



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

Station Information

Station Number:	S-1098	River Basin:	Penobscot
Waterbody:	Passadumkeag River - Station 1098	HUC8 Name:	Lower Penobscot
Town:	Grand Falls Twp	Latitude:	45 9 57.56 N
Directions:	188 EAST, CONTINUE STRAIGHT AT SAPONAC TO WHERE RD CROSSES STREAM, PARK JUST EAST SIDE OF BRIDGE. 45M ABOVE BRIDGE.	Longitude:	68 17 33.61 W
		Stream Order:	3

Sample Information

Log Number:	2489	Type of Sample:	ROCK BAG	Date Deployed:	7/19/2016
Subsample Factor:	X4	Replicates:	3	Date Retrieved:	8/16/2016

Classification Attainment

Statutory Class:	AA	Final Determination:	A	Date:	5/12/2017
Model Result with $P \geq 0.6$:	A	Reason for Determination:	Model		
Date Last Calculated:	5/11/2017	Comments:			

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.76	Class A, B, or C	1.00
Class B	0.23	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	1.00
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.00

Model Variables

01 Total Mean Abundance	510.67	18 Relative Abundance Ephemeroptera	0.32
02 Generic Richness	37.00	19 EPT Generic Richness	19.00
03 Plecoptera Mean Abundance	14.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	161.33	23 Relative Generic Richness- Plecoptera	0.05
05 Shannon-Wiener Generic Diversity	4.14	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	19.57
06 Hilsenhoff Biotic Index	3.29	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	33.07
07 Relative Abundance - Chironomidae	0.16	28 EP Generic Richness/14	0.86
08 Relative Generic Richness Diptera	0.32	30 Presence of Class A Indicator Taxa/7	0.57
09 <i>Hydropsyche</i> Abundance	109.27		
11 <i>Cheumatopsyche</i> Abundance	1.37		
12 EPT Generic Richness/ Diptera Generic Richness	1.58		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	14.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	0.00		
17 Chironomini Abundance (Family Functional Group)	11.20		

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	21.40
2	<i>Chimarra</i>	14.10
3	<i>Heterocloeon</i>	9.21
4	<i>Baetis</i>	6.42
5	<i>Rheotanytarsus</i>	6.03



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature:	24.2 deg C
Dissolved Oxygen:	9.18 mg/l
Dissolved Oxygen Saturation:	110.2 %
Specific Conductance:	31.2 uS/cm
Velocity:	51.8 cm/s
pH:	7.27
Wetted Width:	35 m
Bankfull Width:	35 m
Depth:	42 cm

Waterbody Information - Retrieval

Temperature:	22.7 deg C
Dissolved Oxygen:	9.77 mg/l
Dissolved Oxygen Saturation:	113.1 %
Specific Conductance:	36.8 uS/cm
Velocity:	36.6 cm/s
pH:	7.39
Wetted Width:	32 m
Bankfull Width:	35 m
Depth:	27 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Rolling
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Wetland Headwaters	Above Road Crossing	Boulder 60 %
		Rubble/Cobble 40 %

Landcover Summary - 2004 Data

Sample Comments

7/19/16: EBONY JEWELWING DAMSELFLY.

8/16/16: FROG PRESENT.



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Subsample Factor: X4

Replicates: 3

Calculated: 5/11/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Pristina</i>	08020202004		1.33		--		0.3
<i>Pristina jenkiniae</i>	08020202004010	1.33			--	0.3	
Perlidae	09020209	1.33			--	0.3	
<i>Acroneuria</i>	09020209042	5.33	13.20	0	PR	1.0	2.6
<i>Acroneuria abnormis</i>	09020209042121	1.33		0	PR	0.3	
<i>Acroneuria internata</i>	09020209042124	2.67			--	0.5	
<i>Acroneuria lycorias</i>	09020209042125	2.67			--	0.5	
<i>Paragnetina</i>	09020209049		1.47	1	PR		0.3
<i>Paragnetina media</i>	09020209049151	1.33			--	0.3	
<i>Boyeria</i>	09020301004		13.33	2	PR		2.6
<i>Boyeria vinosa</i>	09020301004012	13.33			--	2.6	
<i>Hetaerina</i>	09020307044		1.33	6	PR		0.3
<i>Hetaerina americana</i>	09020307044001	1.33			--	0.3	
Baetidae	09020401	5.33			--	1.0	
<i>Baetis</i>	09020401001		32.78	4	CG		6.4
<i>Baetis flavistriga</i>	09020401001004	6.67			--	1.3	
<i>Baetis pluto</i>	09020401001009	24.00			--	4.7	
<i>Heterocloeon</i>	09020401005	41.33	47.03	2	SC	8.1	9.2
<i>Heterocloeon curiosum</i>	09020401005020	2.67			--	0.5	
<i>Acerpenna</i>	09020401007		2.85	5	CG		0.6
<i>Acerpenna pygmaea</i>	09020401007011	2.67			--	0.5	
Heptageniidae	09020402	2.67			--	0.5	
<i>Epeorus</i>	09020402009	4.00	14.19	0	SC	0.8	2.8
<i>Epeorus vitreus</i>	09020402009033	9.33			--	1.8	
<i>Heptagenia</i>	09020402010	1.33	1.42	2	SC	0.3	0.3
<i>Leucrocota</i>	09020402011	8.00	8.52	1	SC	1.6	1.7
<i>Maccaffertium</i>	09020402015	14.67	19.87	4	SC	2.9	3.9
<i>Maccaffertium luteum</i>	09020402015049	4.00			--	0.8	
<i>Isonychia</i>	09020404018	4.00	4.00	2	CF	0.8	0.8
Ephemerellidae	09020410	1.33			--	0.3	
<i>Drunella</i>	09020410034		15.33	0	SC		3.0
<i>Drunella tuberculata</i>	09020410034101	14.67			--	2.9	
<i>Serratella</i>	09020410037		15.33	2	CG		3.0
<i>Serratella deficiens</i> (<i>Teloganopsis deficiens</i>)	09020410037121	1.33			--	0.3	
<i>Serratella serratoides</i>	09020410037124	13.33			--	2.6	
<i>Chimarra</i>	09020601003	6.67	72.00	2	CF	1.3	14.1
<i>Chimarra obscura</i>	09020601003003	62.67			--	12.3	



