



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

Station Information

Station Number: S-697	DEP Drainage: Kennebec
Waterbody: Halfmoon Stream - Station 697	HUC8: 01030003
Town: Thorndike	HUC8 Name: Lower Kennebec
Directions: ABOVE RT. 220	Latitude: 44 34 30.02 N
	Longitude: 69 16 33.23 W
	Stream Order: 3

Sample Information

Log Number: 2126	Type of Sample: ROCK BAG	Date Deployed: 7/19/2012
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/22/2012

Classification Attainment

Statutory Class: A	Final Determination: B	Date: 1/17/2013
Model Result with P>.6: B	Reason for Determination: Model	
Date Last Calculated: 1/15/2013	Comments: Indeterminate for class A (0.50). Not raised to class A based on total abundance and dominant taxa	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.44	Class A, B, or C	1.00
Class B	0.54	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.50
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.50

Model Variables

01 Total Mean Abundance	1302.67	18 Relative Abundance Ephemeroptera	0.06
02 Generic Richness	70.00	19 EPT Generic Richness	20.00
03 Plecoptera Mean Abundance	9.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	82.67	23 Relative Generic Richness- Plecoptera	0.01
05 Shannon-Wiener Generic Diversity	4.56	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	340.51
06 Hilsenhoff Biotic Index	5.13	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	46.67
07 Relative Abundance - Chironomidae	0.50	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.37	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	187.63	Five Most Dominant Taxa	
11 <i>Cheumatopsyche</i> Abundance	63.03	Rank	Taxon Name
12 EPT Generic Richness/ Diptera Generic Richness	0.77		Percent
13 Relative Abundance - Oligochaeta	0.01	1	<i>Tanytarsus</i>
15 Perlidae Mean Abundance (Family Functional Group)	0.00	2	<i>Hydropsyche</i>
16 Tanypodinae Mean Abundance	39.17	3	<i>Microtendipes</i>
(Family Functional Group)		4	<i>Cheumatopsyche</i>
17 Chironomini Abundance (Family Functional Group)	266.06	5	<i>Phaenopsectra</i>



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

Station Number: S-697

Town: Thorndike

Date Deployed: 7/19/2012

Log Number: 2126

Waterbody: Halfmoon Stream - Station 697

Date Retrieved: 8/22/2012

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature:	18.4 deg C
Dissolved Oxygen:	9.6 mg/l
Specific Conductance:	136 uS/cm
Velocity:	27.3 cm/s
pH:	7.76
Wetted Width:	15 m
Bankfull Width:	15 m
Depth:	35 cm

Waterbody Information - Retrieval

Temperature:	19.1 deg C
Dissolved Oxygen:	9.2 mg/l
Specific Conductance:	158 uS/cm
Velocity:	13 cm/s
pH:	6.51
Wetted Width:	15 m
Bankfull Width:	15 m
Depth:	30 cm

Water Chemistry - 8/22/2012

Ammonia As Nitrogen	0.01 mg/l	Soluble Reactive Phosphorus	3 ug/l
Nitrate+nitrite As N	0.84 mg/l	Total Phosphorus	0.015 mg/l
Total Kjeldahl Nitrogen	0.2 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	2.8 mg/l	Total Dissolved Solids	79 mg/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 %
Nutrients	Below Agriculture NPS	Boulder 35 %
		Gravel 15 %
		Rubble/Cobble 40 %
		Sand 5 %

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

7/19/12, 8/22/12: FISH OBSERVED, CONSIDERABLE ALGAE FILAMENTOUS STRANDS.



