



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

Station Information

Station Number: S-840	River Basin:	Kennebec
Waterbody: Orbeton Stream - Station 840	HUC8 Name:	Lower Kennebec
Town: Madrid Twp	Latitude:	44 53 20.02 N
Directions: ~500M UPSTREAM OF REEDS MILL ROAD (FOLLOW OBERTON RECREATIONAL PARK TRAIL TO SITE)	Longitude:	70 24 23.42 W
	Stream Order:	4

Sample Information

Log Number: 2579	Type of Sample: ROCK BASKET	Date Deployed: 7/24/2017
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/21/2017

Classification Attainment

Statutory Class: A	Final Determination: A	Date: 3/16/2018
Model Result with $P \geq 0.6$: A	Reason for Determination: Model	
Date Last Calculated: 3/15/2018	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.84	Class A, B, or C	1.00
Class B	0.16	Non-Attainment	0.00
		<u>A Model</u>	
<u>B or Better Model</u>		Class A	1.00
Class A or B	1.00	Class B or C or Non-Attainment	0.00
Class C or Non-Attainment	0.00		

Model Variables

01 Total Mean Abundance	176.00	18 Relative Abundance Ephemeroptera	0.23
02 Generic Richness	39.00	19 EPT Generic Richness	24.00
03 Plecoptera Mean Abundance	23.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.67
04 Ephemeroptera Mean Abundance	40.33	23 Relative Generic Richness- Plecoptera	0.15
05 Shannon-Wiener Generic Diversity	3.61	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	9.00
06 Hilsenhoff Biotic Index	3.65	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	3.67
07 Relative Abundance - Chironomidae	0.16	28 EP Generic Richness/14	1.14
08 Relative Generic Richness Diptera	0.36	30 Presence of Class A Indicator Taxa/7	0.71
09 <i>Hydropsyche</i> Abundance	59.33		
11 <i>Cheumatopsyche</i> Abundance	1.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.71		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	20.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	0.67		
17 Chironomini Abundance (Family Functional Group)	6.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	33.71
2	<i>Baetis</i>	15.15
3	<i>Paragnetina</i>	7.77
4	<i>Brachycentrus</i>	6.82
5	<i>Cricotopus</i>	4.55



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Date Retrieved: 8/21/2017

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 16.3 deg C
Dissolved Oxygen: 10.99 mg/l
Dissolved Oxygen Saturation: 114 %
Specific Conductance: 28.7 uS/cm
Velocity: 30.5 cm/s
pH: 7.78
Wetted Width: 11 m
Bankfull Width: 18 m
Depth: 64 cm

Waterbody Information - Retrieval

Temperature: 18.7 deg C
Dissolved Oxygen: 10.62 mg/l
Dissolved Oxygen Saturation: 115.6 %
Specific Conductance: 30.3 uS/cm
Velocity: 51.8 cm/s
pH: 6.7
Wetted Width: 8.2 m
Bankfull Width: 18 m
Depth: 63 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Hilly
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Logging		Boulder 85 % Gravel 5 % Rubble/Cobble 10 %

Landcover Summary - 2004 Data

Total Area (ac)	27007	High Int. Dev. %	0.0	Water %	0.2	Non-vegetated %	0.1
		Med Int. Dev. %	0.0	Wetland %	0.4	Tilled Agriculture %	0.1
		Low Int. Dev. %	0.6	Upland Woody %	97.9	Grassland %	0.2
		Development %	0.7	Natural %	98.8	Human Altered %	1.0
						Impervious %	0.2

Sample Comments

8/21/17: BASKETS DISTURBED BY FLOW.



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Aquatic Life Taxonomic Inventory Report

