



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

**Station Information**

<b>Station Number:</b> S-425	River Basin: Kennebec
Waterbody: Mill Stream - Station 425	HUC8 Name: Lower Kennebec
Town: Embden	Latitude: 44 54 45.74 N
Directions: 150M UPSTREAM OF HATCHERY DISCHARGE	Longitude: 69 56 25.21 W
	Stream Order: 3

**Sample Information**

<b>Log Number:</b> 2554	Type of Sample: ROCK BAG	Date Deployed: 7/10/2017
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/7/2017

**Classification Attainment**

<b>Statutory Class:</b> B	<b>Final Determination:</b> A	Date: 10/24/2018
Model Result with $P \geq 0.6$ : A	<b>Reason for Determination:</b> Model	
Date Last Calculated: 10/23/2018	Comments:	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.77	Class A, B, or C	1.00
Class B	0.23	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.97
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.03

**Model Variables**

01 Total Mean Abundance	146.33	18 Relative Abundance Ephemeroptera	0.07
02 Generic Richness	30.00	19 EPT Generic Richness	15.00
03 Plecoptera Mean Abundance	20.67	21 Sum of Abundances: <i>Dicrotendipes, Micropsectra, Parachironomus, Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	10.33	23 Relative Generic Richness- Plecoptera	0.10
05 Shannon-Wiener Generic Diversity	3.02	25 Sum of Abundances: <i>Cheumatopsyche, Cricotopus, Tanytarsus, Ablabesmyia</i>	24.33
06 Hilsenhoff Biotic Index	3.80	26 Sum of Abundances: <i>Acroneuria, Maccaffertium, Stenonema</i>	12.67
07 Relative Abundance - Chironomidae	0.07	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.27	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	66.00		
11 <i>Cheumatopsyche</i> Abundance	23.67		
12 EPT Generic Richness/ Diptera Generic Richness	1.88		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	20.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	0.67		
17 Chironomini Abundance (Family Functional Group)	4.00		

**Five Most Dominant Taxa**

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	45.10
2	<i>Cheumatopsyche</i>	16.17
3	<i>Acroneuria</i>	7.29
4	<i>Paragnetina</i>	6.61
5	<i>Polypedilum</i>	2.73



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Town: Embden  
Waterbody: Mill Stream - Station 425

Date Deployed: 7/10/2017  
Date Retrieved: 8/7/2017

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

**Waterbody Information - Deployment**

Temperature: 22.8 deg C  
Dissolved Oxygen: 9.72 mg/l  
Dissolved Oxygen Saturation: 113 %  
Specific Conductance: 28.6 uS/cm  
Velocity: 45.72 cm/s  
pH: 7.47  
Wetted Width: 5.6 m  
Bankfull Width: 7 m  
Depth: 35 cm

**Waterbody Information - Retrieval**

Temperature: 23 deg C  
Dissolved Oxygen: 9.88 mg/l  
Dissolved Oxygen Saturation: 115.2 %  
Specific Conductance: 29.2 uS/cm  
Velocity: 30.48 cm/s  
pH: 7.62  
Wetted Width: 4.9 m  
Bankfull Width: 7 m  
Depth: 27 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Swamp Conifer	Partly Open	Rolling	
Upland Conifer			
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Lake Outlet	Above Fish Hatchery	Boulder	30 %
	Lake Outlet	Gravel	5 %
		Rubble/Cobble	65 %

