



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

Station Information

Station Number:	S-513	DEP Drainage:	Penobscot
Waterbody:	Penjawoc Stream - Station 513	HUC8:	01020005
Town:	Bangor	HUC8 Name:	Lower Penobscot
Directions:	SATURN DEALERSHIP	Latitude:	44 49 33.95 N
		Longitude:	68 44 21.74 W
		Stream Order:	2

Sample Information

Log Number:	1712	Type of Sample:	ROCK BAG	Date Deployed:	7/8/2008
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/5/2008

Classification Attainment

Statutory Class:	B	Final Determination:	C	Date:	3/24/2009
Model Result with P>.6:	C	Reason for Determination:	Model		
Date Last Calculated:	3/17/2009	Comments:			

Model Probabilities

<u>First Stage Model</u>				<u>C or Better Model</u>	
Class A	0.02	Class C	0.73	Class A, B, or C	0.90
Class B	0.08	NA	0.17	Non-Attainment	0.10
<u>B or Better Model</u>				<u>A Model</u>	
Class A or B			0.01	Class A	0.00
Class C or Non-Attainment			0.99	Class B or C or Non-Attainment	1.00

Model Variables

01 Total Mean Abundance	434.33	18 Relative Abundance Ephemeroptera	0.03
02 Generic Richness	56.00	19 EPT Generic Richness	16.00
03 Plecoptera Mean Abundance	0.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	11.67	23 Relative Generic Richness- Plecoptera	0.00
05 Shannon-Wiener Generic Diversity	3.20	25 Sum of Abundances: <i>Cheumatopsyche</i> <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	49.94
06 Hilsenhoff Biotic Index	4.39	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.67
07 Relative Abundance - Chironomidae	0.09	28 EP Generic Richness/14	0.29
08 Relative Generic Richness Diptera	0.38	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	223.88		
11 <i>Cheumatopsyche</i> Abundance	38.79		
12 EPT Generic Richness/ Diptera Generic Richness	0.76		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	3.24		
17 Chironomini Abundance (Family Functional Group)	8.63		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	51.55
2	<i>Cheumatopsyche</i>	8.93
3	<i>Dubiraphia</i>	5.18
4	<i>Helicopsyche</i>	4.76
5	<i>Stenelmis</i>	3.48



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Station Number: S-513

Town: Bangor

Date Deployed: 7/8/2008

Log Number: 1712

Waterbody: Penjajawoc Stream - Station 513

Date Retrieved: 8/5/2008

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 24.6 deg C
Dissolved Oxygen: 9.1 mg/l
Specific Conductance: 708 uS/cm
Velocity: 21 cm/s
pH:
Wetted Width: 3.5 m
Bankfull Width: 5 m
Depth: 25 cm

Waterbody Information - Retrieval

Temperature: 19.9 deg C
Dissolved Oxygen: 8.2 mg/l
Specific Conductance: 315 uS/cm
Velocity: 81 cm/s
pH: 7.42
Wetted Width: 4.5 m
Bankfull Width: 5 m
Depth: 44 cm

Water Chemistry - Retrieval

Ammonia As Nitrogen	0.02 mg/l	Soluble Reactive Phosphorus	5 ug/l
Nitrate+nitrite As N	0.09 mg/l	Total Phosphorus	0.038 mg/l
Total Kjeldahl Nitrogen	0.8 mg/l	Total Suspended Solids	7.9 mg/l
Dissolved Organic Carbon	12 mg/l	Total Dissolved Solids	190 mg/l

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Swamp Hardwood	Canopy Open	Rolling Terrain
Urban		

<u>Stressor</u>	<u>Location</u>	<u>Substrate</u>
Urban Runoff Stressor	Below Road Crossing	Boulder 5 %
	Below Urban NPS	Gravel 30 %
		Rubble/Cobble 50 %
		Sand 15 %

Landcover Summary - 2004 Data

Total Area (ac)	4080	High Int. Dev. %	8.0	Water %	1.8	Non-vegetated %	0.1
Total Land (ac)	4010	Med Int. Dev. %	3.3	Wetland %	9.8	Tilled Agriculture %	6.7
		Low Int. Dev. %	3.7	Upland Woody %	53.0	Human Altered %	37.3
		Development %	14.9	Natural %	62.7	Impervious %	11.5

Sample Comments

8/5/08: very high water levels.

The invertebrates in Replicate 3 had a tarry substance on them. This was particularly evident for the midges.



