



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

Station Information

Station Number: S-697	River Basin: Kennebec
Waterbody: Halfmoon Stream - Station 697	HUC8 Name: Lower Kennebec
Town: Thorndike	Latitude: 44 34 30.02 N
Directions: ABOVE RT. 220	Longitude: 69 16 33.23 W
	Stream Order: 3

Sample Information

Log Number: 2256	Type of Sample: ROCK BAG	Date Deployed: 7/9/2014
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/6/2014

Classification Attainment

Statutory Class: A	Final Determination: B	Date: 12/9/2014
Model Result with $P \geq 0.6$: B	Reason for Determination: Best Professional Judgement	
Date Last Calculated: 12/8/2014	Comments: Indeterminate for Class A (0.55) not raised to Class A based on Total Abundance and Dominant Taxa.	

Model Probabilities

First Stage Model				C or Better Model	
Class A	0.21	Class C	0.04	Class A, B, or C	1.00
Class B	0.75	NA	0.00	Non-Attainment	0.00
B or Better Model				A Model	
Class A or B			1.00	Class A	0.55
Class C or Non-Attainment			0.00	Class B or C or Non-Attainment	0.45

Model Variables

01 Total Mean Abundance	3886.67	18 Relative Abundance Ephemeroptera	0.07
02 Generic Richness	90.00	19 EPT Generic Richness	26.00
03 Plecoptera Mean Abundance	12.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	23.50
04 Ephemeroptera Mean Abundance	268.00	23 Relative Generic Richness- Plecoptera	0.04
05 Shannon-Wiener Generic Diversity	3.79	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	582.94
06 Hilsenhoff Biotic Index	5.09	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	10.67
07 Relative Abundance - Chironomidae	0.50	28 EP Generic Richness/14	1.07
08 Relative Generic Richness Diptera	0.50	30 Presence of Class A Indicator Taxa/7	0.43
09 <i>Hydropsyche</i> Abundance	921.41		
11 <i>Cheumatopsyche</i> Abundance	383.92		
12 EPT Generic Richness/ Diptera Generic Richness	0.58		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	1.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	138.21		
17 Chironomini Abundance (Family Functional Group)	1434.60		

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Polypedilum</i>	25.99
2	<i>Hydropsyche</i>	23.71
3	<i>Cheumatopsyche</i>	9.88
4	<i>Phaenopsectra</i>	5.83
5	<i>Tanytarsus</i>	4.20



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Waterbody: Halfmoon Stream - Station 697

Date Retrieved: 8/6/2014

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 25.1 deg C
Dissolved Oxygen: 9.4 mg/l
Specific Conductance: 102 uS/cm
Velocity:
pH: 7.27
Wetted Width: 15 m
Bankfull Width: 15 m
Depth: 45 cm

Waterbody Information - Retrieval

Temperature: 21.6 deg C
Dissolved Oxygen: 10.5 mg/l
Specific Conductance: 114 uS/cm
Velocity: 20 cm/s
pH: 8.45
Wetted Width: 15 m
Bankfull Width: 15 m
Depth: 40 cm

Water Chemistry - 8/6/2014

Ammonia As Nitrogen	0.01 mg/l	Nitrate+nitrite As N	0.55 mg/l
Total Phosphorus	12 ug/l	Total Kjeldahl Nitrogen	0.3 mg/l
Total Suspended Solids	2 mg/l	Dissolved Organic Carbon	2.1 mg/l
Total Dissolved Solids	84 mg/l	Orthophosphate As Phosphorus	3 ug/l

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Hardwood	Open	Rolling
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Agricultural Runoff	Above Road Crossing	Bedrock 5 %
	Below Agriculture NPS	Boulder 35 %
		Gravel 10 %
		Rubble/Cobble 40 %
		Sand 10 %

Landcover Summary - 2004 Data

Total Area (ac)	20308	High Int. Dev. %	0.1	Water %	0.3	Non-vegetated %	0.1
		Med Int. Dev. %	0.3	Wetland %	1.4	Tilled Agriculture %	7.3
		Low Int. Dev. %	2.9	Upland Woody %	78.0	Grassland %	9.6
		Development %	3.3	Natural %	79.4	Human Altered %	20.3
						Impervious %	2.7

Sample Comments

7/9/14-FISH PRESENT. QUESTIONABLE VELOCITY METER READING.
8/6/14- LOTS OF STRANDS OF ALGAE, PH/SPC METER ACTING FUNNY.