Station Number: S-840

Waterbody: Orbeton Stream - Station 840

Town: Madrid Twp

Log Number: 2579

Subsample Factor: X1

Replicates: 3

Calculated: 3/15/2018

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002	0.33	0.33		--	0.2	0.2
<i>Paracapnia</i>	09020203018	0.33	0.33	1	SH	0.2	0.2
Perlodidae	09020207	1.33	1.33		--	0.8	0.8
<i>Isogenoides</i>	09020207033	0.67	0.67	0	PR	0.4	0.4
<i>Sweltsa</i>	09020208040	0.33	0.33		PR	0.2	0.2
<i>Paragnetina</i>	09020209049	13.33	13.67	1	PR	7.6	7.8
<i>Paragnetina immarginata</i>	09020209049149	0.33			--	0.2	
<i>Agnatina</i>	09020209050	1.00	7.00	2	PR	0.6	4.0
<i>Agnatina capitata</i>	09020209050152	6.00		2	PR	3.4	
<i>Baetis</i>	09020401001	2.00	26.67	4	CG	1.1	15.2
<i>Baetis flavistriga</i>	09020401001004	10.67			--	6.1	
<i>Baetis intercalaris</i>	09020401001008	7.00			--	4.0	
<i>Baetis pluto</i>	09020401001009	4.33			--	2.5	
<i>Baetis tricaudatus</i>	09020401001012	2.67			--	1.5	
<i>Plauditus</i>	09020401012	4.33	4.33		CG	2.5	2.5
<i>Epeorus</i>	09020402009		2.33	0	SC		1.3
<i>Epeorus vitreus</i>	09020402009033	2.33			--	1.3	
<i>Leucrocuta</i>	09020402011	1.00	1.00	1	SC	0.6	0.6
<i>Maccaffertium</i>	09020402015	3.67	3.67	4	SC	2.1	2.1
<i>Isonychia</i>	09020404018	0.33	0.33	2	CF	0.2	0.2
<i>Paraleptophlebia</i>	09020406026		0.33	1	CG		0.2
<i>Paraleptophlebia adoptiva</i>	09020406026078	0.33		1	CG	0.2	
<i>Ephemerella</i>	09020410035	1.00	1.00	1	CG	0.6	0.6
<i>Serratella</i>	09020410037		0.33	2	CG		0.2
<i>Serratella serratoides</i>	09020410037124	0.33			--	0.2	
<i>Tricorythodes</i>	09020411038	0.33	0.33	4	CG	0.2	0.2
<i>Neureclipsis</i>	09020603008	5.00	5.00	7	CF	2.8	2.8
<i>Cheumatopsyche</i>	09020604015	1.00	1.00	5	CF	0.6	0.6
<i>Hydropsyche</i>	09020604016	47.33	59.33	4	CF	26.9	33.7
<i>Hydropsyche morosa</i>	09020604016030	0.33			--	0.2	
<i>Hydropsyche slossonae</i>	09020604016031	8.33			--	4.7	
<i>Hydropsyche sparna</i>	09020604016032	3.33			--	1.9	
<i>Rhyacophila</i>	09020605019	0.33	0.67	2	PR	0.2	0.4
<i>Rhyacophila fuscula</i>	09020605019060	0.33			PR	0.2	
<i>Glossosoma</i>	09020606020	1.67	1.67	0	SC	0.9	0.9
<i>Hydroptila</i>	09020607026	0.33	0.33	6	P	0.2	0.2
<i>Brachycentrus</i>	09020609043		12.00	0	CF		6.8



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		Actual	Adjusted			Actual	Adjusted
<i>Brachycentrus appalachia</i>	09020609043096	12.00			--	6.8	
<i>Lepidostoma</i>	09020611064	0.67	0.67	1	SH	0.4	0.4
Chironomidae	09021011				--		
<i>Thienemannimyia</i>	09021011020		0.67	3	PR		0.4
<i>Thienemannimyia group</i>	09021011020041	0.67			--	0.4	
<i>Pagastia</i>	09021011025	0.67	0.67	1	--	0.4	0.4
<i>Cardiocladius</i>	09021011034	0.33	0.33	5	PR	0.2	0.2
<i>Corynoneura</i>	09021011036	1.67	1.67	7	CG	0.9	0.9
<i>Cricotopus</i>	09021011037	6.33	8.00	7	SH	3.6	4.5
<i>Cricotopus bicinctus</i>	09021011037057	1.67			--	0.9	
<i>Orthocladius</i>	09021011050	0.67	1.33	6	CG	0.4	0.8
<i>Orthocladius dubitatus</i>	09021011050103	0.67			--	0.4	
<i>Thienemanniella</i>	09021011062	0.33	0.33	6	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		1.67	5	CG		0.9
<i>Tvetenia vitracies</i>	09021011065113	1.33			--	0.8	
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.2	
<i>Micropsectra</i>	09021011070	0.67	0.67	7	CG	0.4	0.4
<i>Rheotanytarsus</i>	09021011072		6.33	6	CF		3.6
<i>Rheotanytarsus exiguus group</i>	09021011072127	1.67			CF	0.9	
<i>Rheotanytarsus pellucidus</i>	09021011072128	4.67			CF	2.7	
<i>Polypedilum</i>	09021011102		6.00	6	SH		3.4
<i>Polypedilum aviceps</i>	09021011102181	5.33			--	3.0	
<i>Polypedilum flavum</i>	09021011102182	0.67			--	0.4	
<i>Simulium</i>	09021012047	2.67	2.67	4	CF	1.5	1.5
<i>Hemerodromia</i>	09021016057	0.67	0.67	3	PR	0.4	0.4
Dolichopodidae	09021017	0.33	0.33	4	--	0.2	0.2