



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

Station Information

Station Number: S-1023

Waterbody: Gray Brook - Station 1023

Town: Fort Fairfield

Directions: 30M UPSTREAM OF NORTH CARIBOU ROAD.

River Basin: St. John

HUC8 Name: Aroostook

Latitude: 46° 48' 51.089" N

Longitude: 67° 52' 45.772" W

Stream Order: 2

Sample Information

Log Number: 2273

Type of Sample: ROCK BAG

Date Deployed: 7/22/2014

Subsample Factor: X4

Replicates: 3

Date Retrieved: 8/19/2014

Classification Attainment

Statutory Class: B

Final Determination: B

Date: 1/22/2015

Model Result with $P \geq 0.6$: B

Reason for Determination: Model

Date Last Calculated: 1/21/2015

Comments:

Model Probabilities

First Stage Model

Class A	0.09	Class C	0.17
Class B	0.74	NA	0.00

B or Better Model

Class A or B	0.81
Class C or Non-Attainment	0.19

C or Better Model

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

A Model

Class A	0.01
Class B or C or Non-Attainment	0.99

Model Variables

01 Total Mean Abundance	1096.00	18 Relative Abundance Ephemeroptera	0.27																					
02 Generic Richness	38.00	19 EPT Generic Richness	10.00																					
03 Plecoptera Mean Abundance	4.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	2.71																					
04 Ephemeroptera Mean Abundance	301.33	23 Relative Generic Richness- Plecoptera	0.05																					
05 Shannon-Wiener Generic Diversity	3.15	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	377.36																					
06 Hilsenhoff Biotic Index	5.20	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.00																					
07 Relative Abundance - Chironomidae	0.43	28 EP Generic Richness/14	0.36																					
08 Relative Generic Richness Diptera	0.42	30 Presence of Class A Indicator Taxa/7	0.00																					
09 <i>Hydropsyche</i> Abundance	8.00	<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>Cricotopus</i></td><td>34.19</td></tr><tr><td>2</td><td><i>Baetis</i></td><td>20.07</td></tr><tr><td>3</td><td><i>Nais</i></td><td>10.46</td></tr><tr><td>4</td><td><i>Simulium</i></td><td>10.10</td></tr><tr><td>5</td><td><i>Ephemerella</i></td><td>6.69</td></tr></table>		Five Most Dominant Taxa			Rank	Taxon Name	Percent	1	<i>Cricotopus</i>	34.19	2	<i>Baetis</i>	20.07	3	<i>Nais</i>	10.46	4	<i>Simulium</i>	10.10	5	<i>Ephemerella</i>	6.69
Five Most Dominant Taxa																								
Rank	Taxon Name	Percent																						
1	<i>Cricotopus</i>	34.19																						
2	<i>Baetis</i>	20.07																						
3	<i>Nais</i>	10.46																						
4	<i>Simulium</i>	10.10																						
5	<i>Ephemerella</i>	6.69																						
11 <i>Cheumatopsyche</i> Abundance	1.33																							
12 EPT Generic Richness/ Diptera	0.63																							
Generic Richness																								
13 Relative Abundance - Oligochaeta	0.12																							
15 Perlidae Mean Abundance (Family	0.00																							
Functional Group)																								
16 Tanypodinae Mean Abundance	2.71																							
(Family Functional Group)																								
17 Chironomini Abundance (Family	2.71																							
Functional Group)																								



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature:	18.2 deg C
Dissolved Oxygen:	10 mg/l
Specific Conductance:	422 uS/cm
Velocity:	51 cm/s
pH:	7.6
Wetted Width:	2.9 m
Bankfull Width:	5.2 m
Depth:	30 cm

Waterbody Information - Retrieval

Temperature:	14.3 deg C
Dissolved Oxygen:	11.54 mg/l
Specific Conductance:	429 uS/cm
Velocity:	37 cm/s
pH:	8.3
Wetted Width:	2.9 m
Bankfull Width:	5.2 m
Depth:	21 cm

Water Chemistry - 7/8/2014

Nitrate+nitrite As N	1.7 mg/l	Total Phosphorus	62 ug/l
Total Kjeldahl Nitrogen	0.5 mg/l	Orthophosphate As Phosphorus	46 ug/l
Total Alkalinity	142 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	Above Road Crossing	Boulder 10 %
		Gravel 35 %
		Rubble/Cobble 55 %

Landcover Summary - 2004 Data

Sample Comments

7/22 - SOME SLIME AND ALGAE ON ROCKS.

8/19 - SCULPIN FOUND. NMRO METER USED FOR DO, TEMP AND SPC.



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

Station Number: S-1023	Waterbody: Gray Brook - Station 1023	Town: Fort Fairfield
Log Number: 2273	Subsample Factor: X4	Replicates: 3
		Calculated: 1/21/2015

