



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

Station Information

Station Number: S-412	River Basin: Saco
Waterbody: Red Brook - Station 412	HUC8 Name: Presumpscot
Town: South Portland	Latitude: 43 37 40.6 N
Directions: HQ - 100M BELOW HIGHWAY CULVERT	Longitude: 70 19 32.2 W
	Stream Order: 2

Sample Information

Log Number: 2807	Type of Sample: ROCK BAG	Date Deployed: 7/8/2020
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/10/2020

Classification Attainment

Statutory Class: C	Final Determination: NA	Date: 5/14/2021
Model Result with $P \geq 0.6$: NA	Reason for Determination: Model	
Date Last Calculated: 4/1/2021	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.00	Class A, B, or C	0.00
Class B	0.00	Non-Attainment	1.00
<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	312.67	18 Relative Abundance Ephemeroptera	0.00
02 Generic Richness	50.00	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>	1.00
04 Ephemeroptera Mean Abundance	0.33	23 Relative Generic Richness- Plecoptera	0.00
05 Shannon-Wiener Generic Diversity	3.18	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	40.67
06 Hilsenhoff Biotic Index	4.82	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.00
07 Relative Abundance - Chironomidae	0.28	28 EP Generic Richness/14	0.07
08 Relative Generic Richness Diptera	0.38	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	0.33		
11 <i>Cheumatopsyche</i> Abundance	2.00		
12 EPT Generic Richness/ Diptera Generic Richness	0.42		
13 Relative Abundance - Oligochaeta	0.03		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	1.67		
17 Chironomini Abundance (Family Functional Group)	24.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Gammarus</i>	48.40
2	<i>Tanytarsus</i>	12.26
3	<i>Dubiraphia</i>	5.65
4	<i>Phaenopsectra</i>	4.37
5	<i>Amnicola</i>	4.05



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 17.7 deg C
Dissolved Oxygen: 10.3 mg/l
Dissolved Oxygen Saturation: 107.7 %
Specific Conductance: 628 uS/cm
Velocity: 10 cm/s
pH: 7.38
Wetted Width: 6.1 m
Bankfull Width: 6.5 m
Depth: 31 cm

Waterbody Information - Retrieval

Temperature: 20.8 deg C
Dissolved Oxygen: 9.86 mg/l
Dissolved Oxygen Saturation: 109.7 %
Specific Conductance: 1086 uS/cm
Velocity: 2 cm/s
pH: 7.42
Wetted Width: 5.6 m
Bankfull Width: 6.5 m
Depth: 30 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Hardwood	Partly Open	Flat	
Urban			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Nps Pollution	Below Road Crossing	Boulder	15 %
Urban Runoff		Detritus	10 %
		Gravel	20 %
		Rubble/Cobble	25 %
		Sand	30 %

Landcover Summary - 2004 Data

Total Area (ac)	1839	High Int. Dev. %	6.6	Water %	1.5	Non-vegetated %	0.1
		Med Int. Dev. %	2.9	Wetland %	18.1	Tilled Agriculture %	0.1
		Low Int. Dev. %	11.0	Upland Woody %	40.2	Grassland %	4.8
		Development %	20.5	Natural %	58.7	Human Altered %	39.7
						Impervious %	15.5

Sample Comments

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**Maine Department of Environmental Protection
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Aquatic Life Taxonomic Inventory Report**

Station Number: S-412 Waterbody: Red Brook - Station 412 Town: South Portland
Log Number: 2807 Subsample Factor: X1 Replicates: 3 Calculated: 4/1/2021