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Subsample Factor: X4

Replicates: 3

Calculated: 12/8/2014

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002		8.00		--		0.2
<i>Girardia tigrina</i>	03010102002001	8.00			--	0.2	
<i>Lumbriculus</i>	08020101002		1.33		CG		0.0
<i>Lumbriculus variegatus</i>	08020101002001	1.33			--	0.0	
Enchytraeidae	08020201	1.33	1.33		--	0.0	0.0
<i>Glossiphonia</i>	08030101004		1.33		--		0.0
<i>Glossiphonia complanata</i>	08030101004001	1.33			--	0.0	
<i>Erpobdella</i>	08030203002		1.33		--		0.0
<i>Erpobdella fervida</i>	08030203002002	1.33			--	0.0	
<i>Pteronarcys</i>	09020205023		1.33	0	SH		0.0
<i>Pteronarcys biloba</i>	09020205023061	1.33			--	0.0	
Perlodidae	09020207	8.00	8.00		--	0.2	0.2
<i>Isoperla</i>	09020207026	1.33	1.33	2	PR	0.0	0.0
<i>Agnatina</i>	09020209050		1.33	2	PR		0.0
<i>Agnatina capitata</i>	09020209050152	1.33		2	PR	0.0	
<i>Boyeria</i>	09020301004		4.00	2	PR		0.1
<i>Boyeria grafiana</i>	09020301004011	1.33			--	0.0	
<i>Boyeria vinosa</i>	09020301004012	2.67			--	0.1	
<i>Gomphus</i>	09020302012		1.33	5	PR		0.0
<i>Gomphus descriptus</i>	09020302012023	1.33		5	PR	0.0	
Baetidae	09020401	5.33			--	0.1	
<i>Baetis</i>	09020401001	4.00	103.31	4	CG	0.1	2.7
<i>Baetis flavistriga</i>	09020401001004	94.67			--	2.4	
<i>Acerpenna</i>	09020401007	2.67	2.79	5	CG	0.1	0.1
<i>Plauditus</i>	09020401012	4.00	5.58		CG	0.1	0.1
<i>Plauditus cestus</i>	09020401012004	1.33			--	0.0	
<i>Diphetor</i>	09020401013		2.79		--		0.1
<i>Diphetor hageni</i>	09020401013001	2.67			--	0.1	
<i>Iswaeon</i>	09020401015	4.00	4.19		--	0.1	0.1
Heptageniidae	09020402	2.67	2.67		--	0.1	0.1
<i>Maccaffertium</i>	09020402015	8.00	10.67	4	SC	0.2	0.3
<i>Maccaffertium luteum</i>	09020402015049	1.33			--	0.0	
<i>Maccaffertium modestum</i>	09020402015051	1.33			--	0.0	
<i>Ephemerella</i>	09020410035	8.00	8.00	1	CG	0.2	0.2
<i>Eurylophella</i>	09020410036	2.67	2.67	3	CG	0.1	0.1
<i>Serratella</i>	09020410037		14.67	2	CG		0.4
<i>Serratella (Teloganopsis) deficiens</i>	09020410037121	13.33			--	0.3	
<i>Serratella serratoides</i>	09020410037124	1.33			--	0.0	



