



**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> 2479	Type of Sample: ROCK BAG	Date Deployed: 7/14/2016
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/11/2016

**Classification Attainment**

<b>Statutory Class:</b> B	<b>Final Determination:</b> B	Date: 8/31/2017
Model Result with $P \geq 0.6$ : C	<b>Reason for Determination: Best Professional Judgement</b>	
Date Last Calculated: 8/30/2017	Comments: Lake Outlet Effect. Raised finding from Indeterminate Class B (.52) to Class B.	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.07	Class A, B, or C	1.00
Class B	0.65	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.52	Class A	0.02
Class C or Non-Attainment	0.48	Class B or C or Non-Attainment	0.98

**Model Variables**

01 Total Mean Abundance	1169.33	18 Relative Abundance Ephemeroptera	0.02
02 Generic Richness	31.00	19 EPT Generic Richness	13.00
03 Plecoptera Mean Abundance	12.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	20.00	23 Relative Generic Richness- Plecoptera	0.06
05 Shannon-Wiener Generic Diversity	3.00	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	200.00
06 Hilsenhoff Biotic Index	4.85	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	20.00
07 Relative Abundance - Chironomidae	0.17	28 EP Generic Richness/14	0.50
08 Relative Generic Richness Diptera	0.29	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	473.33		
11 <i>Cheumatopsyche</i> Abundance	186.67		
12 EPT Generic Richness/ Diptera Generic Richness	1.44		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	12.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	6.67		
17 Chironomini Abundance (Family Functional Group)	48.00		

**Five Most Dominant Taxa**

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	40.48
2	<i>Cheumatopsyche</i>	15.96
3	<i>Rheotanytarsus</i>	8.78
4	<i>Neureclipsis</i>	8.44
5	<i>Oecetis</i>	6.04



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**Station Number: S-425**      Town:      Embden      Date Deployed: 7/14/2016  
**Log Number: 2479**      Waterbody: Mill Stream - Station 425      Date Retrieved: 8/11/2016

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT      Taxonomist: MICHAEL COLE

**Waterbody Information - Deployment**

Temperature:                      23.2 deg C  
Dissolved Oxygen:                9.58 mg/l  
Dissolved Oxygen Saturation:    114 %  
Specific Conductance:            29.2 uS/cm  
Velocity:                            12.2 cm/s  
pH:                                  7.61  
Wetted Width:                      5 m  
Bankfull Width:                    6.7 m  
Depth:                                28 cm

**Waterbody Information - Retrieval**

Temperature:                      24.4 deg C  
Dissolved Oxygen:                9.42 mg/l  
Dissolved Oxygen Saturation:    114 %  
Specific Conductance:            29.7 uS/cm  
Velocity:                            18.288 cm/s  
pH:                                  7.56  
Wetted Width:                      4.9 m  
Bankfull Width:                    6.7 m  
Depth:                                22 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**

HATCHERY RAISES ABOUT 300,000 FISH PER YEAR, BROOK TROUT AND SALMON; SUPPLIES ABOUT 1/3 OF THE STATE.  
MANY BLOWDOWNS DOWNSTREAM.



**Maine Department of Environmental Protection  
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Aquatic Life Taxonomic Inventory Report**

