



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

Station Information

Station Number: S-215	DEP Drainage: St. John
Waterbody: Dudley Brook - Station 215	HUC8: 01010004
Town: Chapman	HUC8 Name: Aroostook River
Directions: BELOW WEST CHAPMAN RD.	Latitude: 46 39 23.89 N
	Longitude: 68 9 39.54 W
	Stream Order: 2

Sample Information

Log Number: 1868	Type of Sample: ROCK BAG	Date Deployed: 7/23/2009
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/18/2009

Classification Attainment

Statutory Class: A	Final Determination: A	Date: 4/1/2010
Model Result with P>.6: A	Reason for Determination: Model	
Date Last Calculated: 4/1/2010	Comments: Low A (.67).	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.35	Class A, B, or C	1.00
Class B	0.59	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.67
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.33

Model Variables

01 Total Mean Abundance	375.67	18 Relative Abundance Ephemeroptera	0.33
02 Generic Richness	56.00	19 EPT Generic Richness	22.00
03 Plecoptera Mean Abundance	1.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.02
04 Ephemeroptera Mean Abundance	122.67	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	3.24	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	18.35
06 Hilsenhoff Biotic Index	5.06	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	80.39
07 Relative Abundance - Chironomidae	0.51	28 EP Generic Richness/14	1.00
08 Relative Generic Richness Diptera	0.38	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	28.20		
11 <i>Cheumatopsyche</i> Abundance	4.47		
12 EPT Generic Richness/ Diptera	1.05		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.02		
15 Perlidae Mean Abundance	1.33		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	1.35		
(Family Functional Group)			
17 Chironomini Abundance (Family	16.59		
Functional Group)			

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Rheotanytarsus</i>	40.48
2	<i>Maccaffertium</i>	21.40
3	<i>Hydropsyche</i>	7.51
4	<i>Acerpenna</i>	5.40
5	<i>Cricotopus</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: 8.9 mg/l
Specific Conductance: 205 uS/cm
Velocity: 42 cm/s
pH: 7.9
Wetted Width: 3.9 m
Bankfull Width: 6.4 m
Depth: 36 cm

Waterbody Information - Retrieval

Temperature: 26.8 deg C
Dissolved Oxygen: 8 mg/l
Specific Conductance: 235 uS/cm
Velocity: 12 cm/s
pH: 7.99
Wetted Width: 3.2 m
Bankfull Width: 5 m
Depth: 28 cm

Water Chemistry - 7/23/2009

Soluble Reactive Phosphorus	3 ug/l	Nitrate+nitrite As N	0.42 mg/l
Total Phosphorus	0.017 mg/l	Total Kjeldahl Nitrogen	0.3 mg/l
Dissolved Organic Carbon	7 mg/l	Total Alkalinity	90 mg/l

Summary of Habitat Characteristics

Landuse Name

Canopy Cover

Terrain

Upland Conifer

Dense

Rolling

Upland Hardwood

Potential Stressor

Location

Substrate

Agricultural Runoff

Below Agriculture NPS

Boulder	25 %
Gravel	25 %
Rubble/Cobble	50 %

Landcover Summary - 2004 Data

Total Area (ac)	3936	High Int. Dev. %	0.0	Water %	0.0	Non-vegetated %	0.0
		Med Int. Dev. %	0.2	Wetland %	6.4	Tilled Agriculture %	22.0
		Low Int. Dev. %	1.5	Upland Woody %	68.0	Grassland %	1.9
		Development %	1.7	Natural %	74.4	Human Altered %	25.6
						Impervious %	1.2

