



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

**Station Information**

<b>Station Number:</b> 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**

<b>Log Number:</b> 2363	Type of Sample:	ROCK BASKET	Date Deployed:	7/15/2015	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/12/2015

**Classification Attainment**

<b>Statutory Class:</b> B	<b>Final Determination:</b> A	Date:	3/9/2016
Model Result with $P \geq 0.6$ :	A	<b>Reason for Determination:</b>	Model
Date Last Calculated:	3/9/2016	Comments:	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.41	Class C	0.04
Class B	0.55	NA	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.74
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.26

**Model Variables**

01 Total Mean Abundance	266.67	18 Relative Abundance Ephemeroptera	0.19
02 Generic Richness	47.00	19 EPT Generic Richness	22.00
03 Plecoptera Mean Abundance	4.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	50.67	23 Relative Generic Richness- Plecoptera	0.04
05 Shannon-Wiener Generic Diversity	3.44	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	3.05
06 Hilsenhoff Biotic Index	5.10	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	46.31
07 Relative Abundance - Chironomidae	0.33	28 EP Generic Richness/14	0.79
08 Relative Generic Richness Diptera	0.34	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	0.72		
11 <i>Cheumatopsyche</i> Abundance	0.36		
12 EPT Generic Richness/ Diptera Generic Richness	1.38		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	4.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	5.04		
17 Chironomini Abundance (Family Functional Group)	77.59		

**Five Most Dominant Taxa**

Rank	Taxon Name	Percent
1	<i>Microtendipes</i>	28.34
2	<i>Neureclipsis</i>	20.13
3	<i>Maccaffertium</i>	15.99
4	<i>Helicopsyche</i>	9.25
5	Calopterygidae	3.13
6	<i>Ammicola</i>	3.13



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

**Station Number: S-439**      Town: North Berwick      Date Deployed: 7/15/2015  
**Log Number: 2363**      Waterbody: Great Works River - Station 439      Date Retrieved: 8/12/2015

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT      Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 23 deg C  
Dissolved Oxygen: 8.18 mg/l  
Dissolved Oxygen Saturation:  
Specific Conductance: 151 uS/cm  
Velocity: 27.4 cm/s  
pH: 7.25  
Wetted Width: 8.5 m  
Bankfull Width: 7.9 m  
Depth: 36 cm

**Waterbody Information - Retrieval**

Temperature: 21.3 deg C  
Dissolved Oxygen: 8.74 mg/l  
Dissolved Oxygen Saturation:  
Specific Conductance: 145.8 uS/cm  
Velocity: 24.4 cm/s  
pH: 7.32  
Wetted Width: 7.7 m  
Bankfull Width: 9.1 m  
Depth: 33 cm

**Water Chemistry - 8/12/2015**

Nitrate+nitrite As N	0.04 mg/l	Total Phosphorus	11 ug/l
Total Kjeldahl Nitrogen	0.3 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	1.8 mg/l	Total Dissolved Solids	92 mg/l
Orthophosphate As Phosphorus	2 ug/l		

**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	15 %
		Gravel	20 %
		Rubble/Cobble	35 %
		Sand	30 %

**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**

7/15/2015: 96.7% DO.

8/12/2015: 99.6% DO.



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

**Station Number: S-439**

Waterbody: Great Works River - Station 439

Town: North Berwick

**Log Number: 2363**

Subsample Factor: X1

Replicates: 3

Calculated: 3/9/2016

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Prostoma</i>	04010101001	0.33	0.33		--	0.1	0.1
Perlidae	09020209	0.33	0.33		--	0.1	0.1
<i>Acroneuria</i>	09020209042	0.33	3.67	0	PR	0.1	1.4
<i>Acroneuria abnormis</i>	09020209042121	1.33		0	PR	0.5	
<i>Acroneuria lycorias</i>	09020209042125	2.00			--	0.8	
<i>Boyeria</i>	09020301004		2.33	2	PR		0.9
<i>Boyeria vinosa</i>	09020301004012	2.33			--	0.9	
Calopterygidae	09020307	8.33	8.33		--	3.1	3.1
<i>Calopteryx</i>	09020307043		3.67	5	PR		1.4
<i>Calopteryx maculata</i>	09020307043088	3.67			--	1.4	
<i>Argia</i>	09020309048	2.00	2.00	7	PR	0.8	0.8
<i>Baetis</i>	09020401001	0.33	3.67	4	CG	0.1	1.4
<i>Baetis flavistriga</i>	09020401001004	3.33			--	1.3	
<i>Acerpenna</i>	09020401007	0.33	1.67	5	CG	0.1	0.6
<i>Acerpenna macdunnoughi</i>	09020401007001	1.00			--	0.4	
<i>Acerpenna pygmaea</i>	09020401007011	0.33			--	0.1	
Heptageniidae	09020402	2.33			--	0.9	
<i>Leucrocuta</i>	09020402011	0.33	0.35	1	SC	0.1	0.1
<i>Maccaffertium</i>	09020402015	22.67	42.65	4	SC	8.5	16.0
<i>Maccaffertium luteum</i>	09020402015049	7.00			--	2.6	
<i>Maccaffertium modestum</i>	09020402015051	10.67			--	4.0	
Leptophlebiidae	09020406	0.67	0.67		--	0.3	0.3
<i>Paraleptophlebia</i>	09020406026	0.33	0.33	1	CG	0.1	0.1
<i>Ephemerella</i>	09020410035	0.67	0.67	1	CG	0.3	0.3
<i>Serratella</i>	09020410037	0.33	0.33	2	CG	0.1	0.1
<i>Tricorythodes</i>	09020411038	0.33	0.33	4	CG	0.1	0.1
<i>Chimarra</i>	09020601003		0.67	2	CF		0.3
<i>Chimarra obscura</i>	09020601003003	0.67			--	0.3	
<i>Cernotina</i>	09020603006	0.67	0.67		PR	0.3	0.3
<i>Neureclipsis</i>	09020603008	53.67	53.67	7	CF	20.1	20.1
Hydropsychidae	09020604	0.33			--	0.1	
<i>Cheumatopsyche</i>	09020604015	0.33	0.36	5	CF	0.1	0.1
<i>Hydropsyche</i>	09020604016	0.33	0.72	4	CF	0.1	0.3
<i>Hydropsyche bronta</i>	09020604016029	0.33			--	0.1	
<i>Macrostemum</i>	09020604018		3.25	3	CF		1.2
<i>Macrostemum zebratum</i>	09020604018054	3.00			--	1.1	
<i>Protophila</i>	09020606022	6.00	6.00	1	SC	2.3	2.3



