



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

Station Information

Station Number: S-196
Waterbody: Kennebec River - Station 196
Town: Benton
Directions: 10.3 KM BELOW S.D. WARREN CO.
DEP Drainage: Kennebec
HUC8: 01030003
HUC8 Name: Lower Kennebec
Latitude: 44 37 28.69 N
Longitude: 69 34 38.17 W
Stream Order: 6

Sample Information

Log Number: 2107
Subsample Factor: X1
Type of Sample: ROCK BASKET
Replicates: 3
Date Deployed: 7/16/2012
Date Retrieved: 8/14/2012

Classification Attainment

Statutory Class: C
Model Result with P>.6: A
Date Last Calculated: 1/18/2013
Final Determination: A
Reason for Determination: Model
Date: 1/22/2013
Comments:

Model Probabilities

<u>First Stage Model</u>				<u>C or Better Model</u>	
Class A	0.64	Class C	0.01	Class A, B, or C	1.00
Class B	0.34	NA	0.00	Non-Attainment	0.00
<u>B or Better Model</u>				<u>A Model</u>	
Class A or B		1.00		Class A	0.82
Class C or Non-Attainment		0.00		Class B or C or Non-Attainment	0.18

Model Variables

01 Total Mean Abundance	286.00	18 Relative Abundance Ephemeroptera	0.26
02 Generic Richness	67.00	19 EPT Generic Richness	25.00
03 Plecoptera Mean Abundance	3.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	17.96
04 Ephemeroptera Mean Abundance	73.67	23 Relative Generic Richness- Plecoptera	0.03
05 Shannon-Wiener Generic Diversity	4.84	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	33.86
06 Hilsenhoff Biotic Index	5.46	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	21.14
07 Relative Abundance - Chironomidae	0.29	28 EP Generic Richness/14	0.86
08 Relative Generic Richness Diptera	0.33	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	2.00		
11 <i>Cheumatopsyche</i> Abundance	1.33		
12 EPT Generic Richness/ Diptera	1.14		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family	3.67		
Functional Group)			
16 Tanypodinae Mean Abundance	16.26		
(Family Functional Group)			
17 Chironomini Abundance (Family	39.30		
Functional Group)			

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Girardia</i>	10.02
2	<i>Stenacron</i>	9.27
3	<i>Cricotopus</i>	7.23
4	<i>Amnicola</i>	6.41
5	<i>Maccaffertium</i>	6.34



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 27.8 deg C
Dissolved Oxygen: 9.1 mg/l
Specific Conductance: 78 uS/cm
Velocity: 10 cm/s
pH: 7.41
Wetted Width: 229 m
Bankfull Width: 332 m
Depth: 110 cm

Waterbody Information - Retrieval

Temperature: 24.7 deg C
Dissolved Oxygen: 7.4 mg/l
Specific Conductance: 73 uS/cm
Velocity: 8 cm/s
pH: 7.2
Wetted Width: 321 m
Bankfull Width: 332 m
Depth: 102 cm

Water Chemistry - 8/14/2012

Ammonia As Nitrogen	0.02 mg/l	Soluble Reactive Phosphorus	12 ug/l
Nitrate+nitrite As N	0.1 mg/l	Total Phosphorus	0.027 mg/l
Total Kjeldahl Nitrogen	0.3 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	5.1 mg/l	Total Dissolved Solids	44 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>
Regulated Flows	Below Dam	Boulder 20 %
	Below Point Source	Gravel 10 %
		Rubble/Cobble 60 %
		Sand 10 %

Landcover Summary - 2004 Data

Sample Comments

7/16/12: FISH OBSERVED. 7/16/12: PAPER MILL ODOR.



