



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

Station Information

Station Number: S-799 River Basin: Saco
Waterbody: Royal River - Station 799 HUC8 Name: Presumpscot
Town: Gray Latitude: 43 53 26.7 N
Directions: 15M DOWNSTREAM OF DEPOT ROAD Longitude: 70 16 37.67 W
Stream Order: 4

Sample Information

Log Number: 2358 Type of Sample: ROCK BASKET Date Deployed: 7/14/2015
Subsample Factor: X4 Replicates: 3 Date Retrieved: 8/11/2015

Classification Attainment

Statutory Class: B Final Determination: C Date: 3/9/2016
Model Result with $P \geq 0.6$: C Reason for Determination: Model
Date Last Calculated: 3/9/2016 Comments:

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.01	Class A, B, or C	1.00
Class B	0.28	Non-Attainment	0.00
B or Better Model		A Model	
Class A or B	0.13	Class A	0.03
Class C or Non-Attainment	0.87	Class B or C or Non-Attainment	0.97

Model Variables

01 Total Mean Abundance	3016.00	18 Relative Abundance Ephemeroptera	0.12
02 Generic Richness	44.00	19 EPT Generic Richness	20.00
03 Plecoptera Mean Abundance	2.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	369.33	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	2.62	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	884.38
06 Hilsenhoff Biotic Index	4.42	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	98.67
07 Relative Abundance - Chironomidae	0.13	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.41	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	1345.16		
11 <i>Cheumatopsyche</i> Abundance	825.51		
12 EPT Generic Richness/ Diptera Generic Richness	1.11		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	2.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	5.35		
17 Chironomini Abundance (Family Functional Group)	61.55		

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	44.60
2	<i>Cheumatopsyche</i>	27.37
3	<i>Rheotanytarsus</i>	6.79
4	<i>Baetis</i>	3.90
5	<i>Maccaffertium</i>	3.18



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature:	20.5 deg C
Dissolved Oxygen:	8 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	192.2 uS/cm
Velocity:	36.6 cm/s
pH:	7.62
Wetted Width:	10 m
Bankfull Width:	14 m
Depth:	49 cm

Waterbody Information - Retrieval

Temperature:	18.3 deg C
Dissolved Oxygen:	8.61 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	216.7 uS/cm
Velocity:	61 cm/s
pH:	7.51
Wetted Width:	7.1 m
Bankfull Width:	7.1 m
Depth:	42 cm

Water Chemistry - 8/11/2015

Nitrate+nitrite As N	0.61 mg/l	Total Phosphorus	21 ug/l
Total Kjeldahl Nitrogen	0.2 mg/l	Total Suspended Solids	2.8 mg/l
Dissolved Organic Carbon	1.6 mg/l	Total Dissolved Solids	140 mg/l
Orthophosphate As Phosphorus	5 ug/l		

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Hardwood	Open	Flat
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
	Below Road Crossing	Boulder 60 %
		Rubble/Cobble 20 %
		Sand 20 %

Landcover Summary - 2004 Data

Total Area (ac)	39181	High Int. Dev. %	0.7	Water %	0.6	Non-vegetated %	0.3
		Med Int. Dev. %	1.1	Wetland %	8.0	Tilled Agriculture %	2.2
		Low Int. Dev. %	5.6	Upland Woody %	68.9	Grassland %	10.2
		Development %	7.5	Natural %	76.9	Human Altered %	22.5
						Impervious %	6.1

Sample Comments

8/11/2015: 91.7% DO.



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Subsample Factor: X4

Replicates: 3

Calculated: 3/9/2016

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Acroneuria</i>	09020209042		2.67	0	PR		0.1
<i>Acroneuria abnormis</i>	09020209042121	1.33		0	PR	0.0	
<i>Acroneuria internata</i>	09020209042124	1.33			--	0.0	
Calopterygidae	09020307	4.00	4.00		--	0.1	0.1
Baetidae	09020401	10.67			--	0.4	
<i>Baetis</i>	09020401001	10.67	117.49	4	CG	0.4	3.9
<i>Baetis flavistriga</i>	09020401001004	84.00			--	2.8	
<i>Baetis intercalaris</i>	09020401001008	5.33			--	0.2	
<i>Baetis pluto</i>	09020401001009	5.33			--	0.2	
<i>Baetis tricaudatus</i>	09020401001012	2.67			--	0.1	
<i>Acerpenna</i>	09020401007		4.35	5	CG		0.1
<i>Acerpenna pygmaea</i>	09020401007011	4.00			--	0.1	
<i>Procloeon</i>	09020401010	1.33	1.45		CG	0.0	0.0
<i>Iswaeon</i>	09020401015	6.67	8.70		--	0.2	0.3
<i>Iswaeon anoka</i>	09020401015001	1.33			--	0.0	
Heptageniidae	09020402	37.33	37.33		--	1.2	1.2
<i>Maccaffertium</i>	09020402015	78.67	96.00	4	SC	2.6	3.2
<i>Maccaffertium modestum</i>	09020402015051	17.33			--	0.6	
<i>Isonychia</i>	09020404018	21.33	21.33	2	CF	0.7	0.7
<i>Ephemerella</i>	09020410035	81.33	81.33	1	CG	2.7	2.7
<i>Serratella</i>	09020410037		1.33	2	CG		0.0
<i>Serratella serratoides</i>	09020410037124	1.33			--	0.0	
<i>Dolophilodes</i>	09020601001		1.33	0	CF		0.0
<i>Dolophilodes distinctus</i>	09020601001001	1.33			--	0.0	
<i>Chimarra</i>	09020601003	8.00	12.00	2	CF	0.3	0.4
<i>Chimarra obscura</i>	09020601003003	4.00			--	0.1	
Polycentropodidae	09020603	2.67			--	0.1	
<i>Neureclipsis</i>	09020603008	12.00	13.60	7	CF	0.4	0.5
<i>Nyctiophylax</i>	09020603009		9.07	5	PR		0.3
<i>Nyctiophylax celta</i>	09020603009012	8.00			--	0.3	
Hydropsychidae	09020604	221.33			--	7.3	
<i>Cheumatopsyche</i>	09020604015	741.33	825.51	5	CF	24.6	27.4
<i>Hydropsyche</i>	09020604016	698.67	1345.16	4	CF	23.2	44.6
<i>Hydropsyche bronta</i>	09020604016029	220.00			--	7.3	
<i>Hydropsyche sparna</i>	09020604016032	218.67			--	7.3	
<i>Hydropsyche depravata species group</i>	09020604016041	50.67			CF	1.7	
<i>Hydropsyche placoda</i>	09020604016059	20.00			--	0.7	