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<i>Chimarra socia</i>	09020601003004	2.67			--	0.5	
<i>Neureclipsis</i>	09020603008	1.33	1.33	7	CF	0.3	0.3
Hydropsychidae	09020604	2.67			--	0.5	
<i>Cheumatopsyche</i>	09020604015	1.33	1.37	5	CF	0.3	0.3
<i>Hydropsyche</i>	09020604016	33.33	109.27	4	CF	6.5	21.4
<i>Hydropsyche morosa</i>	09020604016030	4.00			--	0.8	
<i>Hydropsyche sparna</i>	09020604016032	69.33			--	13.6	
<i>Macrostemum</i>	09020604018		1.37	3	CF		0.3
<i>Macrostemum zebratum</i>	09020604018054	1.33			--	0.3	
Hydroptilidae	09020607				--		
<i>Brachycentrus</i>	09020609043		4.00	0	CF		0.8
<i>Brachycentrus appalachia</i>	09020609043096	4.00			--	0.8	
<i>Lepidostoma</i>	09020611064	1.33	1.33	1	SH	0.3	0.3
<i>Tipula</i>	09021001002	1.33	1.33	4	SH	0.3	0.3
Chironomidae	09021011	4.00			--	0.8	
<i>Cricotopus</i>	09021011037		18.20	7	SH		3.6
<i>Cricotopus bicinctus</i>	09021011037057	6.67			--	1.3	
<i>Cricotopus vierriensis</i>	09021011037071	10.67			--	2.1	
<i>Nanocladius</i>	09021011049		2.80	3	CG		0.5
<i>Nanocladius downesi</i>	09021011049092	2.67			--	0.5	
<i>Orthocladius</i>	09021011050		7.00	6	CG		1.4
<i>Orthocladius carlatus</i>	09021011050093	6.67			--	1.3	
<i>Parametriocnemus</i>	09021011053	1.33	1.40	5	CG	0.3	0.3
<i>Rheocricotopus</i>	09021011057		4.20	6	CG		0.8
<i>Rheocricotopus robacki</i>	09021011057105	4.00			--	0.8	
<i>Tvetenia</i>	09021011065		8.40	5	CG		1.6
<i>Tvetenia vitracies</i>	09021011065113	4.00			--	0.8	
<i>Tvetenia paucunca</i>	09021011065114	4.00			--	0.8	
<i>Rheotanytarsus</i>	09021011072		30.80	6	CF		6.0
<i>Rheotanytarsus exiguus group</i>	09021011072127	5.33			CF	1.0	
<i>Rheotanytarsus pellucidus</i>	09021011072128	24.00			CF	4.7	
<i>Polypedilum</i>	09021011102		11.20	6	SH		2.2
<i>Polypedilum flavum</i>	09021011102182	10.67			--	2.1	
<i>Simulium</i>	09021012047		13.33	4	CF		2.6
<i>Simulium fibrinflatum</i>	09021012047059	2.67			--	0.5	
<i>Simulium jenningsi</i>	09021012047060	2.67			--	0.5	
<i>Simulium jenningsi species group</i>	09021012047070	8.00			CF	1.6	
<i>Atherix</i>	09021015055	2.67	2.67	2	PR	0.5	0.5



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<i>Hemerodromia</i>	09021016057	1.33	1.33	3	PR	0.3	0.3
<i>Promoresia</i>	09021113069		13.33		--		2.6
<i>Promoresia elegans</i>	09021113069051	9.33			--	1.8	
<i>Promoresia tardella</i>	09021113069052	4.00			--	0.8	
<i>Stenelmis</i>	09021113070	1.33	8.00	5	SC	0.3	1.6
<i>Stenelmis concinna</i>	09021113070054	5.33			--	1.0	
<i>Stenelmis crenata</i>	09021113070055	1.33			--	0.3	
Basommatophora	100102	1.33	1.33		--	0.3	0.3
<i>Ferrissia</i>	10010204035		2.67		SC		0.5
<i>Ferrissia rivularis</i>	10010204035066	2.67			--	0.5	