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-697

Waterbody: Halfmoon Stream - Station 697

Town: Thorndike

Log Number: 2126

Subsample Factor: X4

Replicates: 3

Calculated: 1/15/2013

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
Dugesidae	03010102	8.00	8.00		--	0.6	0.6
<i>Girardia</i>	03010102002		18.67		--		1.4
<i>Girardia tigrina</i>	03010102002001	18.67			--	1.4	
<i>Chaetogaster</i>	08020202002		2.67		--		0.2
<i>Chaetogaster limnaei</i>	08020202002004	2.67			--	0.2	
<i>Pristina</i>	08020202004		1.33		--		0.1
<i>Pristina sima</i>	08020202004008	1.33			--	0.1	
<i>Nais</i>	08020202009		4.00		CG		0.3
<i>Nais communis</i>	08020202009005	2.67			--	0.2	
<i>Nais pseudobtusa</i>	08020202009010	1.33			--	0.1	
Perlodidae	09020207	9.33	9.33		--	0.7	0.7
<i>Boyeria</i>	09020301004		2.67	2	PR		0.2
<i>Boyeria vinosa</i>	09020301004012	2.67			--	0.2	
<i>Gomphus</i>	09020302012		4.00	5	PR		0.3
<i>Gomphus abbreviatus</i>	09020302012027	4.00			--	0.3	
<i>Calopteryx</i>	09020307043	1.33	2.67	5	PR	0.1	0.2
<i>Calopteryx aequabilis</i>	09020307043085	1.33			--	0.1	
<i>Ischnura</i>	09020309052	1.33	1.33	9	PR	0.1	0.1
Ephemeroptera	090204	1.33	1.33		--	0.1	0.1
Baetidae	09020401	1.33			--	0.1	
<i>Acerpenna</i>	09020401007	2.67	5.00	5	CG	0.2	0.4
<i>Acerpenna pygmaea</i>	09020401007011	1.33			--	0.1	
<i>Iswaeon</i>	09020401015	1.33	1.67		--	0.1	0.1
Heptageniidae	09020402	6.67	6.67		--	0.5	0.5
<i>Maccaffertium</i>	09020402015	20.00	46.67	4	SC	1.5	3.6
<i>Maccaffertium luteum</i>	09020402015049	26.67			--	2.0	
Leptophlebiidae	09020406	4.00	4.00		--	0.3	0.3
<i>Ephemerella</i>	09020410035	4.00	4.00	1	CG	0.3	0.3
<i>Eurylophella</i>	09020410036	1.33	1.33	3	CG	0.1	0.1
<i>Tricorythodes</i>	09020411038	9.33	9.33	4	CG	0.7	0.7
<i>Caenis</i>	09020412040	2.67	2.67	7	CG	0.2	0.2
Polycentropodidae	09020603	2.67	2.67		--	0.2	0.2
<i>Polycentropus</i>	09020603010	34.67	34.67	6	PR	2.7	2.7
Hydropsychidae	09020604	22.67			--	1.7	
<i>Cheumatopsyche</i>	09020604015	57.33	63.03	5	CF	4.4	4.8
<i>Hydropsyche</i>	09020604016	84.00	187.63	4	CF	6.4	14.4
<i>Hydropsyche bronta</i>	09020604016029	12.00			--	0.9	
<i>Hydropsyche morosa</i>	09020604016030	8.00			--	0.6	



Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report

Station Number: S-697

Waterbody: Halfmoon Stream - Station 697

Town: Thorndike

Log Number: 2126

Subsample Factor: X4

Replicates: 3

Calculated: 1/15/2013

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Hydropsyche placoda</i>	09020604016059	66.67			--	5.1	
<i>Rhyacophila</i>	09020605019		6.67	2	PR		0.5
<i>Rhyacophila minor</i>	09020605019063	6.67			PR	0.5	
<i>Hydroptila</i>	09020607026	12.00	12.00	6	P	0.9	0.9
Limnephilidae	09020610				--		
<i>Psilotreta</i>	09020614068		6.67	0	SC		0.5
<i>Psilotreta indecisa</i>	09020614068132	5.33			--	0.4	
<i>Psilotreta frontalis</i>	09020614068134	1.33			--	0.1	
<i>Helicopsyche</i>	09020616070		41.33	3	SC		3.2
<i>Helicopsyche borealis</i>	09020616070137	41.33			--	3.2	
Leptoceridae	09020618				--		
<i>Mystacides</i>	09020618075		5.33	4	CG		0.4
<i>Mystacides sepulchralis</i>	09020618075147	5.33			--	0.4	
<i>Oecetis</i>	09020618078	17.33	49.33	8	PR	1.3	3.8
<i>Oecetis avara</i>	09020618078153	9.33			--	0.7	
<i>Oecetis inconspicua complex</i>	09020618078156	20.00			--	1.5	
<i>Oecetis persimilis</i>	09020618078157	2.67			--	0.2	
<i>Nigronia</i>	09020701003		4.00	0	PR		0.3
<i>Nigronia serricornis</i>	09020701003003	4.00			--	0.3	
<i>Sialis</i>	09020702004	1.33	1.33	4	PR	0.1	0.1
<i>Tipula</i>	09021001002	8.00	8.00	4	SH	0.6	0.6
<i>Antocha</i>	09021001004	1.33	1.33	3	CG	0.1	0.1
Chironomidae	09021011	118.67			--	9.1	
<i>Ablabesmyia</i>	09021011001		6.53	8	PR		0.5
<i>Ablabesmyia mallochii</i>	09021011001004	2.67			--	0.2	
<i>Ablabesmyia monilis</i>	09021011001009	2.67			--	0.2	
<i>Conchapelopia</i>	09021011004			6	PR		
<i>Nilotanytus</i>	09021011012		1.63	6	PR		0.1
<i>Nilotanytus fimbriatus</i>	09021011012027	1.33			--	0.1	
<i>Pentaneura</i>	09021011014		3.26	6	PR		0.3
<i>Pentaneura inconspicua</i>	09021011014028	2.67			--	0.2	
<i>Thienemannimyia</i>	09021011020		27.75	3	PR		2.1
<i>Thienemannimyia norena</i>	09021011020039	22.67			--	1.7	
<i>Pagastia</i>	09021011025		1.63	1	--		0.1
<i>Pagastia orthogonia</i>	09021011025001	1.33			--	0.1	
<i>Potthastia</i>	09021011026		1.63	2	CG		0.1
<i>Potthastia gaedii</i>	09021011026045	1.33			--	0.1	
<i>Brillia</i>	09021011033		1.63	5	SH		0.1



Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report

Station Number: S-697

Waterbody: Halfmoon Stream - Station 697

Town: Thorndike

Log Number: 2126

Subsample Factor: X4

Replicates: 3

Calculated: 1/15/2013

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Brillia flavifrons</i>	09021011033049	1.33			--	0.1	
<i>Corynoneura</i>	09021011036	1.33	1.63	7	CG	0.1	0.1
<i>Cricotopus</i>	09021011037		14.69	7	SH		1.1
<i>Cricotopus bicinctus</i>	09021011037057	12.00			--	0.9	
<i>Orthocladius</i>	09021011050		4.90	6	CG		0.4
<i>Orthocladius carlatus</i>	09021011050093	4.00			--	0.3	
<i>Parakiefferiella</i>	09021011052	2.67	3.26		CG	0.2	0.3
<i>Parametriocnemus</i>	09021011053	8.00	9.79	5	CG	0.6	0.8
<i>Thienemanniella</i>	09021011062	1.33	1.63	6	CG	0.1	0.1
<i>Rheotanytarsus</i>	09021011072	21.33	26.12	6	CF	1.6	2.0
<i>Stempellinella</i>	09021011074		9.79	2	--		0.8
<i>Stempellinella fimbriata</i>	09021011074002	8.00			--	0.6	
<i>Sublettea coffmani</i>	09021011075131				--		
<i>Tanytarsus</i>	09021011076	209.33	256.26	6	CF	16.1	19.7
<i>Pseudochironomus</i>	09021011078	18.67	22.85	5	CG	1.4	1.8
<i>Microtendipes</i>	09021011094		120.79	6	CF		9.3
<i>Microtendipes pedellus group</i>	09021011094166	42.67			--	3.3	
<i>Microtendipes rydalensis group</i>	09021011094168	56.00			--	4.3	
<i>Nilothauma</i>	09021011095	25.33	31.01	2	--	1.9	2.4
<i>Phaenopsectra</i>	09021011101		55.50	7	SC		4.3
<i>Phaenopsectra flavipes</i>	09021011101179	2.67			SC	0.2	
<i>Phaenopsectra obediens</i>	09021011101182	42.67			SC	3.3	
<i>Polypedilum</i>	09021011102		35.91	6	SH		2.8
<i>Polypedilum aviceps</i>	09021011102181	18.67			--	1.4	
<i>Polypedilum flavum</i>	09021011102182	2.67			--	0.2	
<i>Polypedilum scalaenum group</i>	09021011102189	8.00			--	0.6	
<i>Helopelopia</i>	09021011114	6.67	8.16	6	PR	0.5	0.6
<i>Xestochironomus</i>	09021011143	1.33	1.63		PR	0.1	0.1
<i>Atherix</i>	09021015055	5.33	5.33	2	PR	0.4	0.4
<i>Neoporus</i>	09021103033	2.67	2.67		--	0.2	0.2
<i>Nebrioporus</i>	09021103034		1.33		PR		0.1
<i>Nebrioporus rotundatus</i>	09021103034001	1.33			--	0.1	
<i>Dineutus</i>	09021104032	2.67	2.67	2	--	0.2	0.2
<i>Psephenus</i>	09021108058		4.00	4	SC		0.3
<i>Psephenus herricki</i>	09021108058028	4.00			--	0.3	
<i>Ectopria</i>	09021109059	1.33	1.33	5	SC	0.1	0.1
<i>Dubiraphia</i>	09021113064		5.33	6	--		0.4
<i>Dubiraphia minima</i>	09021113064036	5.33			--	0.4	



Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report

Station Number: S-697

Waterbody: Halfmoon Stream - Station 697

Town: Thorndike

Log Number: 2126

Subsample Factor: X4

Replicates: 3

Calculated: 1/15/2013

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Microcylloepus</i>	09021113066	1.33	1.33	3	--	0.1	0.1
<i>Optioservus</i>	09021113067	6.67	6.67	3	SC	0.5	0.5
<i>Promoresia</i>	09021113069		14.67		--		1.1
<i>Promoresia elegans</i>	09021113069051	4.00			--	0.3	
<i>Promoresia tardella</i>	09021113069052	10.67			--	0.8	
<i>Stenelmis</i>	09021113070	17.33	37.33	5	SC	1.3	2.9
<i>Stenelmis crenata</i>	09021113070055	20.00			--	1.5	
Acariformes	090301	2.67	2.67		--	0.2	0.2
<i>Helisoma</i>	10010203030		5.33		SC		0.4
<i>Helisoma anceps</i>	10010203030058	5.33			--	0.4	
Sphaeriidae	10020201	2.67	2.67		CF	0.2	0.2