



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

Station Information

Station Number: S-1023	River Basin:	St. John
Waterbody: Gray Brook - Station 1023	HUC8 Name:	Aroostook
Town: Fort Fairfield	Latitude:	46° 48' 51.089" N
Directions: 30M UPSTREAM OF NORTH CARIBOU ROAD.	Longitude:	67° 52' 45.772" W
	Stream Order:	2

Sample Information

Log Number: 2742	Type of Sample: ROCK BAG	Date Deployed: 7/9/2019
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/5/2019

Classification Attainment

Statutory Class: B	Final Determination: B	Date: 11/12/2019
Model Result with $P \geq 0.6$: B	Reason for Determination: Model	
Date Last Calculated: 11/5/2019	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.18	Class C	0.11
Class B	0.71	NA	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.62	Class A	0.02
Class C or Non-Attainment	0.38	Class B or C or Non-Attainment	0.98

Model Variables

01 Total Mean Abundance	874.67	18 Relative Abundance Ephemeroptera	0.07
02 Generic Richness	37.00	19 EPT Generic Richness	10.00
03 Plecoptera Mean Abundance	8.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	5.41
04 Ephemeroptera Mean Abundance	65.33	23 Relative Generic Richness- Plecoptera	0.08
05 Shannon-Wiener Generic Diversity	3.53	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	140.69
06 Hilsenhoff Biotic Index	4.86	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.00
07 Relative Abundance - Chironomidae	0.51	28 EP Generic Richness/14	0.43
08 Relative Generic Richness Diptera	0.46	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	69.33		
11 <i>Cheumatopsyche</i> Abundance	5.33		
12 EPT Generic Richness/ Diptera Generic Richness	0.59		
13 Relative Abundance - Oligochaeta	0.02		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	18.95		
17 Chironomini Abundance (Family Functional Group)	0.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Tvetenia</i>	26.93
2	<i>Simulium</i>	19.36
3	<i>Cricotopus</i>	14.39
4	<i>Hydropsyche</i>	7.93
5	<i>Baetis</i>	6.10



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 16.7 deg C
Dissolved Oxygen: 11.15 mg/l
Dissolved Oxygen Saturation: 114.6 %
Specific Conductance: 399.54 uS/cm
Velocity: 9.1 cm/s
pH: 8.54
Wetted Width: 2.9 m
Bankfull Width: 4.1 m
Depth: 21 cm

Waterbody Information - Retrieval

Temperature: 16.7 deg C
Dissolved Oxygen: 10.8 mg/l
Dissolved Oxygen Saturation: 111.2 %
Specific Conductance: 114.5 uS/cm
Velocity: 12.2 cm/s
pH: 8.68
Wetted Width: 2.9 m
Bankfull Width: 4.2 m
Depth: 15.5 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Cultivated	Open	Rolling
Pasture		
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Agricultural Runoff	Below Agriculture NPS	Gravel 50 %
Nutrients		Rubble/Cobble 40 %
Sedimentation		Sand 10 %

Landcover Summary - 2004 Data

Sample Comments



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Aquatic Life Taxonomic Inventory Report**

