



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

Station Information

Station Number: S-1147	River Basin:	Kennebec
Waterbody: Hall Brook - Station 1147	HUC8 Name:	Lower Kennebec
Town: Thorndike	Latitude:	44 34 55.67 N
Directions: ABOVE RT. 220 IN THORNDIKE. BELOW GRAVEL ROAD AND SALT PILE. BELOW MDOT BRIDGE # 2716	Longitude:	69 16 43.72 W
	Stream Order:	2

Sample Information

Log Number: 2758	Type of Sample:	ROCK BAG	Date Deployed:	7/24/2019
Subsample Factor: X1	Replicates:	3	Date Retrieved:	8/21/2019

Classification Attainment

Statutory Class: A	Final Determination: A	Date:	1/4/2021
Model Result with $P \geq 0.6$: A	Reason for Determination: Model		
Date Last Calculated: 12/23/2020	Comments:		

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.59	Class A, B, or C	1.00
Class B	0.36	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.92
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.08

Model Variables

01 Total Mean Abundance	172.67	18 Relative Abundance Ephemeroptera	0.28
02 Generic Richness	54.00	19 EPT Generic Richness	21.00
03 Plecoptera Mean Abundance	0.67	21 Sum of Abundances: <i>Dicrotendipes, Micropsectra, Parachironomus, Helobdella</i>	1.33
04 Ephemeroptera Mean Abundance	48.33	23 Relative Generic Richness- Plecoptera	0.04
05 Shannon-Wiener Generic Diversity	4.53	25 Sum of Abundances: <i>Cheumatopsyche, Cricotopus, Tanytarsus, Ablabesmyia</i>	14.67
06 Hilsenhoff Biotic Index	4.92	26 Sum of Abundances: <i>Acroneuria, Maccaffertium, Stenonema</i>	27.33
07 Relative Abundance - Chironomidae	0.36	28 EP Generic Richness/14	0.93
08 Relative Generic Richness Diptera	0.37	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	1.00		
11 <i>Cheumatopsyche</i> Abundance	1.33		
12 EPT Generic Richness/ Diptera Generic Richness	1.05		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	0.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	5.00		
17 Chironomini Abundance (Family Functional Group)	15.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Maccaffertium</i>	15.64
2	<i>Paratanytarsus</i>	11.97
3	<i>Ferrissia</i>	9.46
4	<i>Dubiraphia</i>	8.30
5	<i>Cricotopus</i>	5.41



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 18.8 deg C
Dissolved Oxygen: 9.97 mg/l
Dissolved Oxygen Saturation: 106.4 %
Specific Conductance: 148.2 uS/cm
Velocity: 3 cm/s
pH: 7.87
Wetted Width: 5.9 m
Bankfull Width: 6.6 m
Depth: 32 cm

Waterbody Information - Retrieval

Temperature: 17.3 deg C
Dissolved Oxygen: 10.29 mg/l
Dissolved Oxygen Saturation: 106.3 %
Specific Conductance: 144.2 uS/cm
Velocity: 1.5 cm/s
pH: 7.86
Wetted Width: 6 m
Bankfull Width: 6.6 m
Depth: 33 cm

Water Chemistry - 6/26/2019

Nitrate + Nitrite As Nitrogen	0.04 mg/l	Nitrate As Nitrogen	0.04 mg/l
Nitrite As Nitrogen	<0.01 mg/l	Orthophosphate As Phosphorus	6 ug/l
Total Alkalinity	45 mg/l	Total Kjeldahl Nitrogen (organic A	0.3 mg/l
Total Phosphorus Mixed Forms (po	23 ug/l		

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Cultivated	Partly Open	Rolling	
Pasture			
Swamp Hardwood			
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Chlorine	Above Road Crossing	Boulder	10 %
Nps Pollution		Gravel	5 %
		Rubble/Cobble	45 %
		Sand	40 %

Landcover Summary - 2004 Data

Sample Comments

FROGS PRESENT.



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Subsample Factor: X1

Replicates: 3

Calculated: 12/23/2020

Taxon	Maine Taxonomic Code	Count		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		(Mean of Samplers)				Actual	Adjusted
		Actual	Adjusted				
<i>Girardia</i>	03010102002	0.33	0.33		--	0.2	0.2
<i>Nais</i>	08020202009	0.33	0.33		CG	0.2	0.2
<i>Hyaella</i>	09010203006	0.33	0.33	8	CG	0.2	0.2
<i>Leuctra</i>	09020204020	0.33	0.33	0	SH	0.2	0.2
<i>Acroneuria</i>	09020209042		0.33	0	PR		0.2
<i>Acroneuria abnormis</i>	09020209042121	0.33		0	PR	0.2	
<i>Boyeria</i>	09020301004	0.33	2.33	2	PR	0.2	1.4
<i>Boyeria grafiana</i>	09020301004011	0.67			--	0.4	
<i>Boyeria vinosa</i>	09020301004012	1.33			--	0.8	
<i>Baetis</i>	09020401001		0.67	4	CG		0.4
<i>Baetis flavistriga</i>	09020401001004	0.67			--	0.4	
<i>Acerpenna</i>	09020401007		1.33	5	CG		0.8
<i>Acerpenna macdunnoughi</i>	09020401007001	1.33			--	0.8	
<i>Labiobaetis</i>	09020401009	0.33	0.33		--	0.2	0.2
<i>Procloeon</i>	09020401010	4.67	4.67		CG	2.7	2.7
<i>Leucrocuta</i>	09020402011	1.33	1.33	1	SC	0.8	0.8
<i>Stenacron</i>	09020402014		6.33	7	SC		3.7
<i>Stenacron interpunctatum</i>	09020402014045	6.33			--	3.7	
<i>Maccaffertium</i>	09020402015	17.33	27.00	4	SC	10.0	15.6
<i>Maccaffertium vicarium</i>	09020402015055	9.67			--	5.6	
<i>Paraleptophlebia</i>	09020406026	5.33	5.33	1	CG	3.1	3.1
<i>Ephemerella</i>	09020410035	0.33	0.33	1	CG	0.2	0.2
<i>Eurylophella</i>	09020410036	0.67	0.67	3	CG	0.4	0.4
<i>Tricorythodes</i>	09020411038	0.33	0.33	4	CG	0.2	0.2
<i>Cernotina</i>	09020603006	0.33	0.33		PR	0.2	0.2
<i>Polycentropus</i>	09020603010	6.00	6.00	6	PR	3.5	3.5
<i>Cheumatopsyche</i>	09020604015	1.33	1.33	5	CF	0.8	0.8
<i>Hydropsyche</i>	09020604016	0.33	1.00	4	CF	0.2	0.6
<i>Hydropsyche scalaris species group</i>	09020604016048	0.67			--	0.4	
<i>Rhyacophila</i>	09020605019	0.67	0.67	2	PR	0.4	0.4
<i>Pycnopsyche</i>	09020610049	0.67	0.67	4	SH	0.4	0.4
<i>Helicopsyche</i>	09020616070		0.67	3	SC		0.4
<i>Helicopsyche borealis</i>	09020616070137	0.67			--	0.4	
<i>Apatania</i>	09020619061	3.00	3.00		SC	1.7	1.7
<i>Nigronia</i>	09020701003		5.33	0	PR		3.1
<i>Nigronia serricornis</i>	09020701003003	5.33			--	3.1	
Chironomidae	09021011				--		