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		Actual	Adjusted			Actual	Adjusted
<i>Tricorythodes</i>	09020411038	110.67	110.67	4	CG	2.8	2.8
<i>Polycentropus</i>	09020603010	58.67	58.67	6	PR	1.5	1.5
Hydropsychidae	09020604	308.00			--	7.9	
<i>Cheumatopsyche</i>	09020604015	293.33	383.92	5	CF	7.5	9.9
<i>Hydropsyche</i>	09020604016	592.00	921.41	4	CF	15.2	23.7
<i>Hydropsyche bronta</i>	09020604016029	4.00			--	0.1	
<i>Hydropsyche morosa</i>	09020604016030	20.00			--	0.5	
<i>Hydropsyche placoda</i>	09020604016059	88.00			--	2.3	
<i>Rhyacophila</i>	09020605019	1.33	1.33	2	PR	0.0	0.0
<i>Hydroptila</i>	09020607026	17.33	17.33	6	P	0.4	0.4
<i>Pycnopsyche</i>	09020610049	2.67	2.67	4	SH	0.1	0.1
<i>Psilotreta</i>	09020614068	4.00	4.00	0	SC	0.1	0.1
<i>Helicopsyche</i>	09020616070		133.33	3	SC		3.4
<i>Helicopsyche borealis</i>	09020616070137	133.33			--	3.4	
Leptoceridae	09020618				--		
<i>Mystacides</i>	09020618075		5.33	4	CG		0.1
<i>Mystacides sepulchralis</i>	09020618075147	5.33			--	0.1	
<i>Triaenodes</i>	09020618077	2.67	2.67	6	SH	0.1	0.1
<i>Oecetis</i>	09020618078	4.00	4.00	8	PR	0.1	0.1
<i>Nigronia</i>	09020701003		4.00	0	PR		0.1
<i>Nigronia serricornis</i>	09020701003003	4.00			--	0.1	
<i>Tipula</i>	09021001002	1.33	1.33	4	SH	0.0	0.0
<i>Antocha</i>	09021001004	16.00	16.00	3	CG	0.4	0.4
<i>Dicranota</i>	09021001005	1.33	1.33	3	PR	0.0	0.0
<i>Bezzia/palpomyia</i>	09021010043	2.67	2.67	6	PR	0.1	0.1
Chironomidae	09021011	68.00			--	1.7	
<i>Ablabesmyia</i>	09021011001	5.33	26.26	8	PR	0.1	0.7
<i>Ablabesmyia mallochii</i>	09021011001004	20.00			--	0.5	
<i>Conchapelopia</i>	09021011004	22.67	23.50	6	PR	0.6	0.6
<i>Nilotanyus</i>	09021011012	1.33	4.15	6	PR	0.0	0.1
<i>Nilotanyus fimbriatus</i>	09021011012027	2.67			--	0.1	
<i>Paramerina</i>	09021011013	1.33	1.38		--	0.0	0.0
<i>Pentaneura</i>	09021011014		5.53	6	PR		0.1
<i>Pentaneura inconspicua</i>	09021011014028	5.33			--	0.1	
<i>Rheopelopia</i>	09021011017	6.67	63.58		PR	0.2	1.6
<i>Rheopelopia acra group</i>	09021011017036	54.67			--	1.4	
<i>Thienemannimyia</i>	09021011020		1.38	3	PR		0.0
<i>Thienemannimyia senata</i>	09021011020040	1.33			--	0.0	



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<i>Trissopelopia</i>	09021011021		11.06		PR		0.3
<i>Trissopelopia ogemawi</i>	09021011021042	10.67			--	0.3	
<i>Zavrelimyia</i>	09021011022		1.38	8	PR		0.0
<i>Zavrelimyia thryptica group</i>	09021011022045	1.33			PR	0.0	
<i>Pagastia</i>	09021011025		2.76	1	--		0.1
<i>Pagastia orthogonia</i>	09021011025001	2.67			--	0.1	
<i>Potthastia</i>	09021011026		16.58	2	CG		0.4
<i>Potthastia gaedii</i>	09021011026045	16.00			--	0.4	
<i>Brillia</i>	09021011033		2.76	5	SH		0.1
<i>Brillia flavifrons</i>	09021011033049	2.67			--	0.1	
<i>Corynoneura</i>	09021011036	6.67	6.91	7	CG	0.2	0.2
<i>Cricotopus</i>	09021011037	1.33	9.67	7	SH	0.0	0.2
<i>Cricotopus vierriensis</i>	09021011037071	8.00			--	0.2	
<i>Heterotrissocladius</i>	09021011044		1.38	0	CG		0.0
<i>Heterotrissocladius marcidus</i>	09021011044083	1.33			--	0.0	
<i>Limnophyes</i>	09021011047	1.33	1.38	8	CG	0.0	0.0
<i>Nanocladius</i>	09021011049			3	CG		
<i>Orthocladius</i>	09021011050	1.33	12.44	6	CG	0.0	0.3
<i>Orthocladius annectens</i>	09021011050092	5.33			--	0.1	
<i>Orthocladius carlatus</i>	09021011050093	5.33			--	0.1	
<i>Parakiefferiella</i>	09021011052		6.91		CG		0.2
<i>Parakiefferiella sp. E</i>	09021011052001	6.67			--	0.2	
<i>Parametriocnemus</i>	09021011053	21.33	22.11	5	CG	0.5	0.6
<i>Rheocricotopus</i>	09021011057		5.53	6	CG		0.1
<i>Rheocricotopus robacki</i>	09021011057105	5.33			--	0.1	
<i>Synorthocladius</i>	09021011061	5.33	5.53	2	CG	0.1	0.1
<i>Thienemanniella</i>	09021011062	5.33	6.91	6	CG	0.1	0.2
<i>Thienemanniella xena</i>	09021011062110	1.33			--	0.0	
<i>Tvetenia</i>	09021011065		15.20	5	CG		0.4
<i>Tvetenia vitracies</i>	09021011065113	14.67			--	0.4	
<i>Micropsectra</i>	09021011070	22.67	23.50	7	CG	0.6	0.6
<i>Paratanytarsus</i>	09021011071		5.53	6	--		0.1
<i>Paratanytarsus longistylus</i>	09021011071126	5.33		6	--	0.1	
<i>Rheotanytarsus</i>	09021011072		34.55	6	CF		0.9
<i>Rheotanytarsus exiguus</i>	09021011072127	28.00			CF	0.7	
<i>Rheotanytarsus pellucidus</i>	09021011072128	5.33			CF	0.1	
<i>Stempellinella</i>	09021011074		2.76	2	--		0.1
<i>Stempellinella fimbriata</i>	09021011074002	2.67			--	0.1	



