



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

Station Information

Station Number: S-376	River Basin:	St. John
Waterbody: Salmon Brook - Station 376	HUC8 Name:	Aroostook
Town: Perham	Latitude:	46 52 42.04 N
Directions: ABOVE HIGH MEADOW RD - UPSTREAM OF WASHBURN POTW	Longitude:	68 14 18.37 W
	Stream Order:	2

Sample Information

Log Number: 2745	Type of Sample:	ROCK BAG	Date Deployed:	7/8/2019
Subsample Factor: X1	Replicates:	3	Date Retrieved:	8/6/2019

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	0.82	Class A, B, or C	1.00
Class B	0.18	Non-Attainment	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	320.33	18 Relative Abundance Ephemeroptera	0.33
02 Generic Richness	65.00	19 EPT Generic Richness	34.00
03 Plecoptera Mean Abundance	13.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.33
04 Ephemeroptera Mean Abundance	105.00	23 Relative Generic Richness- Plecoptera	0.09
05 Shannon-Wiener Generic Diversity	4.50	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	38.00
06 Hilsenhoff Biotic Index	4.59	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	46.96
07 Relative Abundance - Chironomidae	0.41	28 EP Generic Richness/14	1.57
08 Relative Generic Richness Diptera	0.23	30 Presence of Class A Indicator Taxa/7	0.57
09 <i>Hydropsyche</i> Abundance	10.33		
11 <i>Cheumatopsyche</i> Abundance	16.33		
12 EPT Generic Richness/ Diptera Generic Richness	2.27		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	7.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	19.00		
17 Chironomini Abundance (Family Functional Group)	51.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Microtendipes</i>	15.09
2	<i>Maccaffertium</i>	12.99
3	<i>Rheotanytarsus</i>	10.51
4	<i>Acerpenna</i>	10.41
5	<i>Tanytarsus</i>	6.24



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Station Number: S-376 Town: Perham Date Deployed: 7/8/2019
Log Number: 2745 Waterbody: Salmon Brook - Station 376 Date Retrieved: 8/6/2019

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 23.9 deg C
Dissolved Oxygen: 8.26 mg/l
Dissolved Oxygen Saturation: 99 %
Specific Conductance: 95.6 uS/cm
Velocity: 24.4 cm/s
pH: 7.54
Wetted Width: 4 m
Bankfull Width: 4 m
Depth: 23 cm

Waterbody Information - Retrieval

Temperature: 23.8 deg C
Dissolved Oxygen: 9.1 mg/l
Dissolved Oxygen Saturation: 108.9 %
Specific Conductance: 130.1 uS/cm
Velocity: 15.2 cm/s
pH: 7.91
Wetted Width: 3.9 m
Bankfull Width: 3.9 m
Depth: 30.5 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Marsh	Open	Flat	
Upland Conifer			
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
	Above Road Crossing	Gravel	65 %
	Lake Outlet	Rubble/Cobble	35 %

Landcover Summary - 2004 Data

Total Area (ac)	5030	High Int. Dev. %	0.0	Water %	1.0	Non-vegetated %	0.0
		Med Int. Dev. %	0.0	Wetland %	17.0	Tilled Agriculture %	2.6
		Low Int. Dev. %	1.1	Upland Woody %	69.6	Grassland %	8.7
		Development %	1.1	Natural %	87.7	Human Altered %	11.3
						Impervious %	0.3
Total Land (ac)	4979	High Int. Dev. %	0.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.0	Wetland %	17.1	Tilled Agriculture %	2.7
		Low Int. Dev. %	1.1	Upland Woody %	70.3	Grassland %	8.8
		Development %	1.1	Natural %	88.6	Human Altered %	11.4
						Impervious %	0.3

Sample Comments

BLACKNOSE DACE, CREEK CHUB, KESTREL, CHARA PRESENT.



