



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

Station Information

Station Number: S-370
Waterbody: Aroostook River - Station 370
Town: Caribou
Directions: BELOW POTW - DOWNSTREAM OF MOORE BROOK

DEP Drainage: St. John
HUC8: 01010004
HUC8 Name: Aroostook River
Latitude: 46 49 37.56 N
Longitude: 67 55 40.92 W
Stream Order: 5

Sample Information

Log Number: 1859
Subsample Factor: X1

Type of Sample: ROCK BAG
Replicates: 3

Date Deployed: 7/22/2009
Date Retrieved: 8/19/2009

Classification Attainment

Statutory Class: C
Model Result with P>.6: A
Date Last Calculated: 1/12/2010

Final Determination: A
Reason for Determination: Model
Comments:

Date: 1/14/2010

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.82	Class A, B, or C	1.00
Class B	0.18	Non-Attainment	0.00

B or Better Model		A Model	
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	324.67	18 Relative Abundance Ephemeroptera	0.27
02 Generic Richness	42.00	19 EPT Generic Richness	22.00
03 Plecoptera Mean Abundance	30.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.00
04 Ephemeroptera Mean Abundance	87.67	23 Relative Generic Richness- Plecoptera	0.12
05 Shannon-Wiener Generic Diversity	3.95	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	54.11
06 Hilsenhoff Biotic Index	3.71	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	38.89
07 Relative Abundance - Chironomidae	0.11	28 EP Generic Richness/14	1.00
08 Relative Generic Richness Diptera	0.33	30 Presence of Class A Indicator Taxa/7	0.71
09 <i>Hydropsyche</i> Abundance	77.23		
11 <i>Cheumatopsyche</i> Abundance	52.77		
12 EPT Generic Richness/ Diptera	1.57		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance	30.33		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	0.00		
(Family Functional Group)			
17 Chironomini Abundance (Family	12.00		
Functional Group)			

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	23.79
2	<i>Cheumatopsyche</i>	16.25
3	<i>Maccaffertium</i>	9.11
4	<i>Agnatina</i>	6.16
5	<i>Serratella</i>	5.10



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 20.4 deg C
Dissolved Oxygen: 9.4 mg/l
Specific Conductance: 126 uS/cm
Velocity: 55 cm/s
pH: 7.97
Wetted Width:
Bankfull Width:
Depth: 70 cm

Waterbody Information - Retrieval

Temperature: 25.8 deg C
Dissolved Oxygen: 9.7 mg/l
Specific Conductance: 166 uS/cm
Velocity: 10 cm/s
pH: 7.3
Wetted Width:
Bankfull Width:
Depth: 47 cm

Water Chemistry - 7/22/2009

Soluble Reactive Phosphorus	1 ug/l	Nitrate+nitrite As N	0.23 mg/l
Total Phosphorus	0.015 mg/l	Total Kjeldahl Nitrogen	0.4 mg/l
Dissolved Organic Carbon	7.9 mg/l	Total Alkalinity	65 mg/l

Summary of Habitat Characteristics

Landuse Name

Canopy Cover

Terrain

Cultivated

Open

Rolling

Upland Conifer

Upland Hardwood

Potential Stressor

Location

Substrate

Agricultural Runoff

Below Agriculture NPS

Boulder 5 %

Urban Runoff

Below Urban NPS

Gravel 10 %

Main Stem

Rubble/Cobble 80 %

Sand 5 %

Landcover Summary - 2004 Data

Sample Comments



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Replicates: 3

Calculated: 1/12/2010

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Orconectes</i>	09010301008		0.33		CG		0.1
<i>Orconectes virilis</i>	09010301008016	0.33			--	0.1	
Capniidae	09020203	0.33	0.33		--	0.1	0.1
Perlidae	09020209	1.00			--	0.3	
<i>Acroneuria</i>	09020209042	1.33	9.31	0	PR	0.4	2.9
<i>Acroneuria abnormis</i>	09020209042121	3.67		0	PR	1.1	
<i>Acroneuria lycorias</i>	09020209042125	4.00			--	1.2	
<i>Attaneuria</i>	09020209043		0.34	1	--		0.1
<i>Attaneuria ruralis</i>	09020209043128	0.33			--	0.1	
<i>Paragnetina</i>	09020209049		0.69	1	PR		0.2
<i>Paragnetina immarginata</i>	09020209049149	0.67			--	0.2	
<i>Agnatina</i>	09020209050		19.99	2	PR		6.2
<i>Agnatina capitata</i>	09020209050152	19.33		2	PR	6.0	
Baetidae	09020401	1.33			--	0.4	
<i>Baetis</i>	09020401001		1.52	4	CG		0.5
<i>Baetis flavistriga</i>	09020401001004	1.00			--	0.3	
<i>Baetis intercalaris</i>	09020401001008	0.33			--	0.1	
<i>Acerpenna</i>	09020401007	1.00	9.48	5	CG	0.3	2.9
<i>Acerpenna pygmaea</i>	09020401007011	7.33			--	2.3	
Heptageniidae	09020402	11.33			--	3.5	
<i>Leucrocuta</i>	09020402011	9.33	12.75	1	SC	2.9	3.9
<i>Maccaffertium</i>	09020402015	16.33	29.59	4	SC	5.0	9.1
<i>Maccaffertium luteum</i>	09020402015049	5.33			--	1.6	
<i>Isonychia</i>	09020404018	6.33	6.33	2	CF	2.0	2.0
Leptophlebiidae	09020406	2.33	2.33		--	0.7	0.7
Ephemerellidae	09020410	1.33			--	0.4	
<i>Ephemerella</i>	09020410035	8.00	8.45	1	CG	2.5	2.6
<i>Serratella</i>	09020410037		16.55	2	CG		5.1
<i>Serratella (Teloganopsis) deficiens</i>	09020410037121	15.67			--	4.8	
<i>Caenis</i>	09020412040		0.67	7	CG		0.2
<i>Caenis anceps</i>	09020412040136	0.67			--	0.2	
<i>Dolophilodes</i>	09020601001	0.33	0.33	0	CF	0.1	0.1
<i>Chimarra</i>	09020601003	4.67	4.67	2	CF	1.4	1.4
Hydropsychidae	09020604	29.00			--	8.9	
<i>Cheumatopsyche</i>	09020604015	41.00	52.77	5	CF	12.6	16.3
<i>Hydropsyche</i>	09020604016	1.00	77.23	4	CF	0.3	23.8
<i>Hydropsyche bronta</i>	09020604016029	2.33			--	0.7	
<i>Hydropsyche morosa</i>	09020604016030	51.67			--	15.9	



