



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

Station Information

Station Number: S-928
Waterbody: Dudley Brook - Station 928
Town: Castle Hill
Directions: FARM RD OFF RT. 163
DEP Drainage: St. John
HUC8: 01010004
HUC8 Name: Aroostook River
Latitude: 46 39 50.71 N
Longitude: 68 10 47.12 W
Stream Order: 2

Sample Information

Log Number: 1867
Subsample Factor: X4
Type of Sample: ROCK BAG
Replicates: 3
Date Deployed: 7/23/2009
Date Retrieved: 8/20/2009

Classification Attainment

Statutory Class: A
Model Result with P>.6: A
Date Last Calculated: 4/15/2010
Final Determination: A
Reason for Determination: Model
Date: 4/16/2010
Comments:

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.62	Class A, B, or C	1.00
Class B	0.37	Non-Attainment	0.00
B or Better Model		A Model	
Class A or B	1.00	Class A	0.87
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.13

Model Variables

01 Total Mean Abundance	422.67	18 Relative Abundance Ephemeroptera	0.20
02 Generic Richness	55.00	19 EPT Generic Richness	25.00
03 Plecoptera Mean Abundance	20.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	85.33	23 Relative Generic Richness- Plecoptera	0.07
05 Shannon-Wiener Generic Diversity	4.98	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	98.08
06 Hilsenhoff Biotic Index	5.02	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	6.67
07 Relative Abundance - Chironomidae	0.49	28 EP Generic Richness/14	1.21
08 Relative Generic Richness Diptera	0.36	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	30.67		
11 <i>Cheumatopsyche</i> Abundance	13.33		
12 EPT Generic Richness/ Diptera	1.25		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance	1.33		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	11.89		
(Family Functional Group)			
17 Chironomini Abundance (Family	23.79		
Functional Group)			

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Cricotopus</i>	16.53
2	<i>Hydropsyche</i>	7.26
3	<i>Paratanytarsus</i>	4.92
4	<i>Rheotanytarsus</i>	4.92
5	<i>Tanytarsus</i>	3.52
6	<i>Microtendipes</i>	3.52



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 15.8 deg C
Dissolved Oxygen: 8.7 mg/l
Specific Conductance: 154 uS/cm
Velocity: 23 cm/s
pH: 7.8
Wetted Width: 4.8 m
Bankfull Width: 4.8 m
Depth: 26 cm

Waterbody Information - Retrieval

Temperature: 16.9 deg C
Dissolved Oxygen: 8.2 mg/l
Specific Conductance: 302 uS/cm
Velocity: 7 cm/s
pH: 7.88
Wetted Width: 4.2 m
Bankfull Width: 5.4 m
Depth: 9 cm

Water Chemistry - 7/23/2009

Soluble Reactive Phosphorus	4 ug/l	Nitrate+nitrite As N	0.29 mg/l
Total Phosphorus	0.017 mg/l	Total Kjeldahl Nitrogen	0.4 mg/l
Dissolved Organic Carbon	8.3 mg/l	Total Alkalinity	70 mg/l

Summary of Habitat Characteristics

Landuse Name

Cultivated

Swamp Conifer

Swamp Hardwood

Potential Stressor

Agricultural Runoff

Canopy Cover

Partly Open

Location

Below Agriculture NPS

Terrain

Rolling

Substrate

Boulder	10 %
Gravel	40 %
Rubble/Cobble	30 %
Sand	20 %

Landcover Summary - 2004 Data

Sample Comments

BAG 1 MOVED SLIGHTLY DOWNSTREAM AND SHOREWARD, BUT STILL SUBMERGED. BAGS 2 AND 3 SLIGHTLY OUT OF WATER, NET EXPOSED BUT ROCKS SUBMERGED.



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Subsample Factor: X4

Replicates: 3

Calculated: 4/15/2010

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Hyalella</i>	09010203006		1.33	8	CG		0.3
<i>Hyalella azteca</i>	09010203006011	1.33			--	0.3	
<i>Cambarus</i>	09010301007		1.33		CG		0.3
<i>Cambarus bartonii</i>	09010301007012	1.33			--	0.3	
<i>Leuctra</i>	09020204020	1.33	1.33	0	SH	0.3	0.3
<i>Pteronarcys</i>	09020205023		4.00	0	SH		0.9
<i>Pteronarcys biloba</i>	09020205023061	4.00			--	0.9	
<i>Isoperla</i>	09020207026	13.33	13.33	2	PR	3.2	3.2
<i>Agnatina</i>	09020209050		1.33	2	PR		0.3
<i>Agnatina capitata</i>	09020209050152	1.33		2	PR	0.3	
<i>Boyeria</i>	09020301004		2.67	2	PR		0.6
<i>Boyeria vinosa</i>	09020301004012	2.67			--	0.6	
<i>Ophiogomphus</i>	09020302015	1.33	1.33	1	PR	0.3	0.3
<i>Calopteryx</i>	09020307043		1.33	5	PR		0.3
<i>Calopteryx aequabilis</i>	09020307043085	1.33			--	0.3	
<i>Baetis</i>	09020401001		5.33	4	CG		1.3
<i>Baetis intercalaris</i>	09020401001008	2.67			--	0.6	
<i>Baetis tricaudatus</i>	09020401001012	2.67			--	0.6	
<i>Centropilum</i>	09020401003	1.33	1.33	2	CG	0.3	0.3
<i>Acerpenna</i>	09020401007	8.00	14.67	5	CG	1.9	3.5
<i>Acerpenna macdunnoughi</i>	09020401007001	6.67			--	1.6	
<i>Dipheter</i>	09020401013		4.00		--		0.9
<i>Dipheter hageni</i>	09020401013001	4.00			--	0.9	
<i>Stenacron</i>	09020402014		10.67	7	SC		2.5
<i>Stenacron interpunctatum</i>	09020402014045	10.67			--	2.5	
<i>Maccaffertium</i>	09020402015	1.33	6.67	4	SC	0.3	1.6
<i>Maccaffertium luteum</i>	09020402015049	5.33			--	1.3	
Leptophlebiidae	09020406	14.67	14.67		--	3.5	3.5
<i>Paraleptophlebia</i>	09020406026	4.00	4.00	1	CG	0.9	0.9
<i>Ephemera</i>	09020407027	1.33	1.33	1	CG	0.3	0.3
<i>Ephemerella</i>	09020410035	4.00	4.00	1	CG	0.9	0.9
<i>Eurylophella</i>	09020410036	10.67	10.67	3	CG	2.5	2.5
<i>Tricorythodes</i>	09020411038	6.67	6.67	4	CG	1.6	1.6
<i>Caenis</i>	09020412040	1.33	1.33	7	CG	0.3	0.3
<i>Lype</i>	09020602004		2.67	2	SC		0.6
<i>Lype diversa</i>	09020602004005	2.67			--	0.6	
<i>Polycentropus</i>	09020603010	6.67	6.67	6	PR	1.6	1.6
<i>Cheumatopsyche</i>	09020604015	13.33	13.33	5	CF	3.2	3.2



