



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

Station Information

Station Number: S-312	River Basin: Penobscot
Waterbody: Birch Stream - Station 312	HUC8 Name: Lower Penobscot
Town: Bangor	Latitude: 44 49 25.43 N
Directions: DOWNSTREAM OF OHIO STREET CROSSING	Longitude: 68 48 27.7 W
	Stream Order: 1

Sample Information

Log Number: 2469	Type of Sample: ROCK BAG	Date Deployed: 7/11/2016
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/8/2016

Classification Attainment

Statutory Class: B	Final Determination: C	Date: 4/7/2017
Model Result with $P \geq 0.6$: C	Reason for Determination: Model	
Date Last Calculated: 4/4/2017	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.01	Class A, B, or C	0.99
Class B	0.05	Non-Attainment	0.01
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.00	Class A	0.00
Class C or Non-Attainment	1.00	Class B or C or Non-Attainment	1.00

Model Variables

01 Total Mean Abundance	635.00	18 Relative Abundance Ephemeroptera	0.03
02 Generic Richness	49.00	19 EPT Generic Richness	8.00
03 Plecoptera Mean Abundance	0.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	14.33
04 Ephemeroptera Mean Abundance	20.33	23 Relative Generic Richness- Plecoptera	0.00
05 Shannon-Wiener Generic Diversity	2.89	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	69.00
06 Hilsenhoff Biotic Index	4.77	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.00
07 Relative Abundance - Chironomidae	0.30	28 EP Generic Richness/14	0.14
08 Relative Generic Richness Diptera	0.51	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	0.67		
11 <i>Cheumatopsyche</i> Abundance	0.67		
12 EPT Generic Richness/ Diptera Generic Richness	0.32		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	60.00		
17 Chironomini Abundance (Family Functional Group)	2.67		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Gyraulus</i>	50.39
2	<i>Tanytarsus</i>	10.34
3	<i>Thienemannimyia</i>	9.45
4	<i>Simulium</i>	4.09
5	<i>Hydroptila</i>	3.78



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: ECOANALYSTS IDAHO

Waterbody Information - Deployment

Temperature:	17 deg C
Dissolved Oxygen:	10.2 mg/l
Dissolved Oxygen Saturation:	105.4 %
Specific Conductance:	370.9 uS/cm
Velocity:	39.6 cm/s
pH:	8.12
Wetted Width:	9 m
Bankfull Width:	11 m
Depth:	36 cm

Waterbody Information - Retrieval

Temperature:	19.7 deg C
Dissolved Oxygen:	9.3 mg/l
Dissolved Oxygen Saturation:	102.1 %
Specific Conductance:	490 uS/cm
Velocity:	3.048 cm/s
pH:	7.97
Wetted Width:	6 m
Bankfull Width:	11 m
Depth:	28 cm

Water Chemistry - 8/8/2016

Nitrate+nitrite As N	0.25 mg/l	Total Phosphorus	18 ug/l
Total Kjeldahl Nitrogen	0.3 mg/l	Total Suspended Solids	1 mg/l
Dissolved Organic Carbon	4.7 mg/l	Total Dissolved Solids	280 mg/l
Orthophosphate As Phosphorus	3 ug/l		

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Hardwood	Partly Open	Rolling
Urban		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Altered Habitat	Below Point Source	Bedrock 50 %
Altered Hydrology	Below Road Crossing	Boulder 30 %
Urban Runoff	Below Urban NPS	Gravel 5 %
		Rubble/Cobble 15 %

Landcover Summary - 2004 Data

Total Area (ac)	1880	High Int. Dev. %	31.2	Water %	0.0	Non-vegetated %	0.1
		Med Int. Dev. %	10.4	Wetland %	0.1	Tilled Agriculture %	0.1
		Low Int. Dev. %	11.3	Upland Woody %	12.3	Grassland %	0.3
		Development %	52.8	Natural %	12.4	Human Altered %	87.6
						Impervious %	45.9

Sample Comments

7/11/2016: RAINED NIGHT BEFORE; ERODING BANK DOWNSTREAM OF BAGS.
8/8/2016: WATER VERY LOW.



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Aquatic Life Taxonomic Inventory Report