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Aquatic Life Taxonomic Inventory Report**

Station Number: S-513

Waterbody: Penjajawoc Stream - Station 513

Town: Bangor

Log Number: 1712

Subsample Factor: X1

Replicates: 3

Calculated: 3/17/2009

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Nais</i>	08020202009		0.33		CG		0.1
<i>Nais variabilis</i>	08020202009009	0.33			--	0.1	
<i>Caecidotea</i>	09010101001		1.00	8	SH		0.2
<i>Caecidotea communis</i>	09010101001001	1.00			--	0.2	
<i>Hyaella</i>	09010203006		0.33	8	CG		0.1
<i>Hyaella azteca</i>	09010203006011	0.33			--	0.1	
<i>Boyeria</i>	09020301004		1.67	2	PR		0.4
<i>Boyeria grafiana</i>	09020301004011	0.67			--	0.2	
<i>Boyeria vinosa</i>	09020301004012	1.00			--	0.2	
<i>Calopteryx</i>	09020307043		0.33	5	PR		0.1
<i>Calopteryx maculata</i>	09020307043088	0.33			--	0.1	
Baetidae	09020401	1.67			--	0.4	
<i>Baetis</i>	09020401001		3.16	4	CG		0.7
<i>Baetis flavistriga</i>	09020401001004	2.33			--	0.5	
<i>Baetis pluto</i>	09020401001009	0.33			--	0.1	
<i>Acerpenna</i>	09020401007	1.33	7.51	5	CG	0.3	1.7
<i>Acerpenna macdunnoughi</i>	09020401007001	5.00			--	1.2	
<i>Maccaffertium</i>	09020402015		0.67	4	SC		0.2
<i>Maccaffertium modestum</i>	09020402015051	0.67			--	0.2	
Leptophlebiidae	09020406	0.33	0.33		--	0.1	0.1
Philopotamidae	09020601	0.33	0.33		--	0.1	0.1
<i>Chimarra</i>	09020601003	1.33	1.33	2	CF	0.3	0.3
<i>Lype</i>	09020602004		1.00	2	SC		0.2
<i>Lype diversa</i>	09020602004005	1.00			--	0.2	
<i>Nyctiophylax</i>	09020603009		2.67	5	PR		0.6
<i>Nyctiophylax moestus</i>	09020603009013	2.67			--	0.6	
Hydropsychidae	09020604	5.33			--	1.2	
<i>Cheumatopsyche</i>	09020604015	38.00	38.79	5	CF	8.7	8.9
<i>Hydropsyche</i>	09020604016	88.67	223.88	4	CF	20.4	51.5
<i>Hydropsyche bronta</i>	09020604016029	0.33			--	0.1	
<i>Hydropsyche sparna</i>	09020604016032	4.67			--	1.1	
<i>Hydropsyche depravata-complex</i>	09020604016041	125.67			CF	28.9	
<i>Hydroptila</i>	09020607026	5.67	5.67	6	P	1.3	1.3
Limnephilidae	09020610	0.33	0.33		--	0.1	0.1
<i>Pycnopsyche</i>	09020610049	1.00	1.00	4	SH	0.2	0.2
<i>Lepidostoma</i>	09020611064	0.33	0.33	1	SH	0.1	0.1
<i>Helicopsyche</i>	09020616070		20.67	3	SC		4.8
<i>Helicopsyche borealis</i>	09020616070137	20.67			--	4.8	



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Waterbody: Penjajawoc Stream - Station 513