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Prostoma</i>	04010101001	0.67	0.67		--	0.2	0.2
Lumbriculidae	08020101	0.67	0.67		--	0.2	0.2
Naididae	08020202	3.00			--	1.0	
<i>Nais</i>	08020202009	3.33	4.91		CG	1.1	1.6
<i>Aulodrilus</i>	08020202018		2.95		--		0.9
<i>Aulodrilus limnobius</i>	08020202018002	2.00			--	0.6	
<i>Limnodrilus</i>	08020202022		1.47		CG		0.5
<i>Limnodrilus hoffmeisteri</i>	08020202022003	1.00			--	0.3	
<i>Glossiphonia</i>	08030101004		0.33		--		0.1
<i>Glossiphonia elegans</i>	08030101004001	0.33			--	0.1	
<i>Gammarus</i>	09010201003	151.33	151.33	4	--	48.4	48.4
Isotomidae	09020102	0.33	0.33		--	0.1	0.1
<i>Boyeria</i>	09020301004		0.33	2	PR		0.1
<i>Boyeria vinosa</i>	09020301004012	0.33			--	0.1	
<i>Calopteryx</i>	09020307043	0.67	0.67	5	PR	0.2	0.2
<i>Labiobaetis</i>	09020401009	0.33	0.33		--	0.1	0.1
<i>Nyctiophylax</i>	09020603009	1.33	1.33	5	PR	0.4	0.4
<i>Polycentropus</i>	09020603010	2.00	2.00	6	PR	0.6	0.6
<i>Cheumatopsyche</i>	09020604015	2.00	2.00	5	CF	0.6	0.6
<i>Hydropsyche</i>	09020604016		0.33	4	CF		0.1
<i>Hydropsyche betteni</i>	09020604016037	0.33			--	0.1	
Phryganeidae	09020608	0.33	0.33		--	0.1	0.1
Limnephilidae	09020610	0.33	0.33		--	0.1	0.1
<i>Mystacides</i>	09020618075		3.00	4	CG		1.0
<i>Mystacides sepulchralis</i>	09020618075147	3.00			--	1.0	
<i>Nigronia</i>	09020701003		1.67	0	PR		0.5
<i>Nigronia serricornis</i>	09020701003003	1.67			--	0.5	
Chironomidae	09021011				--		
<i>Ablabesmyia</i>	09021011001	0.33	0.33	8	PR	0.1	0.1
<i>Paramerina</i>	09021011013	0.33	0.33		--	0.1	0.1
<i>Procladius</i>	09021011015	0.67	0.67	9	PR	0.2	0.2
<i>Thienemannimyia</i>	09021011020		0.33	3	PR		0.1
<i>Thienemannimyia group</i>	09021011020041	0.33			--	0.1	
<i>Prodiamesa</i>	09021011031	1.67	1.67	3	CG	0.5	0.5
<i>Brillia</i>	09021011033	1.00	1.00	5	SH	0.3	0.3
<i>Heterotrissocladius</i>	09021011044		0.33	0	CG		0.1
<i>Heterotrissocladius marcidus</i>	09021011044083	0.33			--	0.1	



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		Actual	Adjusted			Actual	Adjusted
		<i>Nanocladius</i>	09021011049			0.33	0.33
<i>Parametriocnemus</i>	09021011053	0.67	0.67	5	CG	0.2	0.2
<i>Micropsectra</i>	09021011070	1.00	1.00	7	CG	0.3	0.3
<i>Paratanytarsus</i>	09021011071	10.00	10.00	6	--	3.2	3.2
<i>Rheotanytarsus</i>	09021011072		8.67	6	CF		2.8
<i>Rheotanytarsus exiguus group</i>	09021011072127	5.00			CF	1.6	
<i>Rheotanytarsus pellucidus</i>	09021011072128	3.67			CF	1.2	
<i>Stempellinella</i>	09021011074	1.33	1.33	2	--	0.4	0.4
<i>Tanytarsus</i>	09021011076	38.33	38.33	6	CF	12.3	12.3
<i>Cryptochironomus</i>	09021011082	0.67	0.67	8	PR	0.2	0.2
<i>Microtendipes</i>	09021011094		2.00	6	CF		0.6
<i>Microtendipes pedellus group</i>	09021011094166	1.67			--	0.5	
<i>Microtendipes rydalensis group</i>	09021011094168	0.33			--	0.1	
<i>Paratendipes</i>	09021011100	4.00	4.00	8	CG	1.3	1.3
<i>Phaenopsectra</i>	09021011101		13.67	7	SC		4.4
<i>Phaenopsectra obediens group</i>	09021011101180	13.67			--	4.4	
<i>Polypedilum</i>	09021011102		3.67	6	SH		1.2
<i>Polypedilum aviceps</i>	09021011102181	1.00			--	0.3	
<i>Polypedilum fallax group</i>	09021011102183	1.00			--	0.3	
<i>Polypedilum illinoense group</i>	09021011102185	0.67			--	0.2	
<i>Polypedilum scalaenum group</i>	09021011102189	1.00			--	0.3	
<i>Ancyronyx</i>	09021113063		0.67	6	--		0.2
<i>Ancyronyx variegatus</i>	09021113063034	0.67			CG	0.2	
<i>Dubiraphia</i>	09021113064	17.67	17.67	6	--	5.7	5.7
<i>Macronychus</i>	09021113065		3.00	4	--		1.0
<i>Macronychus glabratus</i>	09021113065040	3.00			--	1.0	
<i>Optioservus</i>	09021113067	1.33	1.67	3	SC	0.4	0.5
<i>Optioservus tardella</i>	09021113067052	0.33			--	0.1	
<i>Stenelmis</i>	09021113070	5.67	5.67	5	SC	1.8	1.8
<i>Amnicola</i>	10010104013	12.67	12.67		SC	4.1	4.1
Lymnaeidae	10010201	0.33	0.33		--	0.1	0.1
<i>Physella</i>	10010202027	5.33	5.33		SC	1.7	1.7
<i>Helisoma</i>	10010203030		0.33		SC		0.1
<i>Helisoma anceps</i>	10010203030058	0.33			--	0.1	
<i>Ferrissia</i>	10010204035		0.33		SC		0.1
<i>Ferrissia fragilis</i>	10010204035064	0.33			--	0.1	
Sphaeriidae	10020201	0.33	0.33		CF	0.1	0.1
<i>Pisidium</i>	10020201002	0.67	0.67		CF	0.2	0.2