



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

Station Information

Station Number: S-829	River Basin: Penobscot
Waterbody: Kenduskeag Stream - Station 829	HUC8 Name: Lower Penobscot
Town: Bangor	Latitude: 44 48 36.53 N
Directions: AT PARK AT CORNER OF HARLOW AND VALLEY AVE.	Longitude: 68 46 42.87 W
	Stream Order: 4

Sample Information

Log Number: 2473	Type of Sample: ROCK BAG	Date Deployed: 7/11/2016
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/8/2016

Classification Attainment

Statutory Class: C	Final Determination: C	Date: 4/7/2017
Model Result with $P \geq 0.6$: C	Reason for Determination: Best Professional Judgement	
Date Last Calculated: 4/5/2017	Comments: Indeterminate for Class B (0.49) not raised to Class B based on the number of sensitive organisms in the community.	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.16	Class A, B, or C	1.00
Class B	0.52	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.49	Class A	0.04
Class C or Non-Attainment	0.51	Class B or C or Non-Attainment	0.96

Model Variables

01 Total Mean Abundance	467.00	18 Relative Abundance Ephemeroptera	0.02
02 Generic Richness	45.00	19 EPT Generic Richness	20.00
03 Plecoptera Mean Abundance	0.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	3.67
04 Ephemeroptera Mean Abundance	9.00	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	3.97	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	107.33
06 Hilsenhoff Biotic Index	5.36	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.67
07 Relative Abundance - Chironomidae	0.37	28 EP Generic Richness/14	0.50
08 Relative Generic Richness Diptera	0.29	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	9.67		
11 <i>Cheumatopsyche</i> Abundance	25.67		
12 EPT Generic Richness/ Diptera Generic Richness	1.54		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	0.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	31.00		
17 Chironomini Abundance (Family Functional Group)	47.33		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Amnicola</i>	26.91
2	<i>Cricotopus</i>	12.92
3	<i>Polypedilum</i>	7.85
4	<i>Stenelmis</i>	6.57
5	<i>Cheumatopsyche</i>	5.50



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Log Number: 2473 Waterbody: Kenduskeag Stream - Station 829 Date Retrieved: 8/8/2016

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 23.1 deg C
 Dissolved Oxygen: 10.45 mg/l
 Dissolved Oxygen Saturation: 121.7 %
 Specific Conductance: 250.5 uS/cm
 Velocity: 33.5 cm/s
 pH: 8.73
 Wetted Width: 22 m
 Bankfull Width: 50 m
 Depth: 53 cm

Waterbody Information - Retrieval

Temperature: 25.5 deg C
 Dissolved Oxygen: 10.91 mg/l
 Dissolved Oxygen Saturation: 133.7 %
 Specific Conductance: 276.6 uS/cm
 Velocity: 12.192 cm/s
 pH: 8.79
 Wetted Width: 17 m
 Bankfull Width: 50 m
 Depth: 42 cm

Water Chemistry - 8/8/2016

Nitrate+nitrite As N	0.01 mg/l	Total Phosphorus	12 ug/l
Total Kjeldahl Nitrogen	0.4 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	5.7 mg/l	Total Dissolved Solids	180 mg/l
Orthophosphate As Phosphorus	2 ug/l		

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Hardwood	Open	Rolling	
Urban			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Urban Runoff	Below Road Crossing	Boulder	10 %
	Below Urban NPS	Gravel	30 %
		Rubble/Cobble	40 %
		Sand	20 %

Landcover Summary - 2004 Data

Total Area (ac)	121748	High Int. Dev. %	1.0	Water %	0.4	Non-vegetated %	0.2
		Med Int. Dev. %	1.1	Wetland %	8.2	Tilled Agriculture %	9.6
		Low Int. Dev. %	4.5	Upland Woody %	66.2	Grassland %	7.2
		Development %	6.6	Natural %	74.5	Human Altered %	25.0
						Impervious %	4.3

Sample Comments

VERY SHALLOW.