Station Number: S-312

Waterbody: Birch Stream - Station 312

Town: Bangor

Log Number: 2469

Subsample Factor: X1

Replicates: 3

Calculated: 4/4/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Lumbricidae	08020205	0.67	0.67		--	0.1	0.1
<i>Erpobdella</i>	08030203002	23.67	23.67		--	3.7	3.7
<i>Hyaella</i>	09010203006	1.00	1.00	8	CG	0.2	0.2
<i>Aeshna</i>	09020301001	0.33	0.33	5	PR	0.1	0.1
<i>Boyeria</i>	09020301004		0.33	2	PR		0.1
<i>Boyeria vinosa</i>	09020301004012	0.33			--	0.1	
Coenagrionidae	09020309	1.00	1.00		--	0.2	0.2
<i>Argia</i>	09020309048	0.33	0.33	7	PR	0.1	0.1
<i>Baetis</i>	09020401001		19.00	4	CG		3.0
<i>Baetis flavistriga</i>	09020401001004	16.33			--	2.6	
<i>Baetis intercalaris</i>	09020401001008	2.67			--	0.4	
<i>Acerpenna</i>	09020401007		1.33	5	CG		0.2
<i>Acerpenna pygmaea</i>	09020401007011	1.33			--	0.2	
<i>Polycentropus</i>	09020603010	0.33	0.33	6	PR	0.1	0.1
<i>Cheumatopsyche</i>	09020604015	0.67	0.67	5	CF	0.1	0.1
<i>Hydropsyche</i>	09020604016	0.67	0.67	4	CF	0.1	0.1
<i>Hydroptila</i>	09020607026	24.00	24.00	6	P	3.8	3.8
<i>Oxyethira</i>	09020607028	0.67	0.67	3	P	0.1	0.1
<i>Oecetis</i>	09020618078	0.67	0.67	8	PR	0.1	0.1
<i>Antocha</i>	09021001004	1.67	1.67	3	CG	0.3	0.3
<i>Erioptera</i>	09021001006	0.33	0.33	7	CG	0.1	0.1
<i>Limonia</i>	09021001010	0.33	0.33	6	SH	0.1	0.1
<i>Thienemannimyia</i>	09021011020		60.00	3	PR		9.4
<i>Thienemannimyia group</i>	09021011020041	60.00			--	9.4	
<i>Pagastia</i>	09021011025	8.33	8.33	1	--	1.3	1.3
<i>Corynoneura</i>	09021011036	1.00	1.00	7	CG	0.2	0.2
<i>Cricotopus</i>	09021011037		2.67	7	SH		0.4
<i>Cricotopus bicinctus</i>	09021011037057	2.33			--	0.4	
<i>Cricotopus trifascia</i>	09021011037070	0.33			--	0.1	
<i>Eukiefferiella</i>	09021011041	0.33	0.67	8	CG	0.1	0.1
<i>Eukiefferiella claripennis group</i>	09021011041075	0.33			--	0.1	
<i>Nanocladius</i>	09021011049	1.67	1.67	3	CG	0.3	0.3
<i>Parakiefferiella</i>	09021011052	0.33	0.33		CG	0.1	0.1
<i>Parametriocnemus</i>	09021011053	1.33	1.33	5	CG	0.2	0.2
<i>Synorthocladius</i>	09021011061	6.00	6.00	2	CG	0.9	0.9
<i>Thienemanniella</i>	09021011062	2.00	2.00	6	CG	0.3	0.3
<i>Tvetenia</i>	09021011065		3.00	5	CG		0.5



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<i>Tvetenia bavarica group</i>	09021011065111	3.00			--	0.5	
<i>Micropsectra</i>	09021011070	13.00	13.00	7	CG	2.0	2.0
<i>Rheotanytarsus</i>	09021011072		23.00	6	CF		3.6
<i>Rheotanytarsus exiguus group</i>	09021011072127	23.00			CF	3.6	
<i>Tanytarsus</i>	09021011076	65.67	65.67	6	CF	10.3	10.3
<i>Cladopelma</i>	09021011081	0.33	0.33	9	CG	0.1	0.1
<i>Cryptochironomus</i>	09021011082	0.33	0.33	8	PR	0.1	0.1
<i>Dicrotendipes</i>	09021011085	0.33	1.33	8	CG	0.1	0.2
<i>Dicrotendipes fumidus</i>	09021011085150	1.00			--	0.2	
<i>Microtendipes</i>	09021011094		0.67	6	CF		0.1
<i>Microtendipes pedellus group</i>	09021011094166	0.67			--	0.1	
<i>Macropelopia</i>	09021011111	0.33	0.33		P	0.1	0.1
<i>Simulium</i>	09021012047	26.00	26.00	4	CF	4.1	4.1
Empididae	09021016			6	--		
<i>Hemerodromia</i>	09021016057	1.67	1.67	3	PR	0.3	0.3
Sciomyzidae	09021020	0.33	0.33		--	0.1	0.1
<i>Anacaena</i>	09021105041	0.33	0.33		--	0.1	0.1
<i>Dubiraphia</i>	09021113064	2.33	2.33	6	--	0.4	0.4
<i>Lebertia</i>	09030105001	3.33	3.33		--	0.5	0.5
<i>Sperchon</i>	09030107001	0.33	0.33		--	0.1	0.1
Lymnaeidae	10010201	0.33	0.33		--	0.1	0.1
<i>Stagnicola</i>	10010201025	0.33	0.33		--	0.1	0.1
<i>Physa</i>	10010202027	10.67	10.67		SC	1.7	1.7
<i>Gyraulus</i>	10010203029	320.00	320.00		SC	50.4	50.4
<i>Ferrissia</i>	10010204035	0.67	0.67		SC	0.1	0.1