



**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: 2740	Type of Sample: ROCK BAG	Date Deployed: 7/11/2019
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/27/2019

Classification Attainment

Statutory Class: B	Final Determination: A	Date: 4/1/2020
Model Result with $P \geq 0.6$: A	Reason for Determination: Model	
Date Last Calculated: 3/30/2020	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.75	Class A, B, or C	1.00
Class B	0.24	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.99
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.01

Model Variables

01 Total Mean Abundance	260.33	18 Relative Abundance Ephemeroptera	0.21
02 Generic Richness	64.00	19 EPT Generic Richness	24.00
03 Plecoptera Mean Abundance	5.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	4.67
04 Ephemeroptera Mean Abundance	54.67	23 Relative Generic Richness- Plecoptera	0.06
05 Shannon-Wiener Generic Diversity	4.70	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	29.00
06 Hilsenhoff Biotic Index	4.91	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	9.33
07 Relative Abundance - Chironomidae	0.46	28 EP Generic Richness/14	1.07
08 Relative Generic Richness Diptera	0.38	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	0.33		
11 <i>Cheumatopsyche</i> Abundance	0.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.00		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	3.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	8.00		
17 Chironomini Abundance (Family Functional Group)	46.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Microtendipes</i>	14.98
2	<i>Dubiraphia</i>	14.72
3	<i>Tanytarsus</i>	7.94
4	<i>Leucrocota</i>	7.17
5	<i>Paratanytarsus</i>	7.04



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING DATA Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 17.2 deg C
Dissolved Oxygen: 9.21 mg/l
Dissolved Oxygen Saturation: 94.9 %
Specific Conductance: 383.1 uS/cm
Velocity: 13.7 cm/s
pH: 8.04
Wetted Width: 3.2 m
Bankfull Width: 4 m
Depth: 50 cm

Waterbody Information - Retrieval

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Cultivated	Partly Open	Rolling	
Pasture			
Upland Conifer			
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Altered Hydrology	Above Confluence	Boulder	15 %
	Below Road Crossing	Gravel	30 %
		Rubble/Cobble	40 %
		Sand	10 %
		Silt	5 %

Landcover Summary - 2004 Data

Sample Comments

BLACKNOSE DACE PRESENT.



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Log Number: 2740 Subsample Factor: X1 Replicates: 3 Calculated: 3/30/2020

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>Prostoma</i>	04010101001	0.33	0.33		--	0.1	0.1
<i>Placobdella</i>	08030101006		0.33		--		0.1
<i>Placobdella ornata</i>	08030101006002	0.33			--	0.1	
<i>Leuctra</i>	09020204020	2.00	2.00	0	SH	0.8	0.8
<i>Isoperla</i>	09020207026	0.67	0.67	2	PR	0.3	0.3
<i>Acroneuria</i>	09020209042		2.33	0	PR		0.9
<i>Acroneuria lycorias</i>	09020209042125	2.33			--	0.9	
<i>Agnatina</i>	09020209050		0.67	2	PR		0.3
<i>Agnatina capitata</i>	09020209050152	0.67		2	PR	0.3	
Aeshnidae	09020301	0.33	0.33		--	0.1	0.1
<i>Boyeria</i>	09020301004	0.33	0.67	2	PR	0.1	0.3
<i>Boyeria grafiana</i>	09020301004011	0.33			--	0.1	
Gomphidae	09020302	0.33	0.33		--	0.1	0.1
<i>Calopteryx</i>	09020307043	1.00	1.00	5	PR	0.4	0.4
<i>Acerpenna</i>	09020401007	1.00	6.00	5	CG	0.4	2.3
<i>Acerpenna macdunnoughi</i>	09020401007001	4.67			--	1.8	
<i>Acerpenna pygmaea</i>	09020401007011	0.33			--	0.1	
<i>Procloeon</i>	09020401010	4.67	5.00		CG	1.8	1.9
<i>Procloeon rivulare</i>	09020401010004	0.33			--	0.1	
<i>Anafroptilum (Centroptilum)</i>	09020401016	2.33	2.33	2	CG	0.9	0.9
<i>Neocloeon (Centroptilum)</i>	09020401017	3.00	3.00	2	CG	1.2	1.2
<i>Leucrocuta</i>	09020402011	18.67	18.67	1	SC	7.2	7.2
<i>Stenacron</i>	09020402014	4.00	4.33	7	SC	1.5	1.7
<i>Stenacron interpunctatum</i>	09020402014045	0.33			--	0.1	
<i>Maccaffertium</i>	09020402015	7.00	7.00	4	SC	2.7	2.7
<i>Paraleptophlebia</i>	09020406026		4.00	1	CG		1.5
<i>Paraleptophlebia debilis</i>	09020406026079	4.00		1	CG	1.5	
<i>Ephemerella</i>	09020410035	0.33	0.33	1	CG	0.1	0.1
<i>Serratella</i>	09020410037		0.33	2	CG		0.1
<i>Serratella serratoides</i>	09020410037124	0.33			--	0.1	
<i>Tricorythodes</i>	09020411038	3.67	3.67	4	CG	1.4	1.4
<i>Psychomyia</i>	09020602005		5.00	2	CG		1.9
<i>Psychomyia flavida</i>	09020602005006	5.00			--	1.9	
Polycentropodidae	09020603	0.33	0.33		--	0.1	0.1
<i>Polycentropus</i>	09020603010	8.33	8.33	6	PR	3.2	3.2
<i>Hydropsyche</i>	09020604016	0.33	0.33	4	CF	0.1	0.1