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		Actual	Adjusted			Actual	Adjusted
<i>Hydropsyche</i>	09020604016	16.00	30.67	4	CF	3.8	7.3
<i>Hydropsyche alhedra</i>	09020604016028	1.33			--	0.3	
<i>Hydropsyche slossonae</i>	09020604016031	10.67			--	2.5	
<i>Hydropsyche sparna</i>	09020604016032	2.67			--	0.6	
<i>Hydroptila</i>	09020607026	4.00	4.00	6	P	0.9	0.9
<i>Oligostomis</i>	09020608039	9.33	9.33	2	PR	2.2	2.2
Limnephilidae	09020610				--		
<i>Apatania</i>	09020610061	1.33	1.33		SC	0.3	0.3
<i>Lepidostoma</i>	09020611064	1.33	1.33	1	SH	0.3	0.3
<i>Bezzia/palpomyia</i>	09021010043	1.33	1.33	6	PR	0.3	0.3
Chironomidae	09021011	21.33			--	5.0	
<i>Conchapelopia</i>	09021011004	2.67	2.97	6	PR	0.6	0.7
<i>Trissopelopia</i>	09021011021		8.92		PR		2.1
<i>Trissopelopia ogemawi</i>	09021011021042	8.00			--	1.9	
<i>Pagastia</i>	09021011025		2.97	1	--		0.7
<i>Pagastia orthogonia</i>	09021011025001	2.67			--	0.6	
<i>Cricotopus</i>	09021011037	4.00	69.88	7	SH	0.9	16.5
<i>Cricotopus bicinctus</i>	09021011037057	52.00			--	12.3	
<i>Cricotopus vierriensis</i>	09021011037071	5.33			--	1.3	
<i>Cricotopus triannulatus/infuscatus</i>	09021011037078	1.33			SH	0.3	
<i>Doncricotopus</i>	09021011039	1.33	1.49		--	0.3	0.4
<i>Eukiefferiella</i>	09021011041		1.49	8	CG		0.4
<i>Eukiefferiella claripennis group</i>	09021011041075	1.33			--	0.3	
<i>Orthocladius</i>	09021011050	2.67	4.46	6	CG	0.6	1.1
<i>Orthocladius annectens</i>	09021011050092	1.33			--	0.3	
<i>Parametriocnemus</i>	09021011053	5.33	5.95	5	CG	1.3	1.4
<i>Rheocricotopus</i>	09021011057		2.97	6	CG		0.7
<i>Rheocricotopus robacki</i>	09021011057105	1.33			--	0.3	
<i>Rheocricotopus pauciseta</i>	09021011057111	1.33			--	0.3	
<i>Synorthocladius</i>	09021011061	1.33	1.49	2	CG	0.3	0.4
<i>Thienemanniella</i>	09021011062	5.33	5.95	6	CG	1.3	1.4
<i>Tvetenia</i>	09021011065		13.38	5	CG		3.2
<i>Tvetenia paucunca</i>	09021011065114	12.00			--	2.8	
<i>Paratanytarsus</i>	09021011071	18.67	20.82	6	--	4.4	4.9
<i>Rheotanytarsus</i>	09021011072	18.67	20.82	6	CF	4.4	4.9
<i>Stempellinella</i>	09021011074		4.46	2	--		1.1
<i>Stempellinella fimbriata</i>	09021011074002	4.00			--	0.9	
<i>Tanytarsus</i>	09021011076	13.33	14.87	6	CF	3.2	3.5



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<i>Microtendipes</i>	09021011094		14.87	6	CF		3.5
<i>Microtendipes pedellus group</i>	09021011094166	13.33			--	3.2	
<i>Polypedilum</i>	09021011102		8.92	6	SH		2.1
<i>Polypedilum aviceps</i>	09021011102181	8.00			--	1.9	
<i>Atherix</i>	09021015055	1.33	1.33	2	PR	0.3	0.3
<i>Dubiraphia</i>	09021113064	14.67	14.67	6	--	3.5	3.5
<i>Optioservus</i>	09021113067	8.00	8.00	3	SC	1.9	1.9
<i>Promoresia</i>	09021113069		4.00		--		0.9
<i>Promoresia tardella</i>	09021113069052	4.00			--	0.9	
<i>Sperchonopsis</i>	09030107002	1.33	1.33		--	0.3	0.3
<i>Physa</i>	10010202026	2.67	2.67		SC	0.6	0.6