Station Number: S-1023

Waterbody: Gray Brook - Station 1023

Town: Fort Fairfield

Log Number: 2742

Subsample Factor: X4

Replicates: 3

Calculated: 11/5/2019

Taxon	Maine Taxonomic Code	Count		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		(Mean of Samplers)				Actual	Adjusted
		Actual	Adjusted				
<i>Hydra</i>	02010101001	2.67	2.67		PR	0.3	0.3
<i>Nais</i>	08020202009	14.67	14.67		CG	1.7	1.7
<i>Paracapnia</i>	09020203018	1.33	1.33	1	SH	0.2	0.2
<i>Leuctra</i>	09020204020	5.33	5.33	0	SH	0.6	0.6
<i>Isoperla</i>	09020207026	1.33	1.33	2	PR	0.2	0.2
<i>Baetis</i>	09020401001		53.33	4	CG		6.1
<i>Baetis flavistriga</i>	09020401001004	44.00			--	5.0	
<i>Baetis intercalaris</i>	09020401001008	1.33			--	0.2	
<i>Baetis tricaudatus</i>	09020401001012	8.00			--	0.9	
<i>Centroptilum</i>	09020401003	9.33	9.33	2	CG	1.1	1.1
Leptophlebiidae	09020406	2.67	2.67		--	0.3	0.3
<i>Cheumatopsyche</i>	09020604015	5.33	5.33	5	CF	0.6	0.6
<i>Hydropsyche</i>	09020604016	37.33	69.33	4	CF	4.3	7.9
<i>Hydropsyche bronta</i>	09020604016029	1.33			--	0.2	
<i>Hydropsyche slossonae</i>	09020604016031	20.00			--	2.3	
<i>Hydropsyche sparna</i>	09020604016032	10.67			--	1.2	
<i>Psychoglypha</i>	09020610060	5.33	5.33	0	SH	0.6	0.6
<i>Lepidostoma</i>	09020611064	4.00	4.00	1	SH	0.5	0.5
<i>Antocha</i>	09021001004	1.33	1.33	3	CG	0.2	0.2
<i>Pericoma</i>	09021002016	1.33	1.33	4	CG	0.2	0.2
Chironomidae	09021011	6.67			--	0.8	
<i>Thienemannimyia</i>	09021011020		18.95	3	PR		2.2
<i>Thienemannimyia group</i>	09021011020041	18.67			--	2.1	
<i>Pagastia</i>	09021011025	6.67	6.77	1	--	0.8	0.8
<i>Potthastia</i>	09021011026		1.35	2	CG		0.2
<i>Potthastia gaedii</i>	09021011026045	1.33			--	0.2	
<i>Corynoneura</i>	09021011036	4.00	4.06	7	CG	0.5	0.5
<i>Cricotopus</i>	09021011037	18.67	125.88	7	SH	2.1	14.4
<i>Cricotopus bicinctus</i>	09021011037057	66.67			--	7.6	
<i>Cricotopus trifascia</i>	09021011037070	38.67			--	4.4	
<i>Eukiefferiella</i>	09021011041		18.95	8	CG		2.2
<i>Eukiefferiella claripennis group</i>	09021011041075	13.33			--	1.5	
<i>Eukiefferiella devonica group</i>	09021011041083	5.33			CG	0.6	
<i>Parametriocnemus</i>	09021011053	8.00	8.12	5	CG	0.9	0.9
<i>Synorthocladius</i>	09021011061	6.67	6.77	2	CG	0.8	0.8
<i>Thienemanniella</i>	09021011062	2.67	2.71	6	CG	0.3	0.3
<i>Tvetenia</i>	09021011065		235.52	5	CG		26.9



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		Actual	Adjusted			Actual	Adjusted
<i>Tvetenia paucunca</i>	09021011065114	232.00			--	26.5	
<i>Micropsectra</i>	09021011070	5.33	5.41	7	CG	0.6	0.6
<i>Rheotanytarsus</i>	09021011072		2.71	6	CF		0.3
<i>Rheotanytarsus pellucidus</i>	09021011072128	2.67			CF	0.3	
<i>Tanytarsus</i>	09021011076	9.33	9.47	6	CF	1.1	1.1
<i>Simulium</i>	09021012047	169.33	169.33	4	CF	19.4	19.4
Muscidae	09021022	29.33	29.33	6	--	3.4	3.4
<i>Dubiraphia</i>	09021113064	9.33	9.33	6	--	1.1	1.1
<i>Optioservus</i>	09021113067		1.33	3	SC		0.2
<i>Optioservus ovalis</i>	09021113067046	1.33			--	0.2	
<i>Promoresia</i>	09021113069		17.33		--		2.0
<i>Promoresia tardella</i>	09021113069052	17.33			--	2.0	
<i>Hygrobates</i>	09030102001	1.33	1.33		--	0.2	0.2
<i>Atractides</i>	09030102002	4.00	4.00		--	0.5	0.5
Lymnaeidae	10010201	1.33	1.33		--	0.2	0.2
<i>Stagnicola</i>	10010201025	1.33	1.33		--	0.2	0.2
<i>Physa</i>	10010202027	16.00	16.00		SC	1.8	1.8