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		Actual	Adjusted			Actual	Adjusted
<i>Thienemannimyia</i>	09021011020		4.33	3	PR		2.5
<i>Thienemannimyia group</i>	09021011020041	4.33			--	2.5	
<i>Trissopelopia</i>	09021011021		0.67		PR		0.4
<i>Trissopelopia ogemawi</i>	09021011021042	0.67			--	0.4	
<i>Brillia</i>	09021011033	1.00	1.00	5	SH	0.6	0.6
<i>Cricotopus</i>	09021011037		9.33	7	SH		5.4
<i>Cricotopus bicinctus</i>	09021011037057	9.33			--	5.4	
<i>Nanocladius</i>	09021011049	1.00	1.00	3	CG	0.6	0.6
<i>Orthocladius</i>	09021011050		1.67	6	CG		1.0
<i>Orthocladius annectens</i>	09021011050092	1.33			--	0.8	
<i>Orthocladius lignicola</i>	09021011050100	0.33			--	0.2	
<i>Parametriocnemus</i>	09021011053	0.33	0.33	5	CG	0.2	0.2
<i>Synorthocladius</i>	09021011061	0.33	0.33	2	CG	0.2	0.2
<i>Thienemanniella</i>	09021011062	0.33	0.33	6	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		0.33	5	CG		0.2
<i>Tvetenia paucunca</i>	09021011065114	0.33			--	0.2	
<i>Micropsectra</i>	09021011070	0.67	0.67	7	CG	0.4	0.4
<i>Paratanytarsus</i>	09021011071	20.67	20.67	6	--	12.0	12.0
<i>Rheotanytarsus</i>	09021011072		2.67	6	CF		1.5
<i>Rheotanytarsus exiguus group</i>	09021011072127	2.00			CF	1.2	
<i>Rheotanytarsus pellucidus</i>	09021011072128	0.67			CF	0.4	
<i>Stempellinella</i>	09021011074	0.33	0.33	2	--	0.2	0.2
<i>Tanytarsus</i>	09021011076	4.00	4.00	6	CF	2.3	2.3
<i>Dicrotendipes</i>	09021011085	0.67	0.67	8	CG	0.4	0.4
<i>Microtendipes</i>	09021011094		0.33	6	CF		0.2
<i>Microtendipes rydalensis group</i>	09021011094168	0.33			--	0.2	
<i>Phaenopsectra</i>	09021011101	6.33	6.33	7	SC	3.7	3.7
<i>Polypedilum</i>	09021011102		7.67	6	SH		4.4
<i>Polypedilum aviceps</i>	09021011102181	0.33			--	0.2	
<i>Polypedilum fallax group</i>	09021011102183	0.33			--	0.2	
<i>Polypedilum illinoense group</i>	09021011102185	0.33			--	0.2	
<i>Polypedilum scalaenum group</i>	09021011102189	0.33			--	0.2	
<i>Polypedilum tritum</i>	09021011102191	6.33			--	3.7	
<i>Atherix</i>	09021015055	1.33	1.33	2	PR	0.8	0.8
<i>Psephenus</i>	09021108058		0.67	4	SC		0.4
<i>Psephenus herricki</i>	09021108058028	0.67			--	0.4	
<i>Dubiraphia</i>	09021113064		14.33	6	--		8.3
<i>Dubiraphia quadrinotata</i>	09021113064037	14.33			--	8.3	



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<i>Optioservus</i>	09021113067	0.67	0.67	3	SC	0.4	0.4
<i>Promoresia</i>	09021113069		2.00		--		1.2
<i>Promoresia tardella</i>	09021113069052	2.00			--	1.2	
Acariformes	090301	1.33	1.33		--	0.8	0.8
<i>Gyraulus</i>	10010203029	0.67	0.67		SC	0.4	0.4
<i>Helisoma</i>	10010203030		1.33		SC		0.8
<i>Helisoma anceps</i>	10010203030058	1.33			--	0.8	
<i>Ferrissia</i>	10010204035	14.00	16.33		SC	8.1	9.5
<i>Ferrissia rivularis</i>	10010204035066	2.33			--	1.4	