



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

Station Information

Station Number: S-1035	River Basin:	St. John
Waterbody: Otter Brook - Station 1035	HUC8 Name:	Aroostook
Town: Caribou	Latitude:	46° 52' 22.632" N
Directions: 26M UPSTREAM OF BELANGER ROAD CROSSING	Longitude:	67° 59' 6.684" W
	Stream Order:	2

Sample Information

Log Number: 2753	Type of Sample:	ROCK BAG	Date Deployed:	7/9/2019
Subsample Factor: X1	Replicates:	3	Date Retrieved:	8/5/2019

Classification Attainment

Statutory Class: B	Final Determination: A	Date:	11/12/2019
Model Result with $P \geq 0.6$: A	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	0.91	Class C	0.00
Class B	0.09	NA	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	1.00
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.00

Model Variables

01 Total Mean Abundance	336.33	18 Relative Abundance Ephemeroptera	0.43
02 Generic Richness	61.00	19 EPT Generic Richness	29.00
03 Plecoptera Mean Abundance	10.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	143.67	23 Relative Generic Richness- Plecoptera	0.11
05 Shannon-Wiener Generic Diversity	4.30	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	11.00
06 Hilsenhoff Biotic Index	3.63	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	3.38
07 Relative Abundance - Chironomidae	0.16	28 EP Generic Richness/14	1.43
08 Relative Generic Richness Diptera	0.30	30 Presence of Class A Indicator Taxa/7	0.57
09 <i>Hydropsyche</i> Abundance	70.67		
11 <i>Cheumatopsyche</i> Abundance	3.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.61		
13 Relative Abundance - Oligochaeta	0.01		
15 Perlidae Mean Abundance (Family Functional Group)	6.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	9.33		
17 Chironomini Abundance (Family Functional Group)	13.33		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	21.01
2	<i>Baetis</i>	18.90
3	<i>Serratella</i>	6.54
4	<i>Leucrocuta</i>	5.32
5	<i>Dipheter</i>	4.58



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 20.5 deg C
Dissolved Oxygen: 9.74 mg/l
Dissolved Oxygen Saturation: 108 %
Specific Conductance: 337.3 uS/cm
Velocity: 9.1 cm/s
pH: 8.3
Wetted Width: 3.5 m
Bankfull Width: 10.2 m
Depth: 35 cm

Waterbody Information - Retrieval

Temperature: 20.3 deg C
Dissolved Oxygen: 9.31 mg/l
Dissolved Oxygen Saturation: 102.7 %
Specific Conductance: 380.1 uS/cm
Velocity: 33.5 cm/s
pH: 8.33
Wetted Width: 2.9 m
Bankfull Width: 7.6 m
Depth: 35 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Cultivated	Open	Rolling	
Upland Hardwood			
Urban			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Nps Pollution	Above Road Crossing	Bedrock	5 %
		Boulder	5 %
		Gravel	45 %
		Rubble/Cobble	40 %
		Sand	5 %

Landcover Summary - 2004 Data

Sample Comments

BABY DUCKS WITH MOTHER PRESENT.