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		Actual	Adjusted			Actual	Adjusted
<i>Rhyacophila</i>	09020605019	14.67	14.67	2	PR	0.5	0.5
<i>Brachycentrus</i>	09020609043		2.67	0	CF		0.1
<i>Brachycentrus numerosus</i>	09020609043098	2.67			--	0.1	
<i>Micrasema</i>	09020609044		1.33	2	SH		0.0
<i>Micrasema rusticum group</i>	09020609044100	1.33			--	0.0	
<i>Oecetis</i>	09020618078		4.00	8	PR		0.1
<i>Oecetis persimilis</i>	09020618078157	4.00			--	0.1	
<i>Antocha</i>	09021001004	2.67	2.67	3	CG	0.1	0.1
Chironomidae	09021011	1.33			--	0.0	
<i>Rheopelopia</i>	09021011017		5.35		PR		0.2
<i>Rheopelopia acra group</i>	09021011017036	5.33			--	0.2	
<i>Pagastia</i>	09021011025		6.69	1	--		0.2
<i>Pagastia orthogonia</i>	09021011025001	6.67			--	0.2	
<i>Potthastia</i>	09021011026		1.34	2	CG		0.0
<i>Potthastia longimana</i>	09021011026046	1.33			--	0.0	
<i>Cricotopus</i>	09021011037	1.33	56.20	7	SH	0.0	1.9
<i>Cricotopus bicinctus</i>	09021011037057	54.67			--	1.8	
<i>Nanocladius</i>	09021011049		1.34	3	CG		0.0
<i>Nanocladius spinipennis</i>	09021011049090	1.33			--	0.0	
<i>Orthocladius</i>	09021011050		2.68	6	CG		0.1
<i>Orthocladius annectens</i>	09021011050092	1.33			--	0.0	
<i>Orthocladius lignicola</i>	09021011050100	1.33			--	0.0	
<i>Rheocricotopus</i>	09021011057		6.69	6	CG		0.2
<i>Rheocricotopus robacki</i>	09021011057105	6.67			--	0.2	
<i>Thienemanniella</i>	09021011062	4.00	6.69	6	CG	0.1	0.2
<i>Thienemanniella similis</i>	09021011062111	1.33			--	0.0	
<i>Thienemanniella boltoni</i>	09021011062113	1.33			--	0.0	
<i>Tvetenia</i>	09021011065		28.10	5	CG		0.9
<i>Tvetenia vitracies</i>	09021011065113	5.33			--	0.2	
<i>Tvetenia paucunca</i>	09021011065114	22.67			--	0.8	
<i>Rheotanytarsus</i>	09021011072		204.71	6	CF		6.8
<i>Rheotanytarsus exiguus group</i>	09021011072127	160.00			CF	5.3	
<i>Rheotanytarsus pellucidus</i>	09021011072128	44.00			CF	1.5	
<i>Tanytarsus</i>	09021011076	2.67	2.68	6	CF	0.1	0.1
<i>Microtendipes</i>	09021011094		6.69	6	CF		0.2
<i>Microtendipes rydalensis group</i>	09021011094168	6.67			--	0.2	
<i>Nilothauma</i>	09021011095	1.33	1.34	2	--	0.0	0.0
<i>Polypedilum</i>	09021011102	1.33	53.52	6	SH	0.0	1.8



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<i>Polypedilum aviceps</i>	09021011102181	34.67			--	1.1	
<i>Polypedilum flavum</i>	09021011102182	17.33			--	0.6	
<i>Simulium</i>	09021012047	1.33	2.67	4	CF	0.0	0.1
<i>Simulium venustum/verecundum</i> <i>complex</i>	09021012047072	1.33			CF	0.0	
<i>Atherix</i>	09021015055	2.67	2.67	2	PR	0.1	0.1
<i>Hemerodromia</i>	09021016057	6.67	6.67	3	PR	0.2	0.2
<i>Dineutus</i>	09021104032	2.67	2.67	2	--	0.1	0.1
<i>Macronychus</i>	09021113065		1.33	4	--		0.0
<i>Macronychus glabratus</i>	09021113065040	1.33			--	0.0	
<i>Optioservus</i>	09021113067		1.33	3	SC		0.0
<i>Optioservus ovalis</i>	09021113067046	1.33			--	0.0	
<i>Promoresia</i>	09021113069		5.33		--		0.2
<i>Promoresia tardella</i>	09021113069052	5.33			--	0.2	
<i>Sperchon</i>	09030107001	1.33	1.33		--	0.0	0.0