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Station Number: S-829

Waterbody: Kenduskeag Stream - Station 829

Town: Bangor

Log Number: 2473

Subsample Factor: X1

Replicates: 3

Calculated: 4/5/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002	6.00	6.00		--	1.3	1.3
<i>Helobdella</i>	08030101005	0.33	0.33		--	0.1	0.1
<i>Gammarus</i>	09010201003	1.67	1.67	4	--	0.4	0.4
<i>Hyalella</i>	09010203006	2.33	2.33	8	CG	0.5	0.5
<i>Acroneuria</i>	09020209042		0.67	0	PR		0.1
<i>Acroneuria arenosa</i>	09020209042122	0.67			--	0.1	
<i>Argia</i>	09020309048	1.67	1.67	7	PR	0.4	0.4
<i>Acerpenna</i>	09020401007	0.67	0.67	5	CG	0.1	0.1
<i>Plauditus</i>	09020401012	0.67	0.67		CG	0.1	0.1
<i>Iswaeon</i>	09020401015		0.33		--		0.1
<i>Iswaeon anoka</i>	09020401015001	0.33			--	0.1	
Heptageniidae	09020402	0.33	0.33		--	0.1	0.1
<i>Stenacron</i>	09020402014	0.33	0.33	7	SC	0.1	0.1
<i>Tricorythodes</i>	09020411038	6.67	6.67	4	CG	1.4	1.4
Polycentropodidae	09020603				--		
<i>Neureclipsis</i>	09020603008	2.00	2.00	7	CF	0.4	0.4
<i>Polycentropus</i>	09020603010	2.00	2.00	6	PR	0.4	0.4
<i>Cheumatopsyche</i>	09020604015	25.67	25.67	5	CF	5.5	5.5
<i>Hydropsyche</i>	09020604016	0.67	9.67	4	CF	0.1	2.1
<i>Hydropsyche bronta</i>	09020604016029	2.67			--	0.6	
<i>Hydropsyche morosa</i>	09020604016030	2.00			--	0.4	
<i>Hydropsyche scalaris species group</i>	09020604016048	4.33			--	0.9	
<i>Hydroptila</i>	09020607026	6.33	6.33	6	P	1.4	1.4
<i>Oxyethira</i>	09020607028	0.33	0.33	3	P	0.1	0.1
<i>Micrasema</i>	09020609044	2.33	2.33	2	SH	0.5	0.5
<i>Lepidostoma</i>	09020611064	0.67	0.67	1	SH	0.1	0.1
<i>Psilotreta</i>	09020614068		2.67	0	SC		0.6
<i>Psilotreta labida</i>	09020614068133	2.67			--	0.6	
<i>Helicopsyche</i>	09020616070	21.00	21.00	3	SC	4.5	4.5
Leptoceridae	09020618				--		
<i>Ceraclea</i>	09020618072	0.33	0.33	3	CG	0.1	0.1
<i>Mystacides</i>	09020618075		0.33	4	CG		0.1
<i>Mystacides sepulchralis</i>	09020618075147	0.33			--	0.1	
<i>Oecetis</i>	09020618078	3.33	10.00	8	PR	0.7	2.1
<i>Oecetis avara</i>	09020618078153	4.33			--	0.9	
<i>Oecetis persimilis</i>	09020618078157	2.33			--	0.5	
<i>Ablabesmyia</i>	09021011001	6.00	6.00	8	PR	1.3	1.3



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		Actual	Adjusted			Actual	Adjusted
<i>Nilotanytus</i>	09021011012	1.00	1.00	6	PR	0.2	0.2
<i>Pentaneura</i>	09021011014	2.00	2.00	6	PR	0.4	0.4
<i>Thienemannimyia</i>	09021011020		22.00	3	PR		4.7
<i>Thienemannimyia group</i>	09021011020041	22.00			--	4.7	
<i>Potthastia</i>	09021011026		0.67	2	CG		0.1
<i>Potthastia gaedii</i>	09021011026045	0.67			--	0.1	
<i>Cricotopus</i>	09021011037	60.33	60.33	7	SH	12.9	12.9
<i>Orthocladius</i>	09021011050	17.33	17.33	6	CG	3.7	3.7
<i>Rheotanytarsus</i>	09021011072		2.67	6	CF		0.6
<i>Rheotanytarsus exiguus group</i>	09021011072127	2.67			CF	0.6	
<i>Tanytarsus</i>	09021011076	15.33	15.33	6	CF	3.3	3.3
<i>Dicrotendipes</i>	09021011085	3.33	3.33	8	CG	0.7	0.7
<i>Microtendipes</i>	09021011094		6.00	6	CF		1.3
<i>Microtendipes pedellus group</i>	09021011094166	2.00			--	0.4	
<i>Microtendipes rydalensis group</i>	09021011094168	4.00			--	0.9	
<i>Phaenopsectra</i>	09021011101	1.33	1.33	7	SC	0.3	0.3
<i>Polypedilum</i>	09021011102		36.67	6	SH		7.9
<i>Polypedilum flavum</i>	09021011102182	22.00			--	4.7	
<i>Polypedilum halterale group</i>	09021011102193	14.67			--	3.1	
<i>Dubiraphia</i>	09021113064	7.33	7.33	6	--	1.6	1.6
<i>Microcyloopus</i>	09021113066		17.67	3	--		3.8
<i>Microcyloopus pusillus</i>	09021113066041	17.67			--	3.8	
<i>Optioservus</i>	09021113067	2.67	2.67	3	SC	0.6	0.6
<i>Promoresia</i>	09021113069		3.00		--		0.6
<i>Promoresia elegans</i>	09021113069051	3.00			--	0.6	
<i>Stenelmis</i>	09021113070	5.00	30.67	5	SC	1.1	6.6
<i>Stenelmis crenata</i>	09021113070055	25.67			--	5.5	
<i>Amnicola</i>	10010104013		125.67		SC		26.9
<i>Amnicola limosus</i>	10010104013018	125.67			--	26.9	
Sphaeriidae	10020201	0.33	0.33		CF	0.1	0.1