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Lumbriculus</i>	08020101002		1.33		CG		0.1
<i>Lumbriculus variegatus</i>	08020101002001	1.33			--	0.1	
<i>Chaetogaster</i>	08020202002		9.33		--		0.9
<i>Chaetogaster diaphanus</i>	08020202002001	5.33			--	0.5	
<i>Chaetogaster limnaei</i>	08020202002004	4.00			--	0.4	
<i>Nais</i>	08020202009		114.67		CG		10.5
<i>Nais bretscheri</i>	08020202009004	14.67			--	1.3	
<i>Nais communis</i>	08020202009005	4.00			--	0.4	
<i>Nais variabilis</i>	08020202009009	96.00			--	8.8	
<i>Limnodrilus</i>	08020202022		1.33		CG		0.1
<i>Limnodrilus hoffmeisteri</i>	08020202022003	1.33			--	0.1	
Lumbricidae	08020205	1.33	1.33		--	0.1	0.1
<i>Leuctra</i>	09020204020	2.67	2.67	0	SH	0.2	0.2
<i>Sweltsa</i>	09020208040	1.33	1.33		PR	0.1	0.1
Baetidae	09020401	8.00	8.00		--	0.7	0.7
<i>Baetis</i>	09020401001	34.67	220.00	4	CG	3.2	20.1
<i>Baetis flavistriga</i>	09020401001004	77.33			--	7.1	
<i>Baetis tricaudatus</i>	09020401001012	108.00			--	9.9	
<i>Ephemerella</i>	09020410035	73.33	73.33	1	CG	6.7	6.7
<i>Cheumatopsyche</i>	09020604015	1.33	1.33	5	CF	0.1	0.1
<i>Hydropsyche</i>	09020604016	2.67	8.00	4	CF	0.2	0.7
<i>Hydropsyche bronta</i>	09020604016029	1.33			--	0.1	
<i>Hydropsyche slossonae</i>	09020604016031	1.33			--	0.1	
<i>Hydropsyche sparna</i>	09020604016032	2.67			--	0.2	
<i>Rhyacophila</i>	09020605019	1.33	1.33	2	PR	0.1	0.1
<i>Psychoglypha</i>	09020610060		2.67	0	SH		0.2
<i>Psychoglypha subborealis</i>	09020610060120	2.67			--	0.2	
<i>Lepidostoma</i>	09020611064	1.33	1.33	1	SH	0.1	0.1
<i>Tipula</i>	09021001002	2.67	2.67	4	SH	0.2	0.2
<i>Limonia</i>	09021001010	1.33	1.33	6	SH	0.1	0.1
Chironomidae	09021011	6.67			--	0.6	
<i>Ablabesmyia</i>	09021011001		1.35	8	PR		0.1
<i>Ablabesmyia mallochii</i>	09021011001004	1.33			--	0.1	
<i>Paramerina</i>	09021011013	1.33	1.35		--	0.1	0.1
<i>Pagastia</i>	09021011025		2.71	1	--		0.2
<i>Pagastia orthogonia</i>	09021011025001	2.67			--	0.2	
<i>Cricotopus</i>	09021011037	9.33	374.67	7	SH	0.9	34.2
<i>Cricotopus bicinctus</i>	09021011037057	170.67			--	15.6	



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		Actual	Adjusted			Actual	Adjusted
<i>Cricotopus trifascia</i>	09021011037070	50.67			--	4.6	
<i>Cricotopus vierriensis</i>	09021011037071	5.33			--	0.5	
<i>Cricotopus annulator complex</i>	09021011037074	130.67			--	11.9	
<i>Cricotopus triannulatus/infuscatus</i>	09021011037078	2.67			SH	0.2	
<i>Eukiefferiella</i>	09021011041	8.00	33.82	8	CG	0.7	3.1
<i>Eukiefferiella claripennis group</i>	09021011041075	14.67			--	1.3	
<i>Eukiefferiella devonica group</i>	09021011041083	10.67			CG	1.0	
<i>Limnophyes</i>	09021011047	2.67	2.71	8	CG	0.2	0.2
<i>Parakiefferiella</i>	09021011052		2.71		CG		0.2
<i>Parakiefferiella coronata</i>	09021011052002	2.67			--	0.2	
<i>Psectrocladius</i>	09021011056		2.71	8	CG		0.2
<i>Psectrocladius flavus</i>	09021011056109	2.67			--	0.2	
<i>Thienemanniella</i>	09021011062		1.35	6	CG		0.1
<i>Thienemanniella xena</i>	09021011062110	1.33			--	0.1	
<i>Tvetenia</i>	09021011065		39.23	5	CG		3.6
<i>Tvetenia paucunca</i>	09021011065114	38.67			--	3.5	
<i>Micropsectra</i>	09021011070	2.67	2.71	7	CG	0.2	0.2
<i>Polypedilum</i>	09021011102		2.71	6	SH		0.2
<i>Polypedilum albicorne</i>	09021011102195	2.67			--	0.2	
<i>Simulium</i>	09021012047	1.33	110.67	4	CF	0.1	10.1
<i>Simulium vittatum</i>	09021012047064	105.33			--	9.6	
<i>Simulium tuberosum</i>	09021012047067	4.00			--	0.4	
<i>Limnophora</i>	09021022080	1.33	1.33	2	PR	0.1	0.1
<i>Dubiraphia</i>	09021113064		5.33	6	--		0.5
<i>Dubiraphia quadrinotata</i>	09021113064037	5.33			--	0.5	
<i>Optioservus</i>	09021113067	2.67	9.33	3	SC	0.2	0.9
<i>Optioservus ovalis</i>	09021113067046	6.67			--	0.6	
<i>Promoresia</i>	09021113069	2.67	14.67		--	0.2	1.3
<i>Promoresia tardella</i>	09021113069052	12.00			--	1.1	
<i>Sperchon</i>	09030107001	10.67	10.67		--	1.0	1.0
<i>Basommatophora</i>	100102	9.33	9.33		--	0.9	0.9
<i>Lymnaea</i>	10010201022	1.33	1.33		SC	0.1	0.1
<i>Physa</i>	10010202027	10.67	10.67		SC	1.0	1.0
<i>Gyraulus</i>	10010203029		2.67		SC		0.2
<i>Gyraulus parvus</i>	10010203029057	2.67			--	0.2	