i>	09020410037121	2.33			--	0.5	
<i>Chimarra</i>	09020601003		21.33	2	CF		4.5
<i>Chimarra aterrima</i>	09020601003002	21.00			--	4.5	
<i>Chimarra socia</i>	09020601003004	0.33			--	0.1	
<i>Neureclipsis</i>	09020603008	0.33	0.33	7	CF	0.1	0.1
<i>Cheumatopsyche</i>	09020604015	0.33	0.33	5	CF	0.1	0.1
<i>Hydropsyche</i>	09020604016	2.67	88.67	4	CF	0.6	18.9
<i>Hydropsyche sparna</i>	09020604016032	55.33			--	11.8	
<i>Hydropsyche betteni</i>	09020604016037	30.67			--	6.5	
<i>Macrostemum</i>	09020604018	0.33	0.33	3	CF	0.1	0.1
<i>Glossosoma</i>	09020606020	0.33	0.33	0	SC	0.1	0.1



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		Actual	Adjusted			Actual	Adjusted
<i>Mayatrichia</i>	09020607033	0.33	0.33		SC	0.1	0.1
<i>Brachycentrus</i>	09020609043		0.67	0	CF		0.1
<i>Brachycentrus numerosus</i>	09020609043098	0.67			--	0.1	
<i>Lepidostoma</i>	09020611064	2.33	2.33	1	SH	0.5	0.5
<i>Psilotreta</i>	09020614068		4.33	0	SC		0.9
<i>Psilotreta labida</i>	09020614068133	4.33			--	0.9	
<i>Helicopsyche</i>	09020616070		1.00	3	SC		0.2
<i>Helicopsyche borealis</i>	09020616070137	1.00			--	0.2	
<i>Oecetis</i>	09020618078	3.00	3.67	8	PR	0.6	0.8
<i>Oecetis persimilis</i>	09020618078157	0.67			--	0.1	
<i>Corydalis</i>	09020701002		0.67	6	PR		0.1
<i>Corydalis cornutus</i>	09020701002002	0.67			--	0.1	
<i>Nilotanytus</i>	09021011012		1.33	6	PR		0.3
<i>Nilotanytus fimbriatus</i>	09021011012027	1.33			--	0.3	
<i>Thienemannimyia</i>	09021011020		8.00	3	PR		1.7
<i>Thienemannimyia group</i>	09021011020041	8.00			--	1.7	
<i>Pagastia</i>	09021011025	1.33	1.33	1	--	0.3	0.3
<i>Corynoneura</i>	09021011036	8.00	8.00	7	CG	1.7	1.7
<i>Cricotopus</i>	09021011037	1.33	1.33	7	SH	0.3	0.3
<i>Eukiefferiella</i>	09021011041		0.33	8	CG		0.1
<i>Eukiefferiella brehmi group</i>	09021011041073	0.33			--	0.1	
<i>Nanocladius</i>	09021011049	4.00	4.00	3	CG	0.9	0.9
<i>Parametriocnemus</i>	09021011053	9.33	9.33	5	CG	2.0	2.0
<i>Rheocricotopus</i>	09021011057	5.33	5.33	6	CG	1.1	1.1
<i>Tvetenia</i>	09021011065		5.67	5	CG		1.2
<i>Tvetenia vitracies</i>	09021011065113	1.67			--	0.4	
<i>Tvetenia paucunca</i>	09021011065114	4.00			--	0.9	
<i>Rheotanytarsus</i>	09021011072		87.33	6	CF		18.6
<i>Rheotanytarsus exiguus group</i>	09021011072127	79.33			CF	16.9	
<i>Rheotanytarsus pellucidus</i>	09021011072128	8.00			CF	1.7	
<i>Stempellinella</i>	09021011074	10.67	10.67	2	--	2.3	2.3
<i>Tanytarsus</i>	09021011076	5.33	5.33	6	CF	1.1	1.1
<i>Microtendipes</i>	09021011094		50.00	6	CF		10.6
<i>Microtendipes rydalensis group</i>	09021011094168	50.00			--	10.6	
<i>Polypedilum</i>	09021011102		38.67	6	SH		8.2
<i>Polypedilum aviceps</i>	09021011102181	28.00			--	6.0	
<i>Polypedilum flavum</i>	09021011102182	6.67			--	1.4	
<i>Polypedilum illinoense group</i>	09021011102185	4.00			--	0.9	



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Subsample Factor: X1

Replicates: 3

Calculated: 5/11/2021

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
		<i>Simulium</i>	09021012047			16.67	16.67
<i>Atherix</i>	09021015055	1.00	1.00	2	PR	0.2	0.2
<i>Hemerodromia</i>	09021016057	0.67	0.67	3	PR	0.1	0.1
<i>Psephenus</i>	09021108058		1.33	4	SC		0.3
<i>Psephenus herricki</i>	09021108058028	1.33			--	0.3	
<i>Macronychus</i>	09021113065		1.33	4	--		0.3
<i>Macronychus glabratus</i>	09021113065040	1.33			--	0.3	
<i>Optioservus</i>	09021113067		7.00	3	SC		1.5
<i>Optioservus tardella</i>	09021113067052	7.00			--	1.5	
<i>Stenelmis</i>	09021113070	6.00	11.33	5	SC	1.3	2.4
<i>Stenelmis crenata</i>	09021113070055	5.33			--	1.1	
Hydrobiidae	10010104	0.33	0.33		--	0.1	0.1
<i>Amnicola</i>	10010104013	0.33	0.33		SC	0.1	0.1
<i>Pisidium</i>	10020201002	0.33	0.33		CF	0.1	0.1