Town: Bangor

Log Number: 1712

Subsample Factor: X1

Replicates: 3

Calculated: 3/17/2009

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Mystacides</i>	09020618075		0.33	4	CG		0.1
<i>Mystacides sepulchralis</i>	09020618075147	0.33			--	0.1	
<i>Nigronia</i>	09020701003		4.33	0	PR		1.0
<i>Nigronia serricornis</i>	09020701003003	4.33			--	1.0	
Lepidoptera	090209	0.33	0.33		--	0.1	0.1
<i>Antocha</i>	09021001004	1.67	1.67	3	CG	0.4	0.4
Chironomidae	09021011	3.00			--	0.7	
<i>Conchapelopia</i>	09021011004	1.00	1.08	6	PR	0.2	0.2
<i>Labrundinia</i>	09021011008	1.67	1.80	7	PR	0.4	0.4
<i>Meropelopia</i>	09021011010	0.33	0.36		--	0.1	0.1
<i>Diamesa</i>	09021011024	0.33	0.36	5	CG	0.1	0.1
<i>Cricotopus</i>	09021011037	0.33	8.99	7	SH	0.1	2.1
<i>Cricotopus bicinctus</i>	09021011037057	5.67			--	1.3	
<i>Cricotopus trifascia</i>	09021011037070	1.33			--	0.3	
<i>Cricotopus triannulatus/infuscatus</i>	09021011037078	1.00			SH	0.2	
<i>Nanocladius</i>	09021011049	0.67	0.72	3	CG	0.2	0.2
<i>Parakiefferiella</i>	09021011052	0.33	0.36		CG	0.1	0.1
<i>Parametriocnemus</i>	09021011053	0.67	0.72	5	CG	0.2	0.2
<i>Rheocricotopus</i>	09021011057		1.44	6	CG		0.3
<i>Rheocricotopus robacki</i>	09021011057105	1.33			--	0.3	
<i>Thienemanniella</i>	09021011062	0.33	0.36	6	CG	0.1	0.1
<i>Tvetenia</i>	09021011065		4.32	5	CG		1.0
<i>Tvetenia vitracies</i>	09021011065113	1.67			--	0.4	
<i>Tvetenia paucunca</i>	09021011065114	2.33			--	0.5	
<i>Rheotanytarsus</i>	09021011072	9.00	9.71	6	CF	2.1	2.2
<i>Tanytarsus</i>	09021011076	2.00	2.16	6	CF	0.5	0.5
<i>Cryptochironomus</i>	09021011082	0.67	0.72	8	PR	0.2	0.2
<i>Microtendipes</i>	09021011094		2.52	6	CF		0.6
<i>Microtendipes pedellus-grp.</i>	09021011094166	2.33			--	0.5	
<i>Paratendipes</i>	09021011100		0.36	8	CG		0.1
<i>Paratendipes albimanus-grp.</i>	09021011100176	0.33			--	0.1	
<i>Phaenopsectra</i>	09021011101		2.16	7	SC		0.5
<i>Phaenopsectra obediens</i>	09021011101182	2.00			SC	0.5	
<i>Polypedilum</i>	09021011102	1.00	2.88	6	SH	0.2	0.7
<i>Polypedilum flavum</i>	09021011102182	1.00			--	0.2	
<i>Polypedilum illinoense-grp.</i>	09021011102185	0.67			--	0.2	
<i>Simulium</i>	09021012047	0.67	5.33	4	CF	0.2	1.2
<i>Simulium aureum</i>	09021012047052	2.00			--	0.5	



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<i>Simulium tuberosum complex</i>	09021012047071	0.33			CF	0.1	
<i>Simulium venustum/verecundum complex</i>	09021012047072	2.33			CF	0.5	
<i>Hemerodromia</i>	09021016057	0.33	0.33	3	PR	0.1	0.1
<i>Psephenus</i>	09021108058		8.00	4	SC		1.8
<i>Psephenus herricki</i>	09021108058028	8.00			--	1.8	
Elmidae	09021113	0.33			--	0.1	
<i>Dubiraphia</i>	09021113064	22.33	22.50	6	CG	5.1	5.2
<i>Macronychus</i>	09021113065		2.02	4	--		0.5
<i>Macronychus glabratus</i>	09021113065040	2.00			--	0.5	
<i>Optioservus</i>	09021113067	2.67	4.37	3	SC	0.6	1.0
<i>Optioservus fastiditus</i>	09021113067044	1.67			--	0.4	
<i>Stenelmis</i>	09021113070	8.33	15.11	5	SC	1.9	3.5
<i>Stenelmis crenata</i>	09021113070055	6.67			--	1.5	
<i>Amnicola</i>	10010104013		4.67		SC		1.1
<i>Amnicola limosa</i>	10010104013018	4.67			--	1.1	
<i>Lymnaea</i>	10010201022	1.33	1.33		SC	0.3	0.3
<i>Physa</i>	10010202026	2.00	2.00		SC	0.5	0.5
Planorbidae	10010203	1.00			--	0.2	
<i>Gyraulus</i>	10010203029		6.90		SC		1.6
<i>Gyraulus parvus</i>	10010203029057	6.00			--	1.4	
<i>Helisoma</i>	10010203030		0.77		SC		0.2
<i>Helisoma anceps</i>	10010203030058	0.67			--	0.2	
<i>Ferrissia</i>	10010204035		0.67		SC		0.2
<i>Ferrissia walkeri</i>	10010204035067	0.67			--	0.2	
<i>Pisidium</i>	10020201002	0.67	1.33		CF	0.2	0.3
<i>Pisidium walkeri</i>	10020201002017	0.67			CF	0.2	