



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

Station Information

Station Number: S-1022

Waterbody: Frost Brook - Station 1022

Town: Westfield

Directions: 20 M DOWNSTREAM OF EGYPT RD.

River Basin: St. John

HUC8 Name: Becaguimec Stream-Saint John Riv

Latitude: 46 34 49.11 N

Longitude: 67 55 53.02 W

Stream Order: 1

Sample Information

Log Number: 2283

Type of Sample: ROCK BAG

Date Deployed: 7/23/2014

Subsample Factor: X1

Replicates: 3

Date Retrieved: 8/20/2014

Classification Attainment

Statutory Class: B

Final Determination: A

Date: 3/12/2015

Model Result with  $P \geq 0.6$ : A

Reason for Determination: Model

Date Last Calculated: 3/12/2015

Comments:

Model Probabilities

First Stage Model

Class A	0.75	Class C	0.00
Class B	0.24	NA	0.00

B or Better Model

Class A or B	1.00
Class C or Non-Attainment	0.00

C or Better Model

Class A, B, or C	1.00
Non-Attainment	0.00

A Model

Class A	0.83
Class B or C or Non-Attainment	0.17

Model Variables

01 Total Mean Abundance	229.33	18 Relative Abundance Ephemeroptera	0.05																					
02 Generic Richness	70.00	19 EPT Generic Richness	21.00																					
03 Plecoptera Mean Abundance	9.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	34.24																					
04 Ephemeroptera Mean Abundance	10.67	23 Relative Generic Richness- Plecoptera	0.06																					
05 Shannon-Wiener Generic Diversity	4.39	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	28.61																					
06 Hilsenhoff Biotic Index	5.22	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	3.33																					
07 Relative Abundance - Chironomidae	0.73	28 EP Generic Richness/14	0.86																					
08 Relative Generic Richness Diptera	0.40	30 Presence of Class A Indicator Taxa/7	0.00																					
09 <i>Hydropsyche</i> Abundance	1.00	<table><tr><th colspan="3">Five Most Dominant Taxa</th></tr><tr><th>Rank</th><th>Taxon Name</th><th>Percent</th></tr><tr><td>1</td><td><i>Microtendipes</i></td><td>20.56</td></tr><tr><td>2</td><td><i>Micropsectra</i></td><td>14.93</td></tr><tr><td>3</td><td><i>Tanytarsus</i></td><td>9.14</td></tr><tr><td>4</td><td><i>Stempellinella</i></td><td>8.84</td></tr><tr><td>5</td><td><i>Paramerina</i></td><td>6.40</td></tr></table>		Five Most Dominant Taxa			Rank	Taxon Name	Percent	1	<i>Microtendipes</i>	20.56	2	<i>Micropsectra</i>	14.93	3	<i>Tanytarsus</i>	9.14	4	<i>Stempellinella</i>	8.84	5	<i>Paramerina</i>	6.40
Five Most Dominant Taxa																								
Rank	Taxon Name	Percent																						
1	<i>Microtendipes</i>	20.56																						
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3	<i>Tanytarsus</i>	9.14																						
4	<i>Stempellinella</i>	8.84																						
5	<i>Paramerina</i>	6.40																						
11 <i>Cheumatopsyche</i> Abundance	0.67																							
12 EPT Generic Richness/ Diptera	0.75																							
Generic Richness																								
13 Relative Abundance - Oligochaeta	0.01																							
15 Perlidae Mean Abundance (Family	0.67																							
Functional Group)																								
16 Tanypodinae Mean Abundance	19.56																							
(Family Functional Group)																								
17 Chironomini Abundance (Family	54.50																							
Functional Group)																								



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<b>Log Number: 2283</b>	Waterbody: Frost Brook - Station 1022	Date Retrieved: 8/20/2014

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature:	18.2 deg C
Dissolved Oxygen:	8.9 mg/l
Specific Conductance:	438 uS/cm
Velocity:	9 cm/s
pH:	7.32
Wetted Width:	3 m
Bankfull Width:	5 m
Depth:	50 cm

**Waterbody Information - Retrieval**

Temperature:	16 deg C
Dissolved Oxygen:	9.3 mg/l
Specific Conductance:	459 uS/cm
Velocity:	5 cm/s
pH:	7.43
Wetted Width:	2.9 m
Bankfull Width:	5 m
Depth:	47 cm

**Water Chemistry - 7/29/2014**

Nitrate+nitrite As N	0.33 mg/l	Total Phosphorus	29 ug/l
Total Kjeldahl Nitrogen	0.3 mg/l	Orthophosphate As Phosphorus	7 ug/l
Total Alkalinity	209 mg/l		

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Cultivated	Partly Open	Rolling
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Agricultural Runoff	Below Road Crossing	Gravel 60 %
		Rubble/Cobble 10 %
		Sand 30 %

**Landcover Summary - 2004 Data**

**Sample Comments**

7/23 - STRANDS OF ALGAE.

