



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

Station Information

Station Number: S-1007 River Basin: St. John  
Waterbody: Smith Brook - Station 1007 HUC8 Name: Meduxnekeag  
Town: Houlton Latitude: 46 10 48.06 N  
Directions: 40M DOWNSTREAM OF FOXXCROFT ROAD Longitude: 67 48 14.04 W  
Stream Order: 1

Sample Information

Log Number: 2289 Type of Sample: ROCK BAG Date Deployed: 7/23/2014  
Subsample Factor: X4 Replicates: 3 Date Retrieved: 8/21/2014

Classification Attainment

Statutory Class: B Final Determination: A Date: 2/11/2015  
Model Result with  $P \geq 0.6$ : A Reason for Determination: Model  
Date Last Calculated: 2/11/2015 Comments: Low class A (.74)

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.36	Class A, B, or C	1.00
Class B	0.57	Non-Attainment	0.00
B or Better Model		A Model	
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	528.00	18 Relative Abundance Ephemeroptera	0.19
02 Generic Richness	44.00	19 EPT Generic Richness	18.00
03 Plecoptera Mean Abundance	2.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.39
04 Ephemeroptera Mean Abundance	102.67	23 Relative Generic Richness- Plecoptera	0.05
05 Shannon-Wiener Generic Diversity	3.84	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	101.77
06 Hilsenhoff Biotic Index	4.46	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	1.33
07 Relative Abundance - Chironomidae	0.29	28 EP Generic Richness/14	0.79
08 Relative Generic Richness Diptera	0.48	30 Presence of Class A Indicator Taxa/7	0.43
09 <i>Hydropsyche</i> Abundance	170.21		
11 <i>Cheumatopsyche</i> Abundance	40.46		
12 EPT Generic Richness/ Diptera	0.86		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance	0.00		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	0.00		
(Family Functional Group)			
17 Chironomini Abundance (Family	30.65		
Functional Group)			

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	32.24
2	<i>Cricotopus</i>	11.35
3	<i>Cheumatopsyche</i>	7.66
4	<i>Baetis</i>	6.57
5	<i>Microtendipes</i>	5.28



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<b>Log Number: 2289</b>	Waterbody: Smith Brook - Station 1007	Date Retrieved: 8/21/2014

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature:	21.3 deg C
Dissolved Oxygen:	8.4 mg/l
Specific Conductance:	329 uS/cm
Velocity:	63 cm/s
pH:	8.31
Wetted Width:	3.5 m
Bankfull Width:	7 m
Depth:	30 cm

**Waterbody Information - Retrieval**

Temperature:	17 deg C
Dissolved Oxygen:	9.14 mg/l
Specific Conductance:	369 uS/cm
Velocity:	28 cm/s
pH:	8.16
Wetted Width:	3.2 m
Bankfull Width:	7 m
Depth:	23 cm

**Water Chemistry - 7/10/2014**

Nitrate+nitrite As N	0.42 mg/l	Total Phosphorus	14 ug/l
Total Kjeldahl Nitrogen	0.6 mg/l	Orthophosphate As Phosphorus	4 ug/l
Total Alkalinity	116 mg/l		

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Cultivated	Partly Open	Rolling
Swamp Conifer		
Swamp Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Agricultural Runoff	Below Road Crossing	Boulder 10 %
		Gravel 20 %
		Rubble/Cobble 70 %

**Landcover Summary - 2004 Data**

**Sample Comments**

8/21 - SCUPLIN FOUND. NMRO METER USED FOR DO, TEMP, AND SPC. PH METER ACTING UP, NMRO PEN METER USED AS EXTRA READING.



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<b>Station Number: S-1007</b>	Waterbody: Smith Brook - Station 1007	Town: Houlton
<b>Log Number: 2289</b>	Subsample Factor: X4	Replicates: 3
		Calculated: 2/11/2015

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Pteronarcys</i>	09020205023		1.33	0	SH		0.3
<i>Pteronarcys biloba</i>	09020205023061	1.33			--	0.3	
Perlodidae	09020207	1.33	1.33		--	0.3	0.3
Calopterygidae	09020307	5.33	5.33		--	1.0	1.0
<i>Baetis</i>	09020401001	6.67	34.67	4	CG	1.3	6.6
<i>Baetis flavistriga</i>	09020401001004	17.33			--	3.3	
<i>Baetis intercalaris</i>	09020401001008	1.33			--	0.3	
<i>Baetis tricaudatus</i>	09020401001012	9.33			--	1.8	
<i>Acerpenna</i>	09020401007	4.00	16.00	5	CG	0.8	3.0
<i>Acerpenna macdunnoughi</i>	09020401007001	12.00			--	2.3	
<i>Plauditus</i>	09020401012	2.67	2.67		CG	0.5	0.5
<i>Iswaeon</i>	09020401015	2.67	2.67		--	0.5	0.5
<i>Leucrocuta</i>	09020402011	22.67	22.67	1	SC	4.3	4.3
<i>Maccaffertium</i>	09020402015	1.33	1.33	4	SC	0.3	0.3
<i>Ephemerella</i>	09020410035	18.67	18.67	1	CG	3.5	3.5
<i>Eurylophella</i>	09020410036	2.67	2.67	3	CG	0.5	0.5
<i>Serratella</i>	09020410037		1.33	2	CG		0.3
<i>Serratella serratoides</i>	09020410037124	1.33			--	0.3	
<i>Dolophilodes</i>	09020601001		4.00	0	CF		0.8
<i>Dolophilodes distinctus</i>	09020601001001	4.00			--	0.8	
<i>Lype</i>	09020602004		1.33	2	SC		0.3
<i>Lype diversa</i>	09020602004005	1.33			--	0.3	
Hydropsychidae	09020604	9.33			--	1.8	
<i>Cheumatopsyche</i>	09020604015	38.67	40.46	5	CF	7.3	7.7
<i>Hydropsyche</i>	09020604016	89.33	170.21	4	CF	16.9	32.2
<i>Hydropsyche bronta</i>	09020604016029	2.67			--	0.5	
<i>Hydropsyche morosa</i>	09020604016030	2.67			--	0.5	
<i>Hydropsyche slossonae</i>	09020604016031	20.00			--	3.8	
<i>Hydropsyche sparna</i>	09020604016032	41.33			--	7.8	
<i>Hydropsyche depravata species group</i>	09020604016041	6.67			CF	1.3	
<i>Rhyacophila</i>	09020605019	6.67	10.67	2	PR	1.3	2.0
<i>Rhyacophila carolina</i>	09020605019057	1.33			PR	0.3	
<i>Rhyacophila fuscula</i>	09020605019060	2.67			PR	0.5	
<i>Hydroptila</i>	09020607026	1.33	1.33	6	P	0.3	0.3
<i>Pycnopsyche</i>	09020610049	1.33	1.33	4	SH	0.3	0.3
<i>Antocha</i>	09021001004	5.33	5.33	3	CG	1.0	1.0
Chironomidae	09021011	6.67			--	1.3	



