



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

Station Information

Station Number: S-291	River Basin: Penobscot
Waterbody: Souadabscook Stream - Station 291	HUC8 Name: Lower Penobscot
Town: Hampden	Latitude: 44 45 26.72 N
Directions: BELOW SAWYER LANDFILL; PARK AT PAPER MILL PARK, OFF PAPER MILL RD, WALK DOWN PATH TO WATER	Longitude: 68 51 27.98 W
	Stream Order: 3

Sample Information

Log Number: 2495	Type of Sample: ROCK BAG	Date Deployed: 7/21/2016
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/18/2016

Classification Attainment

Statutory Class: AA	Final Determination: A	Date: 4/7/2017
Model Result with $P \geq 0.6$: B	Reason for Determination: Best Professional Judgement	
Date Last Calculated: 4/5/2017	Comments: Lake Outlet Effect. Raised finding from Class B to Class A.	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.27	Class A, B, or C	1.00
Class B	0.68	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.31
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.69

Model Variables

01 Total Mean Abundance	1436.00	18 Relative Abundance Ephemeroptera	0.23
02 Generic Richness	45.00	19 EPT Generic Richness	23.00
03 Plecoptera Mean Abundance	8.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	328.00	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	4.06	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	118.75
06 Hilsenhoff Biotic Index	4.50	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	32.00
07 Relative Abundance - Chironomidae	0.30	28 EP Generic Richness/14	0.79
08 Relative Generic Richness Diptera	0.29	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	209.33		
11 <i>Cheumatopsyche</i> Abundance	105.33		
12 EPT Generic Richness/ Diptera Generic Richness	1.77		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	8.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	10.73		
17 Chironomini Abundance (Family Functional Group)	199.89		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Rheotanytarsus</i>	14.85
2	<i>Hydropsyche</i>	14.58
3	<i>Microtendipes</i>	12.71
4	<i>Helicopsyche</i>	8.08
5	<i>Acerpenna</i>	7.61



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature:	22.7 deg C
Dissolved Oxygen:	10.19 mg/l
Dissolved Oxygen Saturation:	117.8 %
Specific Conductance:	156.9 uS/cm
Velocity:	24.4 cm/s
pH:	8.27
Wetted Width:	18 m
Bankfull Width:	24 m
Depth:	40 cm

Waterbody Information - Retrieval

Temperature:	21.4 deg C
Dissolved Oxygen:	10.44 mg/l
Dissolved Oxygen Saturation:	118.1 %
Specific Conductance:	328.5 uS/cm
Velocity:	15.2 cm/s
pH:	8.18
Wetted Width:	14.6 m
Bankfull Width:	24 m
Depth:	30 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Rolling
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
	Below Landfill	Boulder 40 %
		Gravel 5 %
		Rubble/Cobble 45 %
		Sand 5 %
		Silt 5 %

Landcover Summary - 2004 Data

Total Area (ac)	110554	High Int. Dev. %	0.6	Water %	1.4	Non-vegetated %	0.4
		Med Int. Dev. %	0.7	Wetland %	11.0	Tilled Agriculture %	4.5
		Low Int. Dev. %	3.8	Upland Woody %	70.5	Grassland %	6.0
		Development %	5.1	Natural %	81.6	Human Altered %	17.0
						Impervious %	3.7

Sample Comments

7/21/2016: SILTY; FISH AND MUSSELS PRESENT.

8/18/2016: WOODY DEBRIS UPSTREAM; SILTY; LOW WATER AT RETRIEVAL; FISH PRESENT.



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Aquatic Life Taxonomic Inventory Report

Station Number: S-291

Waterbody: Souadabscook Stream - Station 291

Town: Hampden

Log Number: 2495

Subsample Factor: X4

Replicates: 3

Calculated: 4/5/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Acroneuria</i>	09020209042	1.33	8.00	0	PR	0.1	0.6
<i>Acroneuria abnormis</i>	09020209042121	2.67		0	PR	0.2	
<i>Acroneuria carolinensis</i>	09020209042123	4.00			--	0.3	
<i>Calopteryx</i>	09020307043	2.67	2.67	5	PR	0.2	0.2
<i>Argia</i>	09020309048	1.33	1.33	7	PR	0.1	0.1
<i>Baetis</i>	09020401001	14.67	94.67	4	CG	1.0	6.6
<i>Baetis flavistriga</i>	09020401001004	10.67			--	0.7	
<i>Baetis intercalaris</i>	09020401001008	69.33			--	4.8	
<i>Acerpenna</i>	09020401007		109.33	5	CG		7.6
<i>Acerpenna pygmaea</i>	09020401007011	109.33			--	7.6	
<i>Plauditus</i>	09020401012	1.33	1.33		CG	0.1	0.1
<i>Epeorus</i>	09020402009		2.67	0	SC		0.2
<i>Epeorus vitreus</i>	09020402009033	2.67			--	0.2	
<i>Leucrocota</i>	09020402011	40.00	40.00	1	SC	2.8	2.8
<i>Maccaffertium</i>	09020402015	18.67	24.00	4	SC	1.3	1.7
<i>Maccaffertium modestum</i>	09020402015051	4.00			--	0.3	
<i>Maccaffertium terminatum</i>	09020402015054	1.33			--	0.1	
<i>Isonychia</i>	09020404018	14.67	14.67	2	CF	1.0	1.0
Ephemerellidae	09020410	14.67			--	1.0	
<i>Ephemerella</i>	09020410035	1.33	2.15	1	CG	0.1	0.1
<i>Serratella</i>	09020410037	4.00	36.52	2	CG	0.3	2.5
<i>Serratella deficiens</i> (<i>Teloganopsis deficiens</i>)	09020410037121	14.67			--	1.0	
<i>Serratella serratoides</i>	09020410037124	4.00			--	0.3	
<i>Tricorythodes</i>	09020411038	2.67	2.67	4	CG	0.2	0.2
Philopotamidae	09020601				--		
<i>Chimarra</i>	09020601003	1.33	12.00	2	CF	0.1	0.8
<i>Chimarra aterrima</i>	09020601003002	2.67			--	0.2	
<i>Chimarra socia</i>	09020601003004	8.00			--	0.6	
Polycentropodidae	09020603	2.67			--	0.2	
<i>Neureclipsis</i>	09020603008	24.00	26.18	7	CF	1.7	1.8
<i>Polycentropus</i>	09020603010	5.33	5.82	6	PR	0.4	0.4
<i>Cheumatopsyche</i>	09020604015	105.33	105.33	5	CF	7.3	7.3
<i>Hydropsyche</i>	09020604016	54.67	209.33	4	CF	3.8	14.6
<i>Hydropsyche morosa</i>	09020604016030	77.33			--	5.4	
<i>Hydropsyche sparna</i>	09020604016032	41.33			--	2.9	
<i>Hydropsyche scalaris species group</i>	09020604016048	36.00			--	2.5	
<i>Macrostemum</i>	09020604018	2.67	2.67	3	CF	0.2	0.2