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

**Station Number: S-439**      Waterbody: Great Works River - Station 439      Town: North Berwick  
**Log Number: 2363**      Subsample Factor: X1      Replicates: 3      Calculated: 3/9/2016

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Lepidostoma</i>	09020611064	0.67	0.67	1	SH	0.3	0.3
<i>Helicopsyche</i>	09020616070		24.67	3	SC		9.3
<i>Helicopsyche borealis</i>	09020616070137	24.67			--	9.3	
<i>Ceraclea</i>	09020618072	0.33	0.33	3	CG	0.1	0.1
<i>Oecetis</i>	09020618078	1.00	2.00	8	PR	0.4	0.8
<i>Oecetis avara</i>	09020618078153	1.00			--	0.4	
<i>Nigronia</i>	09020701003		1.67	0	PR		0.6
<i>Nigronia serricornis</i>	09020701003003	1.67			--	0.6	
Chironomidae	09021011	0.67			--	0.3	
<i>Ablabesmyia</i>	09021011001		2.35	8	PR		0.9
<i>Ablabesmyia mallochii</i>	09021011001004	2.33			--	0.9	
<i>Conchapelopia</i>	09021011004	0.33	0.34	6	PR	0.1	0.1
<i>Labrundinia</i>	09021011008	0.33	0.67	7	PR	0.1	0.3
<i>Labrundinia pilosella</i>	09021011008022	0.33			--	0.1	
<i>Nilotanytus</i>	09021011012		0.67	6	PR		0.3
<i>Nilotanytus fimbriatus</i>	09021011012027	0.67			--	0.3	
<i>Paramerina</i>	09021011013	0.33	0.34		--	0.1	0.1
<i>Trissopelopia</i>	09021011021		0.67		PR		0.3
<i>Trissopelopia ogemawi</i>	09021011021042	0.67			--	0.3	
<i>Nanocladius</i>	09021011049	0.33	0.34	3	CG	0.1	0.1
<i>Tvetenia</i>	09021011065		0.34	5	CG		0.1
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.1	
<i>Paratanytarsus</i>	09021011071		0.34	6	--		0.1
<i>Paratanytarsus longistylus</i>	09021011071126	0.33		6	--	0.1	
<i>Rheotanytarsus</i>	09021011072		3.69	6	CF		1.4
<i>Rheotanytarsus exiguus group</i>	09021011072127	1.67			CF	0.6	
<i>Rheotanytarsus pellucidus</i>	09021011072128	2.00			CF	0.8	
<i>Stempellinella</i>	09021011074		0.67	2	--		0.3
<i>Stempellinella fimbriata</i>	09021011074002	0.67			--	0.3	
<i>Tanytarsus</i>	09021011076	0.33	0.34	6	CF	0.1	0.1
<i>Microtendipes</i>	09021011094		75.57	6	CF		28.3
<i>Microtendipes rydalensis group</i>	09021011094168	75.00			--	28.1	
<i>Nilothauma</i>	09021011095	1.33	1.34	2	--	0.5	0.5
<i>Polypedilum</i>	09021011102		0.67	6	SH		0.3
<i>Polypedilum aviceps</i>	09021011102181	0.67			--	0.3	
<i>Simulium</i>	09021012047	0.33	3.33	4	CF	0.1	1.3
<i>Simulium fibrinflatum</i>	09021012047059	0.33			--	0.1	
<i>Simulium jenningsi species group</i>	09021012047070	2.67			CF	1.0	



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

---

**Station Number: S-439**      Waterbody: Great Works River - Station 439      Town: North Berwick  
**Log Number: 2363**      Subsample Factor: X1      Replicates: 3      Calculated: 3/9/2016

---

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Macronychus</i>	09021113065		0.33	4	--		0.1
<i>Macronychus glabratus</i>	09021113065040	0.33			--	0.1	
<i>Stenelmis</i>	09021113070		0.33	5	SC		0.1
<i>Stenelmis concinna</i>	09021113070054	0.33			--	0.1	
<i>Amnicola</i>	10010104013		8.33		SC		3.1
<i>Amnicola limosus</i>	10010104013018	8.33			--	3.1	