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		Actual	Adjusted			Actual	Adjusted
<i>Sublettea</i>	09021011075		9.67		--		0.2
<i>Sublettea coffmani</i>	09021011075131	9.33			--	0.2	
<i>Tanytarsus</i>	09021011076	72.00	163.09	6	CF	1.9	4.2
<i>Tanytarsus buckleyi</i>	09021011076139	85.33			CF	2.2	
<i>Cryptochironomus</i>	09021011082	8.00	8.29	8	PR	0.2	0.2
<i>Demicryptochironomus</i>	09021011084	1.33	1.38	8	CG	0.0	0.0
<i>Microtendipes</i>	09021011094		131.30	6	CF		3.4
<i>Microtendipes pedellus group</i>	09021011094166	116.00			--	3.0	
<i>Microtendipes rydalensis group</i>	09021011094168	10.67			--	0.3	
<i>Nilothauma</i>	09021011095	40.00	41.46	2	--	1.0	1.1
<i>Paracladopelma</i>	09021011098		5.53	7	--		0.1
<i>Paracladopelma undine</i>	09021011098177	5.33			--	0.1	
<i>Paralauterborniella</i>	09021011099		6.91	8	CG		0.2
<i>Paralauterborniella nigrohalteralis</i>	09021011099175	6.67			--	0.2	
<i>Paratendipes</i>	09021011100		1.38	8	CG		0.0
<i>Paratendipes albimanus group</i>	09021011100176	1.33			--	0.0	
<i>Phaenopsectra</i>	09021011101		226.66	7	SC		5.8
<i>Phaenopsectra flavipes</i>	09021011101179	5.33			SC	0.1	
<i>Phaenopsectra obediens</i>	09021011101182	213.33			SC	5.5	
<i>Polypedilum</i>	09021011102		1010.30	6	SH		26.0
<i>Polypedilum aviceps</i>	09021011102181	622.67			--	16.0	
<i>Polypedilum flavum</i>	09021011102182	141.33			--	3.6	
<i>Polypedilum laetum</i>	09021011102186	20.00			--	0.5	
<i>Polypedilum scalaenum group</i>	09021011102189	190.67			--	4.9	
<i>Stenochironomus</i>	09021011105	1.33	1.38	5	CG	0.0	0.0
<i>Hemerodromia</i>	09021016057	1.33	1.33	3	PR	0.0	0.0
<i>Roederiodes</i>	09021016058	1.33	1.33	3	PR	0.0	0.0
<i>Peltodytes</i>	09021101002	1.33	1.33		P	0.0	0.0
<i>Neoporus</i>	09021103033	2.67	2.67		--	0.1	0.1
<i>Dineutus</i>	09021104032	1.33	1.33	2	--	0.0	0.0
<i>Psephenus</i>	09021108058		2.67	4	SC		0.1
<i>Psephenus herricki</i>	09021108058028	2.67			--	0.1	
<i>Dubiraphia</i>	09021113064		4.00	6	--		0.1
<i>Dubiraphia minima</i>	09021113064036	4.00			--	0.1	
<i>Microcylloepus</i>	09021113066	1.33	1.33	3	--	0.0	0.0
<i>Optioservus</i>	09021113067	6.67	6.67	3	SC	0.2	0.2
<i>Promoresia</i>	09021113069		9.33		--		0.2
<i>Promoresia elegans</i>	09021113069051	2.67			--	0.1	



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<i>Promoresia tardella</i>	09021113069052	6.67			--	0.2	
<i>Stenelmis</i>	09021113070	16.00	61.33	5	SC	0.4	1.6
<i>Stenelmis crenata</i>	09021113070055	45.33			--	1.2	
Acariformes	090301	1.33	1.33		--	0.0	0.0
Sphaeriidae	10020201	5.33	5.33		CF	0.1	0.1