**Landcover Summary - 2004 Data**

**Sample Comments**



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**Station Number: S-425**

Waterbody: Mill Stream - Station 425

Town: Embden

**Log Number: 2554**

Subsample Factor: X1

Replicates: 3

Calculated: 10/23/2018

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Cambaridae	09010301	0.33	0.33		--	0.2	0.2
<i>Pteronarcys</i>	09020205023	0.33	0.33	0	SH	0.2	0.2
<i>Acroneuria</i>	09020209042	1.00	10.67	0	PR	0.7	7.3
<i>Acroneuria abnormis</i>	09020209042121	9.33		0	PR	6.4	
<i>Acroneuria lycorias</i>	09020209042125	0.33			--	0.2	
<i>Paragnetina</i>	09020209049		9.67	1	PR		6.6
<i>Paragnetina media</i>	09020209049151	9.67			--	6.6	
<i>Boyeria</i>	09020301004	0.67	0.67	2	PR	0.5	0.5
<i>Baetis</i>	09020401001		1.33	4	CG		0.9
<i>Baetis intercalaris</i>	09020401001008	1.00			--	0.7	
<i>Baetis pluto</i>	09020401001009	0.33			--	0.2	
<i>Acerpenna</i>	09020401007		0.33	5	CG		0.2
<i>Acerpenna pygmaea</i>	09020401007011	0.33			--	0.2	
<i>Epeorus</i>	09020402009		2.00	0	SC		1.4
<i>Epeorus vitreus</i>	09020402009033	2.00			--	1.4	
<i>Stenacron</i>	09020402014	2.00	2.00	7	SC	1.4	1.4
<i>Maccaffertium</i>	09020402015	1.33	2.00	4	SC	0.9	1.4
<i>Maccaffertium vicarium</i>	09020402015055	0.67			--	0.5	
<i>Ephemerella</i>	09020410035	0.33	0.33	1	CG	0.2	0.2
<i>Serratella</i>	09020410037		2.33	2	CG		1.6
<i>Serratella serratoides</i>	09020410037124	2.33			--	1.6	
<i>Neureclipsis</i>	09020603008	3.33	3.33	7	CF	2.3	2.3
<i>Cheumatopsyche</i>	09020604015	23.67	23.67	5	CF	16.2	16.2
<i>Hydropsyche</i>	09020604016	8.33	66.00	4	CF	5.7	45.1
<i>Hydropsyche morosa</i>	09020604016030	9.33			--	6.4	
<i>Hydropsyche sparna</i>	09020604016032	6.33			--	4.3	
<i>Hydropsyche betteni</i>	09020604016037	42.00			--	28.7	
<i>Rhyacophila</i>	09020605019	0.33	0.33	2	PR	0.2	0.2
<i>Oecetis</i>	09020618078	1.00	1.00	8	PR	0.7	0.7
<i>Thienemannimyia</i>	09021011020		0.67	3	PR		0.5
<i>Thienemannimyia group</i>	09021011020041	0.67			--	0.5	
<i>Cricotopus</i>	09021011037		0.67	7	SH		0.5
<i>Cricotopus bicinctus</i>	09021011037057	0.67			--	0.5	
<i>Nanocladius</i>	09021011049	0.33	0.33	3	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		3.33	5	CG		2.3
<i>Tvetenia vitracies</i>	09021011065113	3.33			--	2.3	
<i>Rheotanytarsus</i>	09021011072		1.00	6	CF		0.7



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<i>Rheotanytarsus exiguus group</i>	09021011072127	1.00			CF	0.7	
<i>Polypedilum</i>	09021011102		4.00	6	SH		2.7
<i>Polypedilum aviceps</i>	09021011102181	3.33			--	2.3	
<i>Polypedilum flavum</i>	09021011102182	0.67			--	0.5	
<i>Simulium</i>	09021012047	3.33	3.33	4	CF	2.3	2.3
<i>Atherix</i>	09021015055	0.33	0.33	2	PR	0.2	0.2
<i>Dineutus</i>	09021104032	0.33	0.33	2	--	0.2	0.2
<i>Psephenus</i>	09021108058		0.67	4	SC		0.5
<i>Psephenus herricki</i>	09021108058028	0.67			--	0.5	
<i>Promoresia</i>	09021113069		1.67		--		1.1
<i>Promoresia elegans</i>	09021113069051	1.67			--	1.1	
<i>Stenelmis</i>	09021113070	3.33	3.33	5	SC	2.3	2.3
<i>Ferrissia</i>	10010204035	0.33	0.33		SC	0.2	0.2