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Subsample Factor: X1

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				
Rhabditophora	0301	0.33	0.33		--	0.1	0.1
Nematomorpha	06	0.33	0.33		--	0.1	0.1
<i>Chaetogaster</i>	08020202002	0.33	0.33		--	0.1	0.1
<i>Nais</i>	08020202009	1.33	2.00		CG	0.4	0.6
<i>Nais bretscheri</i>	08020202009004	0.67			--	0.2	
<i>Paracapnia</i>	09020203018	0.33	0.33	1	SH	0.1	0.1
<i>Leuctra</i>	09020204020	0.33	0.33	0	SH	0.1	0.1
<i>Pteronarcys</i>	09020205023		1.67	0	SH		0.5
<i>Pteronarcys biloba</i>	09020205023061	1.67			--	0.5	
Perlodidae	09020207	0.67	0.67		--	0.2	0.2
<i>Sweltsa</i>	09020208040	1.00	1.00		PR	0.3	0.3
Perlidae	09020209	0.67			--	0.2	
<i>Paragnetina</i>	09020209049		0.37	1	PR		0.1
<i>Paragnetina immarginata</i>	09020209049149	0.33			--	0.1	
<i>Agnatina</i>	09020209050		5.96	2	PR		1.8
<i>Agnatina capitata</i>	09020209050152	5.33		2	PR	1.6	
Gomphidae	09020302	0.33	0.33		--	0.1	0.1
Baetidae	09020401	0.33			--	0.1	
<i>Baetis</i>	09020401001	2.00	63.56	4	CG	0.6	18.9
<i>Baetis flavistriga</i>	09020401001004	48.67			--	14.5	
<i>Baetis intercalaris</i>	09020401001008	5.67			--	1.7	
<i>Baetis tricaudatus</i>	09020401001012	7.00			--	2.1	
<i>Acerpenna</i>	09020401007		11.71	5	CG		3.5
<i>Acerpenna macdunnoughi</i>	09020401007001	11.67			--	3.5	
<i>Acentrella</i>	09020401008		0.67	3	CG		0.2
<i>Acentrella turbida</i>	09020401008021	0.67			--	0.2	
<i>Plauditus</i>	09020401012	0.67	0.67		CG	0.2	0.2
<i>Dipheter</i>	09020401013		15.39		--		4.6
<i>Dipheter hageni</i>	09020401013001	15.33			--	4.6	
Heptageniidae	09020402	0.33			--	0.1	
<i>Leucrocuta</i>	09020402011	17.67	17.89	1	SC	5.3	5.3
<i>Nixe</i>	09020402012	4.67	4.73	2	SC	1.4	1.4
<i>Stenacron</i>	09020402014	0.33	0.34	7	SC	0.1	0.1
<i>Maccaffertium</i>	09020402015	2.67	3.38	4	SC	0.8	1.0
<i>Maccaffertium modestum</i>	09020402015051	0.67			--	0.2	
<i>Isonychia</i>	09020404018	1.33	1.33	2	CF	0.4	0.4
<i>Paraleptophlebia</i>	09020406026	1.33	1.33	1	CG	0.4	0.4



