



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

Station Information

Station Number: S-308	River Basin: Penobscot
Waterbody: Allen Stream - Station 308	HUC8 Name: Lower Penobscot
Town: Exeter	Latitude: 44 59 7.5 N
Directions: ABOVE RT. 11/43 CROSSING; 0.35 KM BELOW DOWNING RD.	Longitude: 69 5 16.64 W
	Stream Order: 3

Sample Information

Log Number: 2497	Type of Sample: ROCK BAG	Date Deployed: 7/25/2016
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/22/2016

Classification Attainment

Statutory Class: B	Final Determination: B	Date: 5/10/2017
Model Result with $P \geq 0.6$: B	Reason for Determination: Best Professional Judgement	
Date Last Calculated: 5/9/2017	Comments: Indeterminate for Class A (.45) not raised to Class A based on Dominant Taxa present.	

Model Probabilities

	<u>First Stage Model</u>			<u>C or Better Model</u>	
Class A	0.42	Class C	0.10	Class A, B, or C	1.00
Class B	0.49	NA	0.00	Non-Attainment	0.00
	<u>B or Better Model</u>			<u>A Model</u>	
Class A or B			0.99	Class A	0.45
Class C or Non-Attainment			0.01	Class B or C or Non-Attainment	0.55

Model Variables

01 Total Mean Abundance	135.00	18 Relative Abundance Ephemeroptera	0.27
02 Generic Richness	46.00	19 EPT Generic Richness	21.00
03 Plecoptera Mean Abundance	1.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.67
04 Ephemeroptera Mean Abundance	36.00	23 Relative Generic Richness- Plecoptera	0.04
05 Shannon-Wiener Generic Diversity	4.11	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	18.54
06 Hilsenhoff Biotic Index	5.33	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	17.33
07 Relative Abundance - Chironomidae	0.45	28 EP Generic Richness/14	0.86
08 Relative Generic Richness Diptera	0.28	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	0.00		
11 <i>Cheumatopsyche</i> Abundance	0.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.62		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	1.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	5.73		
17 Chironomini Abundance (Family Functional Group)	36.40		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Microtendipes</i>	25.46
2	<i>Maccaffertium</i>	12.10
3	<i>Tanytarsus</i>	9.24
4	<i>Polycentropus</i>	9.14
5	<i>Stenacron</i>	6.42



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

Station Number: S-308 Town: Exeter Date Deployed: 7/25/2016
Log Number: 2497 Waterbody: Allen Stream - Station 308 Date Retrieved: 8/22/2016

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 21.3 deg C
Dissolved Oxygen: 8.59 mg/l
Dissolved Oxygen Saturation: 97.5 %
Specific Conductance: 215.5 uS/cm
Velocity: 3.048 cm/s
pH: 7.75
Wetted Width: 5.2 m
Bankfull Width: 6.6 m
Depth: 35 cm

Waterbody Information - Retrieval

Temperature: 18.4 deg C
Dissolved Oxygen: 9.17 mg/l
Dissolved Oxygen Saturation: 98.6 %
Specific Conductance: 192.88 uS/cm
Velocity: 7.88
Wetted Width: 5 m
Bankfull Width: 6.6 m
Depth: 30 cm

Water Chemistry - 8/22/2016

Nitrate+nitrite As N	0.14 mg/l	Total Phosphorus	42 ug/l
Total Kjeldahl Nitrogen	0.4 mg/l	Total Suspended Solids	17 mg/l
Dissolved Organic Carbon	4.6 mg/l	Dissolved Organic Carbon	4.6 mg/l
Total Dissolved Solids	120 mg/l	Orthophosphate As Phosphorus	2 ug/l

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Cultivated	Partly Open	Rolling	
Pasture			
Upland Conifer			
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Agricultural Runoff	Above Road Crossing	Bedrock	5 %
Nutrients	Below Agriculture NPS	Boulder	10 %
Pesticides		Gravel	25 %
		Rubble/Cobble	60 %

Landcover Summary - 2004 Data

Total Area (ac)	6853	High Int. Dev. %	0.1	Water %	0.0	Non-vegetated %	0.0
		Med Int. Dev. %	0.4	Wetland %	4.5	Tilled Agriculture %	10.7
		Low Int. Dev. %	4.1	Upland Woody %	76.8	Grassland %	3.4
		Development %	4.5	Natural %	81.6	Human Altered %	18.4
						Impervious %	2.6

Sample Comments

7/25/2016: SILTY; MANY FISH PRESENT.
8/22/2016: FLOW VISIBLE; 1 IN. OF RAIN THE MORNING BEFORE; WATER LOOKS CLOUDY;
LANDOWNER AMICABLE AND INTERESTED IN RESULTS; FISH PRESENT.