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Subsample Factor: X1

Replicates: 3

Calculated: 1/18/2013

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002	28.67	28.67		--	10.0	10.0
<i>Caecidotea</i>	09010101001	0.33	0.33	8	SH	0.1	0.1
<i>Orconectes</i>	09010301008		1.33		CG		0.5
<i>Orconectes limosus</i>	09010301008013	1.33			--	0.5	
Perlidae	09020209	0.67	0.67		--	0.2	0.2
<i>Acroneuria</i>	09020209042	0.67	3.00	0	PR	0.2	1.0
<i>Acroneuria lycorias</i>	09020209042125	0.67			--	0.2	
<i>Acroneuria mela</i>	09020209042126	1.67			--	0.6	
<i>Boyeria</i>	09020301004		0.67	2	PR		0.2
<i>Boyeria vinosa</i>	09020301004012	0.67			--	0.2	
Coenagrionidae	09020309	0.67	0.67		--	0.2	0.2
<i>Argia</i>	09020309048	2.67	3.00	7	PR	0.9	1.0
<i>Argia moesta</i>	09020309048096	0.33			--	0.1	
<i>Acerpenna</i>	09020401007	0.33	1.33	5	CG	0.1	0.5
<i>Acerpenna pygmaea</i>	09020401007011	1.00			--	0.3	
<i>Procloeon</i>	09020401010	1.00	1.00		CG	0.3	0.3
Heptageniidae	09020402	2.67			--	0.9	
<i>Leucrocuta</i>	09020402011	14.67	15.35	1	SC	5.1	5.4
<i>Stenacron</i>	09020402014	4.00	26.51	7	SC	1.4	9.3
<i>Stenacron interpunctatum</i>	09020402014045	21.33			--	7.5	
<i>Maccaffertium</i>	09020402015	1.33	18.14	4	SC	0.5	6.3
<i>Maccaffertium luteum</i>	09020402015049	5.33			--	1.9	
<i>Maccaffertium mediopunctatum</i>	09020402015050	0.33			--	0.1	
<i>Maccaffertium modestum</i>	09020402015051	10.33			--	3.6	
<i>Isonychia</i>	09020404018	0.67	0.67	2	CF	0.2	0.2
Leptophlebiidae	09020406	0.33	0.33		--	0.1	0.1
<i>Paraleptophlebia</i>	09020406026	0.33	0.33	1	CG	0.1	0.1
<i>Tricorythodes</i>	09020411038	9.67	9.67	4	CG	3.4	3.4
<i>Caenis</i>	09020412040	0.33	0.33	7	CG	0.1	0.1
<i>Chimarra</i>	09020601003		1.33	2	CF		0.5
<i>Chimarra obscura</i>	09020601003003	1.00			--	0.3	
<i>Chimarra socia</i>	09020601003004	0.33			--	0.1	
<i>Neureclipsis</i>	09020603008	2.67	2.67	7	CF	0.9	0.9
<i>Nyctiophylax</i>	09020603009		1.00	5	PR		0.3
<i>Nyctiophylax moestus</i>	09020603009013	1.00			--	0.3	
<i>Polycentropus</i>	09020603010	16.33	16.33	6	PR	5.7	5.7
<i>Cheumatopsyche</i>	09020604015	1.33	1.33	5	CF	0.5	0.5
<i>Hydropsyche</i>	09020604016	0.33	2.00	4	CF	0.1	0.7



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Calculated: 1/18/2013

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		Actual	Adjusted			Actual	Adjusted
<i>Hydropsyche morosa</i>	09020604016030	0.67			--	0.2	
<i>Hydropsyche phalerata</i>	09020604016047	1.00			--	0.3	
<i>Macrostemum</i>	09020604018		1.00	3	CF		0.3
<i>Macrostemum zebratum</i>	09020604018054	1.00			--	0.3	
<i>Pycnopsyche</i>	09020610049	1.33	1.33	4	SH	0.5	0.5
<i>Lepidostoma</i>	09020611064	5.67	5.67	1	SH	2.0	2.0
<i>Helicopsyche</i>	09020616070		4.33	3	SC		1.5
<i>Helicopsyche borealis</i>	09020616070137	4.33			--	1.5	
Leptoceridae	09020618	1.33			--	0.5	
<i>Ceraclea</i>	09020618072	1.67	2.57	3	CG	0.6	0.9
<i>Ceraclea sloossonae</i>	09020618072145	0.67			--	0.2	
<i>Triaenodes</i>	09020618077	0.67	0.74	6	SH	0.2	0.3
<i>Oecetis</i>	09020618078	1.00	11.03	8	PR	0.3	3.9
<i>Oecetis avara</i>	09020618078153	0.67			--	0.2	
<i>Oecetis persimilis</i>	09020618078157	8.33			--	2.9	
<i>Sialis</i>	09020702004	0.33	0.33	4	PR	0.1	0.1
<i>Parapoynx</i>	09020901002	1.00	1.00	5	SH	0.3	0.3
<i>Petrophila</i>	09020901004	0.33	0.33	5	SC	0.1	0.1
Chironomidae	09021011	1.33			--	0.5	
<i>Ablabesmyia</i>	09021011001		9.49	8	PR		3.3
<i>Ablabesmyia mallochii</i>	09021011001004	9.00			--	3.1	
<i>Ablabesmyia monilis</i>	09021011001009	0.33			--	0.1	
<i>Labrundinia</i>	09021011008		0.34	7	PR		0.1
<i>Labrundinia pilosella</i>	09021011008022	0.33			--	0.1	
<i>Paramerina</i>	09021011013	2.00	2.03		--	0.7	0.7
<i>Pentaneura</i>	09021011014		4.40	6	PR		1.5
<i>Pentaneura inconspicua</i>	09021011014028	4.33			--	1.5	
<i>Cricotopus</i>	09021011037	18.00	20.67	7	SH	6.3	7.2
<i>Cricotopus vierriensis</i>	09021011037071	2.33			--	0.8	
<i>Nanocladius</i>	09021011049		0.34	3	CG		0.1
<i>Nanocladius spinipennis</i>	09021011049090	0.33			--	0.1	
<i>Orthocladius</i>	09021011050	0.33	0.34	6	CG	0.1	0.1
<i>Synorthocladius</i>	09021011061	1.33	1.36	2	CG	0.5	0.5
<i>Thienemanniella</i>	09021011062		0.34	6	CG		0.1
<i>Thienemanniella lobapodema</i>	09021011062114	0.33			--	0.1	
<i>Tvetenia</i>	09021011065		0.34	5	CG		0.1
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.1	
<i>Rheotanytarsus</i>	09021011072	0.67	0.68	6	CF	0.2	0.2