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		Actual	Adjusted			Actual	Adjusted
<i>Protoptila</i>	09020606022	1.33	1.33	1	SC	0.1	0.1
Hydroptilidae	09020607				--		
<i>Micrasema</i>	09020609044	33.33	33.33	2	SH	2.3	2.3
<i>Lepidostoma</i>	09020611064	13.33	13.33	1	SH	0.9	0.9
<i>Helicopsyche</i>	09020616070	116.00	116.00	3	SC	8.1	8.1
<i>Ceraclea</i>	09020618072	1.33	1.33	3	CG	0.1	0.1
<i>Oecetis</i>	09020618078	1.33	20.00	8	PR	0.1	1.4
<i>Oecetis avara</i>	09020618078153	10.67			--	0.7	
<i>Oecetis persimilis</i>	09020618078157	8.00			--	0.6	
<i>Nigronia</i>	09020701003		2.67	0	PR		0.2
<i>Nigronia serricornis</i>	09020701003003	2.67			--	0.2	
Chironomidae	09021011	2.67			--	0.2	
<i>Ablabesmyia</i>	09021011001	9.33	9.39	8	PR	0.6	0.7
<i>Thienemannimyia</i>	09021011020		1.34	3	PR		0.1
<i>Thienemannimyia</i> group	09021011020041	1.33			--	0.1	
<i>Cricotopus</i>	09021011037	1.33	1.34	7	SH	0.1	0.1
<i>Rheocricotopus</i>	09021011057	2.67	2.68	6	CG	0.2	0.2
<i>Synorthocladius</i>	09021011061	4.00	4.02	2	CG	0.3	0.3
<i>Tvetenia</i>	09021011065		1.34	5	CG		0.1
<i>Tvetenia vitracies</i>	09021011065113	1.33			--	0.1	
<i>Rheotanytarsus</i>	09021011072		213.30	6	CF		14.9
<i>Rheotanytarsus exiguus</i> group	09021011072127	169.33			CF	11.8	
<i>Rheotanytarsus pellucidus</i>	09021011072128	42.67			CF	3.0	
<i>Tanytarsus</i>	09021011076	2.67	2.68	6	CF	0.2	0.2
<i>Microtendipes</i>	09021011094		182.45	6	CF		12.7
<i>Microtendipes pedellus</i> group	09021011094166	10.67			--	0.7	
<i>Microtendipes rydalensis</i> group	09021011094168	170.67			--	11.9	
<i>Polypedilum</i>	09021011102		14.76	6	SH		1.0
<i>Polypedilum flavum</i>	09021011102182	14.67			--	1.0	
<i>Xenochironomus</i>	09021011108	2.67	2.68	0	PR	0.2	0.2
<i>Simulium</i>	09021012047	1.33	1.33	4	CF	0.1	0.1
<i>Hemerodromia</i>	09021016057	8.00	8.00	3	PR	0.6	0.6
<i>Psephenus</i>	09021108058		2.67	4	SC		0.2
<i>Psephenus herricki</i>	09021108058028	2.67			--	0.2	
<i>Microcyloopus</i>	09021113066		25.33	3	--		1.8
<i>Microcyloopus pusillus</i>	09021113066041	25.33			--	1.8	
<i>Promoresia</i>	09021113069		56.00		--		3.9
<i>Promoresia elegans</i>	09021113069051	56.00			--	3.9	



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<i>Stenelmis</i>	09021113070	8.00	13.33	5	SC	0.6	0.9
<i>Stenelmis crenata</i>	09021113070055	5.33			--	0.4	
<i>Amnicola</i>	10010104013		2.67		SC		0.2
<i>Amnicola limosus</i>	10010104013018	2.67			--	0.2	
<i>Pisidium</i>	10020201002	1.33	1.33		CF	0.1	0.1