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Aquatic Life Taxonomic Inventory Report**

Station Number: S-376

Waterbody: Salmon Brook - Station 376

Town: Perham

Log Number: 2745

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				
<i>Hyalella</i>	09010203006	0.67	0.67	8	CG	0.2	0.2
<i>Orconectes</i>	09010301008	0.33	0.33		CG	0.1	0.1
<i>Paracapnia</i>	09020203018	0.33	0.33	1	SH	0.1	0.1
<i>Leuctra</i>	09020204020	4.33	4.33	0	SH	1.4	1.4
<i>Pteronarcys</i>	09020205023	0.33	0.33	0	SH	0.1	0.1
<i>Isoperla</i>	09020207026	1.00	1.00	2	PR	0.3	0.3
<i>Acroneuria</i>	09020209042	1.33	5.33	0	PR	0.4	1.7
<i>Acroneuria abnormis</i>	09020209042121	3.33		0	PR	1.0	
<i>Acroneuria lycorias</i>	09020209042125	0.67			--	0.2	
<i>Agnatina</i>	09020209050		2.00	2	PR		0.6
<i>Agnatina capitata</i>	09020209050152	2.00		2	PR	0.6	
<i>Boyeria</i>	09020301004		8.33	2	PR		2.6
<i>Boyeria grafiana</i>	09020301004011	8.33			--	2.6	
Gomphidae	09020302	1.00	1.00		--	0.3	0.3
<i>Cordulegaster</i>	09020303019	0.33	0.33	3	PR	0.1	0.1
Calopterygidae	09020307	1.00	1.00		--	0.3	0.3
<i>Calopteryx</i>	09020307043	0.67	0.67	5	PR	0.2	0.2
<i>Baetis</i>	09020401001		0.33	4	CG		0.1
<i>Baetis flavistriga</i>	09020401001004	0.33			--	0.1	
<i>Acerpenna</i>	09020401007		33.33	5	CG		10.4
<i>Acerpenna macdunnoughi</i>	09020401007001	33.33			--	10.4	
<i>Labiobaetis</i>	09020401009	0.33	0.33		--	0.1	0.1
<i>Procloeon</i>	09020401010		0.33		CG		0.1
<i>Procloeon rivulare</i>	09020401010004	0.33			--	0.1	
<i>Dipheter</i>	09020401013		1.00		--		0.3
<i>Dipheter hageni</i>	09020401013001	1.00			--	0.3	
Heptageniidae	09020402	0.33			--	0.1	
<i>Leucrocuta</i>	09020402011	4.67	4.70	1	SC	1.5	1.5
<i>Stenacron</i>	09020402014	0.67	1.34	7	SC	0.2	0.4
<i>Stenacron interpunctatum</i>	09020402014045	0.67			--	0.2	
<i>Maccaffertium</i>	09020402015	40.33	41.62	4	SC	12.6	13.0
<i>Maccaffertium ithaca</i>	09020402015048	0.67			--	0.2	
<i>Maccaffertium vicarium</i>	09020402015055	0.33			--	0.1	
Leptophlebiidae	09020406	6.00			--	1.9	
<i>Habrophlebia</i>	09020406023		1.64		--		0.5
<i>Habrophlebia vibrans</i>	09020406023072	1.00			--	0.3	
<i>Habrophlebiodes</i>	09020406024		4.38	6	SC		1.4



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Replicates: 3
Calculated: 11/5/2019