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-308

Waterbody: Allen Stream - Station 308

Town: Exeter

Log Number: 2497

Subsample Factor: X1

Replicates: 3

Calculated: 5/9/2017

Taxon	Maine Taxonomic Code	Count		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		(Mean of Samplers)				Actual	Adjusted
		Actual	Adjusted				
<i>Orconectes</i>	09010301008	0.33	0.33		CG	0.2	0.2
<i>Paracapnia</i>	09020203018	0.33	0.33	1	SH	0.2	0.2
<i>Acroneuria</i>	09020209042		1.00	0	PR		0.7
<i>Acroneuria arenosa</i>	09020209042122	1.00			--	0.7	
<i>Boyeria</i>	09020301004		1.00	2	PR		0.7
<i>Boyeria vinosa</i>	09020301004012	1.00			--	0.7	
Gomphidae	09020302	0.33	0.33		--	0.2	0.2
<i>Calopteryx</i>	09020307043	0.67	0.67	5	PR	0.5	0.5
<i>Argia</i>	09020309048	0.33	0.33	7	PR	0.2	0.2
<i>Baetis</i>	09020401001		0.67	4	CG		0.5
<i>Baetis flavistriga</i>	09020401001004	0.67			--	0.5	
<i>Acerpenna</i>	09020401007	0.33	1.00	5	CG	0.2	0.7
<i>Acerpenna macdunnoughi</i>	09020401007001	0.33			--	0.2	
<i>Acerpenna pygmaea</i>	09020401007011	0.33			--	0.2	
<i>Procloeon</i>	09020401010	4.33	4.33		CG	3.2	3.2
<i>Neocloeon (Centroptilum)</i>	09020401017	0.33	0.33	2	CG	0.2	0.2
<i>Leucrocuta</i>	09020402011	0.67	0.67	1	SC	0.5	0.5
<i>Stenacron</i>	09020402014		8.67	7	SC		6.4
<i>Stenacron interpunctatum</i>	09020402014045	8.67			--	6.4	
<i>Maccaffertium</i>	09020402015	8.67	16.33	4	SC	6.4	12.1
<i>Maccaffertium vicarium</i>	09020402015055	7.67			--	5.7	
<i>Paraleptophlebia</i>	09020406026	3.33	3.33	1	CG	2.5	2.5
Ephemeridae	09020407	0.33	0.33		--	0.2	0.2
<i>Ephemerella</i>	09020410035		0.33	1	CG		0.2
<i>Ephemerella subvaria</i>	09020410035111	0.33			--	0.2	
<i>Nyctiophylax</i>	09020603009	1.33	1.33	5	PR	1.0	1.0
<i>Polycentropus</i>	09020603010	12.33	12.33	6	PR	9.1	9.1
<i>Pycnopsyche</i>	09020610049	0.33	0.33	4	SH	0.2	0.2
<i>Lepidostoma</i>	09020611064	0.33	0.33	1	SH	0.2	0.2
<i>Molanna</i>	09020615069	0.33	0.33	6	SC	0.2	0.2
<i>Helicopsyche</i>	09020616070	2.67	2.67	3	SC	2.0	2.0
Leptoceridae	09020618	2.00			--	1.5	
<i>Mystacides</i>	09020618075	0.33	0.83	4	CG	0.2	0.6
<i>Oecetis</i>	09020618078	1.00	2.50	8	PR	0.7	1.9
<i>Apatania</i>	09020619061	0.67	0.67		SC	0.5	0.5
<i>Nigronia</i>	09020701003		1.33	0	PR		1.0
<i>Nigronia serricornis</i>	09020701003003	1.33			--	1.0	



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-308

Waterbody: Allen Stream - Station 308

Town: Exeter

Log Number: 2497

Subsample Factor: X1

Replicates: 3

Calculated: 5/9/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Ceratopogonidae	09021010	0.33	0.33		--	0.2	0.2
Chironomidae	09021011	0.67			--	0.5	
<i>Ablabesmyia</i>	09021011001	1.33	1.35	8	PR	1.0	1.0
<i>Labrundinia</i>	09021011008	2.00	2.02	7	PR	1.5	1.5
<i>Thienemannimyia</i>	09021011020		2.36	3	PR		1.7
<i>Thienemannimyia group</i>	09021011020041	2.33			--	1.7	
<i>Cricotopus</i>	09021011037		4.72	7	SH		3.5
<i>Cricotopus bicinctus</i>	09021011037057	4.33			--	3.2	
<i>Cricotopus tremulus</i>	09021011037068	0.33			--	0.2	
<i>Rheotanytarsus</i>	09021011072		1.35	6	CF		1.0
<i>Rheotanytarsus exiguus group</i>	09021011072127	0.67			CF	0.5	
<i>Rheotanytarsus pellucidus</i>	09021011072128	0.67			CF	0.5	
<i>Tanytarsus</i>	09021011076	12.33	12.47	6	CF	9.1	9.2
<i>Zavrelia</i>	09021011077	0.33	0.34		CG	0.2	0.2
<i>Dicrotendipes</i>	09021011085	0.67	0.67	8	CG	0.5	0.5
<i>Microtendipes</i>	09021011094		34.38	6	CF		25.5
<i>Microtendipes pedellus group</i>	09021011094166	2.00			--	1.5	
<i>Microtendipes rydalensis group</i>	09021011094168	32.00			--	23.7	
<i>Phaenopsectra</i>	09021011101	0.67	0.67	7	SC	0.5	0.5
<i>Polypedilum</i>	09021011102		0.67	6	SH		0.5
<i>Polypedilum illinoense group</i>	09021011102185	0.33			--	0.2	
<i>Polypedilum halterale group</i>	09021011102193	0.33			--	0.2	
<i>Hemerodromia</i>	09021016057	1.00	1.00	3	PR	0.7	0.7
<i>Psephenus</i>	09021108058		1.33	4	SC		1.0
<i>Psephenus herricki</i>	09021108058028	1.33			--	1.0	
<i>Dubiraphia</i>	09021113064	4.67	4.67	6	--	3.5	3.5
<i>Macronychus</i>	09021113065		1.33	4	--		1.0
<i>Macronychus glabratus</i>	09021113065040	1.33			--	1.0	
<i>Optioservus</i>	09021113067	1.00	1.00	3	SC	0.7	0.7
<i>Stenelmis</i>	09021113070	0.67	1.00	5	SC	0.5	0.7
<i>Stenelmis crenata</i>	09021113070055	0.33			--	0.2	
<i>Ferrissia</i>	10010204035	0.67	0.67		SC	0.5	0.5