**Station Number: S-425**

Waterbody: Mill Stream - Station 425

Town: Embden

**Log Number: 2479**

Subsample Factor: X4

Replicates: 3

Calculated: 8/30/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Stylaria</i>	08020202014	1.33	1.33		CG	0.1	0.1
Perlidae	09020209	4.00			--	0.3	
<i>Acroneuria</i>	09020209042		8.00	0	PR		0.7
<i>Acroneuria abnormis</i>	09020209042121	5.33		0	PR	0.5	
<i>Paragnetina</i>	09020209049		4.00	1	PR		0.3
<i>Paragnetina media</i>	09020209049151	2.67			--	0.2	
<i>Boyeria</i>	09020301004		2.67	2	PR		0.2
<i>Boyeria grafiana</i>	09020301004011	2.67			--	0.2	
<i>Calopteryx</i>	09020307043	2.67	2.67	5	PR	0.2	0.2
<i>Argia</i>	09020309048	1.33	1.33	7	PR	0.1	0.1
<i>Baetis</i>	09020401001		1.33	4	CG		0.1
<i>Baetis flavistriga</i>	09020401001004	1.33			--	0.1	
<i>Acerpenna</i>	09020401007	1.33	1.33	5	CG	0.1	0.1
<i>Maccaffertium</i>	09020402015	10.67	12.00	4	SC	0.9	1.0
<i>Maccaffertium vicarium</i>	09020402015055	1.33			--	0.1	
<i>Isonychia</i>	09020404018	1.33	1.33	2	CF	0.1	0.1
<i>Ephemerella</i>	09020410035	4.00	4.00	1	CG	0.3	0.3
<i>Chimarra</i>	09020601003		8.00	2	CF		0.7
<i>Chimarra obscura</i>	09020601003003	8.00			--	0.7	
<i>Neureclipsis</i>	09020603008	98.67	98.67	7	CF	8.4	8.4
<i>Cheumatopsyche</i>	09020604015	186.67	186.67	5	CF	16.0	16.0
<i>Hydropsyche</i>	09020604016	177.33	473.33	4	CF	15.2	40.5
<i>Hydropsyche morosa</i>	09020604016030	69.33			--	5.9	
<i>Hydropsyche sparna</i>	09020604016032	30.67			--	2.6	
<i>Hydropsyche betteni</i>	09020604016037	196.00			--	16.8	
<i>Macrostemum</i>	09020604018	61.33	61.33	3	CF	5.2	5.2
Leptoceridae	09020618				--		
<i>Oecetis</i>	09020618078		70.67	8	PR		6.0
<i>Oecetis persimilis</i>	09020618078157	70.67			--	6.0	
<i>Nigronia</i>	09020701003		4.00	0	PR		0.3
<i>Nigronia serricornis</i>	09020701003003	4.00			--	0.3	
Chironomidae	09021011				--		
<i>Nilotanytus</i>	09021011012		6.67	6	PR		0.6
<i>Nilotanytus fimbriatus</i>	09021011012027	6.67			--	0.6	
<i>Cricotopus</i>	09021011037	6.67	13.33	7	SH	0.6	1.1
<i>Cricotopus bicinctus</i>	09021011037057	6.67			--	0.6	
<i>Rheocricotopus</i>	09021011057	1.33	1.33	6	CG	0.1	0.1



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<i>Synorthocladius</i>	09021011061	2.67	2.67	2	CG	0.2	0.2
<i>Tvetenia</i>	09021011065		29.33	5	CG		2.5
<i>Tvetenia vitracies</i>	09021011065113	29.33			--	2.5	
<i>Rheotanytarsus</i>	09021011072		102.67	6	CF		8.8
<i>Rheotanytarsus exiguus group</i>	09021011072127	85.33			CF	7.3	
<i>Rheotanytarsus pellucidus</i>	09021011072128	17.33			CF	1.5	
<i>Polypedilum</i>	09021011102		48.00	6	SH		4.1
<i>Polypedilum aviceps</i>	09021011102181	48.00			--	4.1	
<i>Simulium</i>	09021012047	5.33	5.33	4	CF	0.5	0.5
<i>Hemerodromia</i>	09021016057	9.33	9.33	3	PR	0.8	0.8
<i>Gyrinus</i>	09021104033	1.33	1.33	2	PR	0.1	0.1
<i>Psephenus</i>	09021108058		1.33	4	SC		0.1
<i>Psephenus herricki</i>	09021108058028	1.33			--	0.1	
<i>Menetus</i>	10010203031		2.67		--		0.2
<i>Menetus dilatatus</i>	10010203031059	2.67			--	0.2	
<i>Ferrissia</i>	10010204035	2.67	2.67		SC	0.2	0.2