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		Actual	Adjusted			Actual	Adjusted
<i>Hydropsyche slossonae</i>	09020604016031	1.00			--	0.3	
<i>Hydropsyche sparna</i>	09020604016032	0.67			--	0.2	
<i>Hydropsyche leonardi</i>	09020604016044	1.33			--	0.4	
<i>Hydropsyche scalaris group</i>	09020604016048	2.00			--	0.6	
<i>Macrostemum zebratum</i>	09020604018054				--		
<i>Glossosoma</i>	09020606020	0.67	0.67	0	SC	0.2	0.2
<i>Brachycentrus</i>	09020609043		1.33	0	CF		0.4
<i>Brachycentrus appalachia</i>	09020609043096	1.33			--	0.4	
<i>Lepidostoma</i>	09020611064	10.33	10.33	1	SH	3.2	3.2
<i>Oecetis</i>	09020618078		0.33	8	PR		0.1
<i>Oecetis avara</i>	09020618078153	0.33			--	0.1	
Chironomidae	09021011				--		
<i>Rheopelopia</i>	09021011017				PR		
<i>Potthastia</i>	09021011026		0.33	2	CG		0.1
<i>Potthastia gaedii</i>	09021011026045	0.33			--	0.1	
<i>Cardiocladius</i>	09021011034		0.33	5	PR		0.1
<i>Cardiocladius obscurus</i>	09021011034053	0.33			--	0.1	
<i>Cricotopus</i>	09021011037		0.67	7	SH		0.2
<i>Cricotopus bicinctus</i>	09021011037057	0.33			--	0.1	
<i>Cricotopus triannulatus/infuscatus</i>	09021011037078	0.33			SH	0.1	
<i>Nanocladius</i>	09021011049		0.33	3	CG		0.1
<i>Nanocladius spiniplenus</i>	09021011049090				--		
<i>Nanocladius downesi</i>	09021011049092	0.33			--	0.1	
<i>Thienemanniella</i>	09021011062	0.67	0.67	6	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		5.67	5	CG		1.7
<i>Tvetenia vitracies</i>	09021011065113	5.00			--	1.5	
<i>Tvetenia paucunca</i>	09021011065114	0.67			--	0.2	
<i>Micropsectra</i>	09021011070	1.00	1.00	7	CG	0.3	0.3
<i>Rheotanytarsus</i>	09021011072	14.33	14.33	6	CF	4.4	4.4
<i>Stempellinella</i>	09021011074		0.33	2	--		0.1
<i>Stempellinella sp. a epler</i>	09021011074002	0.33			--	0.1	
<i>Tanytarsus</i>	09021011076	0.67	0.67	6	CF	0.2	0.2
<i>Microtendipes</i>	09021011094		1.67	6	CF		0.5
<i>Microtendipes pedellus group</i>	09021011094166	0.33			--	0.1	
<i>Microtendipes rydalensis group</i>	09021011094168	1.33			--	0.4	
<i>Polypedilum</i>	09021011102		10.33	6	SH		3.2
<i>Polypedilum aviceps</i>	09021011102181	9.00			--	2.8	
<i>Polypedilum flavum</i>	09021011102182	1.33			--	0.4	



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<i>Atherix</i>	09021015055	1.00	1.00	2	PR	0.3	0.3
Empididae	09021016			6	--		
<i>Hemerodromia</i>	09021016057	1.33	1.33	3	PR	0.4	0.4
<i>Psephenus</i>	09021108058		2.33	4	SC		0.7
<i>Psephenus herricki</i>	09021108058028	2.33			--	0.7	
Elmidae	09021113	0.33			--	0.1	
<i>Dubiraphia</i>	09021113064	7.67	7.83	6	--	2.4	2.4
<i>Optioservus</i>	09021113067	2.33	2.72	3	SC	0.7	0.8
<i>Optioservus ovalis</i>	09021113067046	0.33			--	0.1	
<i>Stenelmis</i>	09021113070	2.33	5.45	5	SC	0.7	1.7
<i>Stenelmis crenata</i>	09021113070055	3.00			--	0.9	
<i>Ferrissia</i>	10010204035		1.33		SC		0.4
<i>Ferrissia rivularis</i>	10010204035066	1.33			--	0.4	