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		Actual	Adjusted			Actual	Adjusted
<i>Serratella</i>	09020410037		22.00	2	CG		6.5
<i>Serratella serrata</i>	09020410037123	21.33			--	6.3	
<i>Serratella serratoides</i>	09020410037124	0.67			--	0.2	
<i>Tricorythodes</i>	09020411038	0.67	0.67	4	CG	0.2	0.2
Polycentropodidae	09020603	0.33	0.33		--	0.1	0.1
<i>Polycentropus</i>	09020603010	3.33	3.33	6	PR	1.0	1.0
<i>Cheumatopsyche</i>	09020604015	3.00	3.00	5	CF	0.9	0.9
<i>Hydropsyche</i>	09020604016	45.00	70.67	4	CF	13.4	21.0
<i>Hydropsyche bronta</i>	09020604016029	1.00			--	0.3	
<i>Hydropsyche morosa</i>	09020604016030	19.67			--	5.8	
<i>Hydropsyche slossonae</i>	09020604016031	0.33			--	0.1	
<i>Hydropsyche sparna</i>	09020604016032	4.00			--	1.2	
<i>Hydropsyche scalaris species group</i>	09020604016048	0.67			--	0.2	
<i>Glossosoma</i>	09020606020	10.67	10.67	0	SC	3.2	3.2
<i>Protoptila</i>	09020606022	1.67	1.67	1	SC	0.5	0.5
Hydroptilidae	09020607	0.33	0.33		--	0.1	0.1
<i>Mayatrichia</i>	09020607033	0.33	0.33		SC	0.1	0.1
<i>Lepidostoma</i>	09020611064	2.33	2.33	1	SH	0.7	0.7
<i>Nigronia</i>	09020701003		0.67	0	PR		0.2
<i>Nigronia serricornis</i>	09020701003003	0.67			--	0.2	
<i>Antocha</i>	09021001004	1.00	1.00	3	CG	0.3	0.3
Chironomidae	09021011				--		
<i>Nilotanytus</i>	09021011012		1.33	6	PR		0.4
<i>Nilotanytus fimbriatus</i>	09021011012027	1.33			--	0.4	
<i>Thienemannimyia</i>	09021011020		8.00	3	PR		2.4
<i>Thienemannimyia group</i>	09021011020041	8.00			--	2.4	
<i>Pagastia</i>	09021011025	1.67	1.67	1	--	0.5	0.5
<i>Potthastia</i>	09021011026		0.33	2	CG		0.1
<i>Potthastia gaedii</i>	09021011026045	0.33			--	0.1	
<i>Cricotopus</i>	09021011037		3.67	7	SH		1.1
<i>Cricotopus bicinctus</i>	09021011037057	2.67			--	0.8	
<i>Cricotopus trifascia</i>	09021011037070	1.00			--	0.3	
<i>Thienemanniella</i>	09021011062	0.67	0.67	6	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		2.00	5	CG		0.6
<i>Tvetenia paucunca</i>	09021011065114	2.00			--	0.6	
<i>Cladotanytarsus</i>	09021011068	0.67	0.67	7	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072		13.33	6	CF		4.0
<i>Rheotanytarsus exiguus group</i>	09021011072127	8.67			CF	2.6	



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<i>Rheotanytarsus pellucidus</i>	09021011072128	4.67			CF	1.4	
<i>Stempellinella</i>	09021011074	3.33	3.33	2	--	1.0	1.0
<i>Tanytarsus</i>	09021011076	4.33	4.33	6	CF	1.3	1.3
<i>Microtendipes</i>	09021011094		2.33	6	CF		0.7
<i>Microtendipes pedellus group</i>	09021011094166	2.00			--	0.6	
<i>Microtendipes rydalensis group</i>	09021011094168	0.33			--	0.1	
<i>Polypedilum</i>	09021011102		11.00	6	SH		3.3
<i>Polypedilum aviceps</i>	09021011102181	3.00			--	0.9	
<i>Polypedilum flavum</i>	09021011102182	8.00			--	2.4	
<i>Simulium</i>	09021012047	1.33	1.33	4	CF	0.4	0.4
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.1	0.1
<i>Hemerodromia</i>	09021016057	0.67	0.67	3	PR	0.2	0.2
Muscidae	09021022	0.67	0.67	6	--	0.2	0.2
<i>Psephenus</i>	09021108058		1.00	4	SC		0.3
<i>Psephenus herricki</i>	09021108058028	1.00			--	0.3	
<i>Ectopria</i>	09021109059	0.33	0.33	5	SC	0.1	0.1
<i>Dubiraphia</i>	09021113064	3.33	3.33	6	--	1.0	1.0
<i>Optioservus</i>	09021113067	4.00	5.33	3	SC	1.2	1.6
<i>Optioservus ovalis</i>	09021113067046	1.33			--	0.4	
<i>Promoesia</i>	09021113069		8.00		--		2.4
<i>Promoesia elegans</i>	09021113069051	0.33			--	0.1	
<i>Promoesia tardella</i>	09021113069052	7.67			--	2.3	
Acariformes	090301	0.33	0.33		--	0.1	0.1
<i>Hygrobates</i>	09030102001	1.00	1.00		--	0.3	0.3
<i>Physa</i>	10010202027	9.00	9.00		SC	2.7	2.7
<i>Helisoma</i>	10010203030		0.67		SC		0.2
<i>Helisoma anceps</i>	10010203030058	0.67			--	0.2	