Sample Comments



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Replicates: 3

Calculated: 4/1/2010

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
Nematoda	05	0.33	0.33		--	0.1	0.1
<i>Chaetogaster</i>	08020202002		0.33		--		0.1
<i>Chaetogaster diastrophus</i>	08020202002002	0.33			--	0.1	
<i>Pristina</i>	08020202004		0.67		--		0.2
<i>Pristina leidy</i>	08020202004005	0.67			--	0.2	
<i>Nais</i>	08020202009		5.33		CG		1.4
<i>Nais simplex</i>	08020202009008	1.33			--	0.4	
<i>Nais variabilis</i>	08020202009009	4.00			--	1.1	
<i>Erpobdella</i>	08030301002	0.33	0.33		--	0.1	0.1
<i>Orconectes</i>	09010301008		0.33		CG		0.1
<i>Orconectes virilis</i>	09010301008016	0.33			--	0.1	
<i>Agnatina</i>	09020209050		1.33	2	PR		0.4
<i>Agnatina capitata</i>	09020209050152	1.33		2	PR	0.4	
<i>Boyeria</i>	09020301004		0.33	2	PR		0.1
<i>Boyeria vinosa</i>	09020301004012	0.33			--	0.1	
Calopterygidae	09020307	1.33	1.33		--	0.4	0.4
Baetidae	09020401	1.67			--	0.4	
<i>Baetis</i>	09020401001		0.71	4	CG		0.2
<i>Baetis flavistriga</i>	09020401001004	0.33			--	0.1	
<i>Baetis intercalaris</i>	09020401001008	0.33			--	0.1	
<i>Centropilum</i>	09020401003	1.00	1.07	2	CG	0.3	0.3
<i>Acerpenna</i>	09020401007	8.00	20.28	5	CG	2.1	5.4
<i>Acerpenna macdunnoughi</i>	09020401007001	11.00			--	2.9	
<i>Acentrella</i>	09020401008	0.33	0.71	3	CG	0.1	0.2
<i>Acentrella turbida</i>	09020401008021	0.33			--	0.1	
<i>Dipheter</i>	09020401013		3.56		--		0.9
<i>Dipheter hageni</i>	09020401013001	3.33			--	0.9	
Heptageniidae	09020402	6.00			--	1.6	
<i>Leucrocota</i>	09020402011	1.33	1.44	1	SC	0.4	0.4
<i>Stenacron</i>	09020402014		2.51	7	SC		0.7
<i>Stenacron interpunctatum</i>	09020402014045	2.33			--	0.6	
<i>Maccaffertium</i>	09020402015	21.33	80.39	4	SC	5.7	21.4
<i>Maccaffertium luteum</i>	09020402015049	50.33			--	13.4	
<i>Maccaffertium mediopunctatum</i>	09020402015050	3.00			--	0.8	
Leptophlebiidae	09020406	2.33	2.33		--	0.6	0.6
<i>Paraleptophlebia</i>	09020406026	1.33	1.33	1	CG	0.4	0.4
<i>Ephemerella</i>	09020410035	5.67	5.67	1	CG	1.5	1.5
<i>Eurylophella</i>	09020410036	2.00	2.00	3	CG	0.5	0.5