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		(Mean of Samplers)				Actual	Adjusted
		Actual	Adjusted				
<i>Rhyacophila</i>	09020605019		0.33	2	PR		0.1
<i>Rhyacophila minora</i>	09020605019063	0.33			PR	0.1	
<i>Oligostomis</i>	09020608039	1.00	1.00	2	PR	0.4	0.4
<i>Pycnopsyche</i>	09020610049	0.67	0.67	4	SH	0.3	0.3
<i>Lepidostoma</i>	09020611064			1	SH		
<i>Helicopsyche</i>	09020616070		0.33	3	SC		0.1
<i>Helicopsyche borealis</i>	09020616070137	0.33			--	0.1	
<i>Mystacides</i>	09020618075		1.67	4	CG		0.6
<i>Mystacides sepulchralis</i>	09020618075147	1.67			--	0.6	
<i>Nigronia</i>	09020701003		2.67	0	PR		1.0
<i>Nigronia serricornis</i>	09020701003003	2.67			--	1.0	
<i>Antocha</i>	09021001004	1.67	1.67	3	CG	0.6	0.6
Chironomidae	09021011				--		
<i>Ablabesmyia</i>	09021011001	1.33	1.33	8	PR	0.5	0.5
<i>Labrundinia</i>	09021011008		0.67	7	PR		0.3
<i>Labrundinia pilosella</i>	09021011008022	0.67			--	0.3	
<i>Thienemannimyia</i>	09021011020		3.67	3	PR		1.4
<i>Thienemannimyia group</i>	09021011020041	3.67			--	1.4	
<i>Trissopelopia</i>	09021011021	1.00	1.00		PR	0.4	0.4
<i>Zavrelimyia</i>	09021011022	1.33	1.33	8	PR	0.5	0.5
<i>Pagastia</i>	09021011025	0.67	0.67	1	--	0.3	0.3
<i>Corynoneura</i>	09021011036	0.67	0.67	7	CG	0.3	0.3
<i>Cricotopus</i>	09021011037	0.67	7.00	7	SH	0.3	2.7
<i>Cricotopus bicinctus</i>	09021011037057	6.33			--	2.4	
<i>Nanocladius</i>	09021011049	1.33	1.33	3	CG	0.5	0.5
<i>Orthocladius</i>	09021011050		1.33	6	CG		0.5
<i>Orthocladius annectens</i>	09021011050092	1.33			--	0.5	
<i>Parametriocnemus</i>	09021011053	1.00	1.00	5	CG	0.4	0.4
<i>Synorthocladius</i>	09021011061	0.33	0.33	2	CG	0.1	0.1
<i>Thienemanniella</i>	09021011062	2.33	2.33	6	CG	0.9	0.9
<i>Micropsectra</i>	09021011070	4.67	4.67	7	CG	1.8	1.8
<i>Paratanytarsus</i>	09021011071	18.33	18.33	6	--	7.0	7.0
<i>Rheotanytarsus</i>	09021011072		5.00	6	CF		1.9
<i>Rheotanytarsus exiguus group</i>	09021011072127	1.67			CF	0.6	
<i>Rheotanytarsus pellucidus</i>	09021011072128	3.33			CF	1.3	
<i>Stempellinella</i>	09021011074	1.67	1.67	2	--	0.6	0.6
<i>Tanytarsus</i>	09021011076	20.67	20.67	6	CF	7.9	7.9
<i>Microtendipes</i>	09021011094		39.00	6	CF		15.0



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		Actual	Adjusted				
<i>Microtendipes pedellus group</i>	09021011094166	2.33			--	0.9	
<i>Microtendipes rydalensis group</i>	09021011094168	36.67			--	14.1	
<i>Paratendipes</i>	090210111100	2.33	2.33	8	CG	0.9	0.9
<i>Phaenopsectra</i>	090210111101		3.00	7	SC		1.2
<i>Phaenopsectra obediens group</i>	09021011101180	3.00			--	1.2	
<i>Polypedilum</i>	090210111102	0.33	1.67	6	SH	0.1	0.6
<i>Polypedilum aviceps</i>	09021011102181	1.33			--	0.5	
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.1	0.1
<i>Psephenus</i>	09021108058		1.33	4	SC		0.5
<i>Psephenus herricki</i>	09021108058028	1.33			--	0.5	
<i>Dubiraphia</i>	09021113064	38.33	38.33	6	--	14.7	14.7
<i>Optioservus</i>	09021113067	2.67	2.67	3	SC	1.0	1.0
<i>Promoresia</i>	09021113069		8.00		--		3.1
<i>Promoresia elegans</i>	09021113069051	0.33			--	0.1	
<i>Promoresia tardella</i>	09021113069052	7.67			--	2.9	
<i>Physa</i>	10010202027	0.67	0.67		SC	0.3	0.3
<i>Gyraulus</i>	10010203029	0.33	0.33		SC	0.1	0.1
<i>Helisoma</i>	10010203030		1.33		SC		0.5
<i>Helisoma anceps</i>	10010203030058	1.33			--	0.5	
<i>Ferrissia</i>	10010204035	1.33	2.33		SC	0.5	0.9
<i>Ferrissia rivularis</i>	10010204035066	1.00			--	0.4	