8/20 - FISH PRESENT. NMRO METER USED FOR DO, TEMP AND SPC.



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Waterbody: Frost Brook - Station 1022

Town: Westfield

**Log Number: 2283**

Subsample Factor: X1

Replicates: 3

Calculated: 3/12/2015

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
Lumbriculidae	08020101	0.67	0.67		--	0.3	0.3
Tubificida	080202	0.67	0.67		--	0.3	0.3
<i>Nais</i>	08020202009		0.67		CG		0.3
<i>Nais variabilis</i>	08020202009009	0.67			--	0.3	
<i>Limnodrilus</i>	08020202022		0.33		CG		0.1
<i>Limnodrilus hoffmeisteri</i>	08020202022003	0.33			--	0.1	
Lumbricidae	08020205	0.67	0.67		--	0.3	0.3
Isotomidae	09020102	0.33	0.33		--	0.1	0.1
<i>Paracapnia</i>	09020203018	2.00	2.00	1	SH	0.9	0.9
<i>Leuctra</i>	09020204020	5.33	6.00	0	SH	2.3	2.6
<i>Leuctra ferruginea</i>	09020204020050	0.67			--	0.3	
<i>Isoperla</i>	09020207026	0.33	0.33	2	PR	0.1	0.1
<i>Agnetina</i>	09020209050		0.67	2	PR		0.3
<i>Agnetina capitata</i>	09020209050152	0.67		2	PR	0.3	
<i>Boyeria</i>	09020301004	0.67	1.33	2	PR	0.3	0.6
<i>Boyeria vinosa</i>	09020301004012	0.67			--	0.3	
Gomphidae	09020302	0.33	0.33		--	0.1	0.1
<i>Lanthus</i>	09020302014		0.67		PR		0.3
<i>Lanthus parvulus</i>	09020302014030	0.67			--	0.3	
<i>Cordulegaster</i>	09020303019	0.33	0.33	3	PR	0.1	0.1
Calopterygidae	09020307	1.00	1.00		--	0.4	0.4
<i>Baetis</i>	09020401001		0.33	4	CG		0.1
<i>Baetis flavistriga</i>	09020401001004	0.33			--	0.1	
<i>Anafroptilum (Centroptilum)</i>	09020401016	1.00	1.00	2	CG	0.4	0.4
<i>Neocloeon (Centroptilum)</i>	09020401017	0.33	0.33	2	CG	0.1	0.1
<i>Stenacron</i>	09020402014		0.33	7	SC		0.1
<i>Stenacron interpunctatum</i>	09020402014045	0.33			--	0.1	
<i>Maccaffertium</i>	09020402015	0.67	3.33	4	SC	0.3	1.5
<i>Maccaffertium luteum</i>	09020402015049	2.67			--	1.2	
Leptophlebiidae	09020406	4.67	4.67		--	2.0	2.0
<i>Paraleptophlebia</i>	09020406026	0.33	0.33	1	CG	0.1	0.1
<i>Ephemera</i>	09020407027	0.33	0.33	1	CG	0.1	0.1
<i>Neureclipsis</i>	09020603008	0.33	0.33	7	CF	0.1	0.1
<i>Polycentropus</i>	09020603010	0.67	0.67	6	PR	0.3	0.3
<i>Cheumatopsyche</i>	09020604015	0.67	0.67	5	CF	0.3	0.3
<i>Hydropsyche</i>	09020604016	0.67	1.00	4	CF	0.3	0.4
<i>Hydropsyche morosa</i>	09020604016030	0.33			--	0.1	
<i>Hydroptila</i>	09020607026	0.67	0.67	6	P	0.3	0.3