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Habrophlebiodes americana</i>	09020406024073	2.67			--	0.8	
<i>Paraleptophlebia</i>	09020406026	5.67	9.31	1	CG	1.8	2.9
<i>Ephemerella</i>	09020410035	1.67	1.67	1	CG	0.5	0.5
<i>Eurylophella</i>	09020410036	2.67	2.67	3	CG	0.8	0.8
<i>Serratella</i>	09020410037		0.33	2	CG		0.1
<i>Serratella serrata</i>	09020410037123	0.33			--	0.1	
<i>Tricorythodes</i>	09020411038	0.67	0.67	4	CG	0.2	0.2
<i>Caenis</i>	09020412040	1.33	1.33	7	CG	0.4	0.4
Polycentropodidae	09020603	1.67	1.67		--	0.5	0.5
<i>Polycentropus</i>	09020603010	1.33	1.33	6	PR	0.4	0.4
<i>Cheumatopsyche</i>	09020604015	16.33	16.33	5	CF	5.1	5.1
<i>Hydropsyche</i>	09020604016	7.33	10.33	4	CF	2.3	3.2
<i>Hydropsyche bronta</i>	09020604016029	1.00			--	0.3	
<i>Hydropsyche sparna</i>	09020604016032	1.67			--	0.5	
<i>Hydropsyche betteni</i>	09020604016037	0.33			--	0.1	
<i>Oxyethira</i>	09020607028	0.33	0.33	3	P	0.1	0.1
Limnephilidae	09020610	0.67	0.67		--	0.2	0.2
<i>Pycnopsyche</i>	09020610049	4.00	4.00	4	SH	1.2	1.2
<i>Lepidostoma</i>	09020611064	0.67	0.67	1	SH	0.2	0.2
<i>Psilotreta</i>	09020614068	0.33	0.33	0	SC	0.1	0.1
<i>Molanna</i>	09020615069	2.33	2.33	6	SC	0.7	0.7
<i>Mystacides</i>	09020618075		1.00	4	CG		0.3
<i>Mystacides sepulchralis</i>	09020618075147	1.00			--	0.3	
<i>Oecetis</i>	09020618078	0.67	2.00	8	PR	0.2	0.6
<i>Oecetis persimilis</i>	09020618078157	1.33			--	0.4	
<i>Nigronia</i>	09020701003		0.67	0	PR		0.2
<i>Nigronia serricornis</i>	09020701003003	0.67			--	0.2	
Chironomidae	09021011				--		
<i>Ablabesmyia</i>	09021011001	0.67	0.67	8	PR	0.2	0.2
<i>Labrundinia</i>	09021011008		0.67	7	PR		0.2
<i>Labrundinia pilosella</i>	09021011008022	0.67			--	0.2	
<i>Thienemannimyia</i>	09021011020		9.67	3	PR		3.0
<i>Thienemannimyia group</i>	09021011020041	9.67			--	3.0	
<i>Trissopelopia</i>	09021011021	7.33	7.33		PR	2.3	2.3
<i>Zavrelimyia</i>	09021011022	0.67	0.67	8	PR	0.2	0.2
<i>Cricotopus</i>	09021011037	0.33	1.00	7	SH	0.1	0.3
<i>Cricotopus bicinctus</i>	09021011037057	0.67			--	0.2	
<i>Thienemanniella</i>	09021011062	0.67	0.67	6	CG	0.2	0.2



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<i>Micropsectra</i>	09021011070	1.33	1.33	7	CG	0.4	0.4
<i>Rheotanytarsus</i>	09021011072		33.67	6	CF		10.5
<i>Rheotanytarsus exiguus group</i>	09021011072127	4.67			CF	1.5	
<i>Rheotanytarsus pellucidus</i>	09021011072128	29.00			CF	9.1	
<i>Stempellinella</i>	09021011074	5.33	5.33	2	--	1.7	1.7
<i>Tanytarsus</i>	09021011076	20.00	20.00	6	CF	6.2	6.2
<i>Microtendipes</i>	09021011094		48.33	6	CF		15.1
<i>Microtendipes rydalensis group</i>	09021011094168	48.33			--	15.1	
<i>Nilothauma</i>	09021011095	0.67	0.67	2	--	0.2	0.2
<i>Polypedilum</i>	09021011102	0.33	2.00	6	SH	0.1	0.6
<i>Polypedilum aviceps</i>	09021011102181	1.67			--	0.5	
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.1	0.1
<i>Psephenus</i>	09021108058		1.33	4	SC		0.4
<i>Psephenus herricki</i>	09021108058028	1.33			--	0.4	
<i>Dubiraphia</i>	09021113064	0.67	4.33	6	--	0.2	1.4
<i>Dubiraphia quadrinotata</i>	09021113064037	3.33			--	1.0	
<i>Dubiraphia vittata</i>	09021113064038	0.33			--	0.1	
<i>Optioservus</i>	09021113067	1.67	2.33	3	SC	0.5	0.7
<i>Optioservus fastiditus</i>	09021113067044	0.33			--	0.1	
<i>Optioservus trivittatus</i>	09021113067048	0.33			--	0.1	
<i>Promoresia</i>	09021113069		0.67		--		0.2
<i>Promoresia elegans</i>	09021113069051	0.67			--	0.2	
<i>Stenelmis</i>	09021113070	6.00	6.00	5	SC	1.9	1.9
<i>Hygrobates</i>	09030102001	0.33	0.33		--	0.1	0.1
<i>Amnicola</i>	10010104013	0.33	0.33		SC	0.1	0.1
<i>Gyraulus</i>	10010203029	0.33	0.33		SC	0.1	0.1