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<i>Tanytarsus</i>	09021011076	2.33	2.37	6	CF	0.8	0.8
<i>Dicrotendipes</i>	09021011085		17.96	8	CG		6.3
<i>Dicrotendipes neomodestus</i>	09021011085152	17.67			--	6.2	
<i>Microtendipes</i>	09021011094		6.44	6	CF		2.3
<i>Microtendipes rydalsensis group</i>	09021011094168	6.33			--	2.2	
<i>Nilothauma</i>	09021011095	0.67	0.68	2	--	0.2	0.2
<i>Phaenopsectra</i>	09021011101		3.73	7	SC		1.3
<i>Phaenopsectra flavipes</i>	09021011101179	0.67			SC	0.2	
<i>Phaenopsectra obediens</i>	09021011101182	3.00			SC	1.0	
<i>Polypedilum</i>	09021011102		8.47	6	SH		3.0
<i>Polypedilum flavum</i>	09021011102182	6.33			--	2.2	
<i>Polypedilum illinoense group</i>	09021011102185	1.67			--	0.6	
<i>Polypedilum ontario</i>	09021011102194	0.33			--	0.1	
<i>Tribelos</i>	09021011107		2.03	5	CG		0.7
<i>Tribelos jucundum</i>	09021011107198	2.00			--	0.7	
<i>Xestochironomus</i>	09021011143	0.33	0.34		PR	0.1	0.1
<i>Simulium</i>	09021012047		0.33	4	CF		0.1
<i>Simulium fibrinflatum</i>	09021012047059				--		
<i>Simulium jenningsi</i>	09021012047060				--		
<i>Simulium jenningsi complex</i>	09021012047070	0.33			CF	0.1	
Empididae	09021016	0.33	0.33	6	--	0.1	0.1
<i>Hemerodromia</i>	09021016057	0.33	0.33	3	PR	0.1	0.1
<i>Dineutus</i>	09021104032	0.33	0.33	2	--	0.1	0.1
<i>Psephenus</i>	09021108058		5.33	4	SC		1.9
<i>Psephenus herricki</i>	09021108058028	5.33			--	1.9	
<i>Macronychus</i>	09021113065		0.67	4	--		0.2
<i>Macronychus glabratus</i>	09021113065040	0.67			--	0.2	
<i>Promoresia</i>	09021113069		2.00		--		0.7
<i>Promoresia elegans</i>	09021113069051	2.00			--	0.7	
<i>Stenelmis</i>	09021113070		0.33	5	SC		0.1
<i>Stenelmis musgravei</i>	09021113070060	0.33			--	0.1	
<i>Amnicola</i>	10010104013		18.33		SC		6.4
<i>Amnicola limosa</i>	10010104013018	18.33			--	6.4	
<i>Physa</i>	10010202026	0.33	0.33		SC	0.1	0.1
<i>Gyraulus</i>	10010203029		0.33		SC		0.1
<i>Gyraulus circumstriatus</i>	10010203029054	0.33			--	0.1	
<i>Ferrissia</i>	10010204035		0.33		SC		0.1
<i>Ferrissia rivularis</i>	10010204035066	0.33			--	0.1	



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Sphaeriidae	10020201	1.67			CF	0.6	
<i>Musculium</i>	10020201001		8.86		CF		3.1
<i>Musculium securis</i>	10020201001003	7.33			CF	2.6	
<i>Pisidium</i>	10020201002		0.81		CF		0.3
<i>Pisidium casertanum</i>	10020201002006	0.67			CF	0.2	