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		Calculated: 3/12/2015

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Oligostomis</i>	09020608039	1.00	1.00	2	PR	0.4	0.4
<i>Psychoglypha</i>	09020610060		0.67	0	SH		0.3
<i>Psychoglypha subborealis</i>	09020610060120	0.67			--	0.3	
<i>Apatania</i>	09020610061	0.33	0.33		SC	0.1	0.1
<i>Lepidostoma</i>	09020611064	0.33	0.33	1	SH	0.1	0.1
<i>Sialis</i>	09020702004	0.67	0.67	4	PR	0.3	0.3
Lepidoptera	090209	1.00	1.00		--	0.4	0.4
<i>Tipula</i>	09021001002	0.33	0.33	4	SH	0.1	0.1
<i>Antocha</i>	09021001004	0.33	0.33	3	CG	0.1	0.1
<i>Dicranota</i>	09021001005	1.33	1.33	3	PR	0.6	0.6
<i>Probezzia</i>	09021010041	0.33	0.33	6	PR	0.1	0.1
<i>Bezzia/palpomyia</i>	09021010043	1.33	1.33	6	PR	0.6	0.6
Chironomidae	09021011	7.67			--	3.3	
<i>Ablabesmyia</i>	09021011001		0.70	8	PR		0.3
<i>Ablabesmyia mallochi</i>	09021011001004	0.67			--	0.3	
<i>Labrundinia</i>	09021011008		0.35	7	PR		0.2
<i>Labrundinia pilosella</i>	09021011008022	0.33			--	0.1	
<i>Larsia</i>	09021011009	1.33	1.40	6	PR	0.6	0.6
<i>Natarsia</i>	09021011011		0.35	8	PR		0.2
<i>Natarsia baltimorea</i>	09021011011026	0.33			--	0.1	
<i>Paramerina</i>	09021011013	14.00	14.67		--	6.1	6.4
<i>Trissopelopia</i>	09021011021		0.70		PR		0.3
<i>Trissopelopia ogemawi</i>	09021011021042	0.67			--	0.3	
<i>Zavrelimyia</i>	09021011022		1.40	8	PR		0.6
<i>Zavrelimyia thryptica group</i>	09021011022045	1.33			PR	0.6	
<i>Brillia</i>	09021011033		0.35	5	SH		0.2
<i>Brillia flavifrons</i>	09021011033049	0.33			--	0.1	
<i>Cricotopus</i>	09021011037	1.33	6.29	7	SH	0.6	2.7
<i>Cricotopus bicinctus</i>	09021011037057	4.00			--	1.7	
<i>Cricotopus annulator complex</i>	09021011037074	0.67			--	0.3	
<i>Nanocladius spinipennis</i>	09021011049090				--		
<i>Parakiefferiella</i>	09021011052	0.33	5.59		CG	0.1	2.4
<i>Parakiefferiella coronata</i>	09021011052002	5.00			--	2.2	
<i>Parametriocnemus</i>	09021011053	0.67	1.05	5	CG	0.3	0.5
<i>Parametriocnemus sp. F Epler</i>	09021011053101	0.33			--	0.1	
<i>Synorthocladius</i>	09021011061	0.33	0.35	2	CG	0.1	0.2
<i>Thienemanniella</i>	09021011062	1.33	2.79	6	CG	0.6	1.2
<i>Thienemanniella lobapodema</i>	09021011062114	1.33			--	0.6	



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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Tvetenia</i>	09021011065		1.40	5	CG		0.6
<i>Tvetenia paucunca</i>	09021011065114	1.33			--	0.6	
<i>Micropsectra</i>	09021011070	32.67	34.24	7	CG	14.2	14.9
<i>Stempellinella</i>	09021011074		20.26	2	--		8.8
<i>Stempellinella leptocelloides</i>	09021011074001	7.33			--	3.2	
<i>Stempellinella fimbriata</i>	09021011074002	12.00			--	5.2	
<i>Tanytarsus</i>	09021011076	19.33	20.96	6	CF	8.4	9.1
<i>Tanytarsus buckleyi</i>	09021011076139	0.67			CF	0.3	
<i>Cryptochironomus</i>	09021011082	0.33	0.35	8	PR	0.1	0.2
<i>Microtendipes</i>	09021011094		47.16	6	CF		20.6
<i>Microtendipes pedellus group</i>	09021011094166	19.67			--	8.6	
<i>Microtendipes rydalensis group</i>	09021011094168	25.33			--	11.0	
<i>Phaenopsectra</i>	09021011101		6.99	7	SC		3.0
<i>Phaenopsectra obediens</i>	09021011101182	6.67			SC	2.9	
<i>Chrysops</i>	09021014052	1.00	1.00	6	CG	0.4	0.4
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.1	0.1
<i>Neoplasta</i>	09021016064	0.33	0.33		PR	0.1	0.1
<i>Haliphus</i>	09021101001	0.33	0.33		P	0.1	0.1
<i>Anacaena</i>	09021105041	0.33	0.33		--	0.1	0.1
<i>Dubiraphia</i>	09021113064	3.33	5.33	6	--	1.5	2.3
<i>Dubiraphia quadrinotata</i>	09021113064037	2.00			--	0.9	
<i>Optioservus</i>	09021113067	7.33	7.33	3	SC	3.2	3.2
<i>Promoresia</i>	09021113069		1.00		--		0.4
<i>Promoresia tardella</i>	09021113069052	1.00			--	0.4	
Basommatophora	100102	0.67	0.67		--	0.3	0.3
<i>Physa</i>	10010202027	1.33	1.33		SC	0.6	0.6
<i>Gyraulus</i>	10010203029	0.33	0.33		SC	0.1	0.1
<i>Helisoma</i>	10010203030		2.00		SC		0.9
<i>Helisoma anceps</i>	10010203030058	2.00			--	0.9	
<i>Pisidium</i>	10020201002	1.00	4.00		CF	0.4	1.7
<i>Pisidium casertanum</i>	10020201002006	3.00			CF	1.3	