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		Actual	Adjusted			Actual	Adjusted
<i>Caenis</i>	09020412040	0.67	0.67	7	CG	0.2	0.2
<i>Dolophilodes</i>	09020601001	0.33	0.33	0	CF	0.1	0.1
Hydropsychidae	09020604	1.00			--	0.3	
<i>Cheumatopsyche</i>	09020604015	4.33	4.47	5	CF	1.2	1.2
<i>Hydropsyche</i>	09020604016	14.67	28.20	4	CF	3.9	7.5
<i>Hydropsyche alhedra</i>	09020604016028	0.33			--	0.1	
<i>Hydropsyche morosa</i>	09020604016030	0.67			--	0.2	
<i>Hydropsyche slossonae</i>	09020604016031	9.67			--	2.6	
<i>Hydropsyche sparna</i>	09020604016032	1.67			--	0.4	
<i>Hydropsyche depravata complex</i>	09020604016041	0.33			CF	0.1	
<i>Hydroptila</i>	09020607026			6	P		
<i>Oxyethira</i>	09020607028	0.33	0.33	3	P	0.1	0.1
Limnephilidae	09020610	0.33	0.33		--	0.1	0.1
<i>Apatania</i>	09020610061	1.00	1.00		SC	0.3	0.3
<i>Lepidostoma</i>	09020611064	1.67	1.67	1	SH	0.4	0.4
<i>Oecetis</i>	09020618078	0.33	1.00	8	PR	0.1	0.3
<i>Oecetis persimilis</i>	09020618078157	0.67			--	0.2	
<i>Antocha</i>	09021001004	4.00	4.00	3	CG	1.1	1.1
Chironomidae	09021011	3.00			--	0.8	
<i>Conchapelopia</i>	09021011004			6	PR		
<i>Nilotanyus</i>	09021011012		0.68	6	PR		0.2
<i>Nilotanyus fimbriatus</i>	09021011012027	0.67			--	0.2	
<i>Paramerina</i>	09021011013	0.67	0.68		--	0.2	0.2
<i>Pagastia</i>	09021011025		0.68	1	--		0.2
<i>Pagastia orthogonia</i>	09021011025001	0.67			--	0.2	
<i>Cricotopus</i>	09021011037		13.21	7	SH		3.5
<i>Cricotopus bicinctus</i>	09021011037057	7.00			--	1.9	
<i>Cricotopus patens</i>	09021011037075	2.33			--	0.6	
<i>Cricotopus triannulatus/infuscatus</i>	09021011037078	3.67			SH	1.0	
<i>Nanocladius</i>	09021011049	0.33	0.68	3	CG	0.1	0.2
<i>Nanocladius spiniplenus</i>	09021011049090	0.33			--	0.1	
<i>Orthocladius</i>	09021011050	1.00	1.02	6	CG	0.3	0.3
<i>Parametriocnemus</i>	09021011053	0.67	0.68	5	CG	0.2	0.2
<i>Thienemanniella</i>	09021011062		0.68	6	CG		0.2
<i>Thienemanniella boltoni</i>	09021011062113	0.67			--	0.2	
<i>Tvetenia</i>	09021011065		2.37	5	CG		0.6
<i>Tvetenia vitracies</i>	09021011065113	0.33			--	0.1	
<i>Tvetenia paucunca</i>	09021011065114	2.00			--	0.5	



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<i>Micropsectra</i>	09021011070	0.67	0.68	7	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072	149.67	152.05	6	CF	39.8	40.5
<i>Tanytarsus</i>	09021011076	0.67	0.68	6	CF	0.2	0.2
<i>Dicrotendipes</i>	09021011085	0.33	0.34	8	CG	0.1	0.1
<i>Microtendipes</i>	09021011094		8.47	6	CF		2.3
<i>Microtendipes pedellus group</i>	09021011094166	7.33			--	2.0	
<i>Microtendipes rydalensis group</i>	09021011094168	1.00			--	0.3	
<i>Polypedilum</i>	09021011102		7.79	6	SH		2.1
<i>Polypedilum aviceps</i>	09021011102181	6.33			--	1.7	
<i>Polypedilum flavum</i>	09021011102182	1.00			--	0.3	
<i>Polypedilum albicorne</i>	09021011102195	0.33			--	0.1	
<i>Helopelopia</i>	09021011114	0.33	0.34	6	PR	0.1	0.1
<i>Simulium</i>	09021012047		0.33	4	CF		0.1
<i>Simulium tuberosum</i>	09021012047067	0.33			--	0.1	
Empididae	09021016			6	--		
<i>Hemerodromia</i>	09021016057	3.67	3.67	3	PR	1.0	1.0
<i>Roederiodes</i>	09021016058	0.33	0.33	3	PR	0.1	0.1
<i>Neoplasta</i>	09021016064	0.67	0.67		PR	0.2	0.2
<i>Psephenus</i>	09021108058		0.33	4	SC		0.1
<i>Psephenus herricki</i>	09021108058028	0.33			--	0.1	
Elmidae	09021113	0.33			--	0.1	
<i>Optioservus</i>	09021113067	0.67	0.74	3	SC	0.2	0.2
<i>Promoresia</i>	09021113069		0.37		--		0.1
<i>Promoresia tardella</i>	09021113069052	0.33			--	0.1	
<i>Stenelmis</i>	09021113070	1.67	2.22	5	SC	0.4	0.6
<i>Stenelmis crenata</i>	09021113070055	0.33			--	0.1	
Gastropoda	1001	0.33	0.33		--	0.1	0.1
<i>Ferrissia</i>	10010204035		1.33		SC		0.4
<i>Ferrissia rivularis</i>	10010204035066	1.33			--	0.4	