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Town: Houlton

**Log Number: 2289**

Subsample Factor: X4

Replicates: 3

Calculated: 2/11/2015

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Pagastia</i>	09021011025		2.79	1	--		0.5
<i>Pagastia orthogonia</i>	09021011025001	2.67			--	0.5	
<i>Potthastia</i>	09021011026		1.39	2	CG		0.3
<i>Potthastia gaedii</i>	09021011026045	1.33			--	0.3	
<i>Corynoneura</i>	09021011036	1.33	1.39	7	CG	0.3	0.3
<i>Cricotopus</i>	09021011037		59.92	7	SH		11.3
<i>Cricotopus bicinctus</i>	09021011037057	14.67			--	2.8	
<i>Cricotopus tremulus</i>	09021011037068	26.67			--	5.1	
<i>Cricotopus trifascia</i>	09021011037070	6.67			--	1.3	
<i>Cricotopus vierriensis</i>	09021011037071	1.33			--	0.3	
<i>Cricotopus luciae</i>	09021011037073	2.67			--	0.5	
<i>Cricotopus annulator complex</i>	09021011037074	2.67			--	0.5	
<i>Cricotopus politus</i>	09021011037077	2.67			--	0.5	
<i>Eukiefferiella</i>	09021011041		1.39	8	CG		0.3
<i>Eukiefferiella claripennis group</i>	09021011041075	1.33			--	0.3	
<i>Nanocladius</i>	09021011049		1.39	3	CG		0.3
<i>Nanocladius branchiculus</i>	09021011049091	1.33			--	0.3	
<i>Orthocladius</i>	09021011050	2.67	2.79	6	CG	0.5	0.5
<i>Parakiefferiella</i>	09021011052		1.39		CG		0.3
<i>Parakiefferiella sp. E</i>	09021011052001	1.33			--	0.3	
<i>Parametriocnemus</i>	09021011053	2.67	2.79	5	CG	0.5	0.5
<i>Rheocricotopus</i>	09021011057		2.79	6	CG		0.5
<i>Rheocricotopus robacki</i>	09021011057105	2.67			--	0.5	
<i>Thienemanniella</i>	09021011062	2.67	6.97	6	CG	0.5	1.3
<i>Thienemanniella xena</i>	09021011062110	4.00			--	0.8	
<i>Tvetenia</i>	09021011065		11.15	5	CG		2.1
<i>Tvetenia paucunca</i>	09021011065114	10.67			--	2.0	
<i>Micropsectra</i>	09021011070	1.33	1.39	7	CG	0.3	0.3
<i>Paratanytarsus</i>	09021011071			6	--		
<i>Rheotanytarsus</i>	09021011072		23.69	6	CF		4.5
<i>Rheotanytarsus pellucidus</i>	09021011072128	22.67			CF	4.3	
<i>Stempellinella</i>	09021011074		1.39	2	--		0.3
<i>Stempellinella fimbriata</i>	09021011074002	1.33			--	0.3	
<i>Tanytarsus</i>	09021011076	1.33	1.39	6	CF	0.3	0.3
<i>Microtendipes</i>	09021011094		27.87	6	CF		5.3
<i>Microtendipes rydalensis group</i>	09021011094168	26.67			--	5.1	
<i>Polypedilum</i>	09021011102		2.79	6	SH		0.5
<i>Polypedilum aviceps</i>	09021011102181	2.67			--	0.5	



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<i>Simulium</i>	09021012047	1.33	1.33	4	CF	0.3	0.3
<i>Simulium tuberosum</i>	09021012047067				--		
<i>Simulium venustum/verecundum</i> <i>complex</i>	09021012047072				CF		
<i>Hemerodromia</i>	09021016057	1.33	1.33	3	PR	0.3	0.3
<i>Dubiraphia</i>	09021113064		14.67	6	--		2.8
<i>Dubiraphia quadrinotata</i>	09021113064037	14.67			--	2.8	
<i>Optioservus</i>	09021113067	1.33	1.33	3	SC	0.3	0.3
<i>Promoresia</i>	09021113069		2.67		--		0.5
<i>Promoresia tardella</i>	09021113069052	2.67			--	0.5	
<i>Ferrissia</i>	10010204035		6.67		SC		1.3
<i>Ferrissia rivularis</i>	10010204035066	6.67			--	1.3	