



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

Station Information

Station Number: 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

Log Number: 2909	Type of Sample:	ROCK BAG	Date Deployed:	7/12/2021
Subsample Factor: X1	Replicates:	3	Date Retrieved:	8/13/2021

Classification Attainment

Statutory Class: B	Final Determination: C	Date:	1/13/2023
Model Result with $P \geq 0.6$: C	Reason for Determination: Model		
Date Last Calculated: 5/3/2022	Comments:		

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.29	Class C	0.30
Class B	0.41	NA	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B		Class A	0.15
Class C or Non-Attainment	0.65	Class B or C or Non-Attainment	0.85

Model Variables

01 Total Mean Abundance	75.00	18 Relative Abundance Ephemeroptera	0.15
02 Generic Richness	39.00	19 EPT Generic Richness	13.00
03 Plecoptera Mean Abundance	0.67	21 Sum of Abundances: <i>Dicrotendipes, Micropsectra, Parachironomus, Helobdella</i>	0.67
04 Ephemeroptera Mean Abundance	11.00	23 Relative Generic Richness- Plecoptera	0.03
05 Shannon-Wiener Generic Diversity	4.61	25 Sum of Abundances: <i>Cheumatopsyche, Cricotopus, Tanytarsus, Ablabesmyia</i>	11.11
06 Hilsenhoff Biotic Index	5.66	26 Sum of Abundances: <i>Acroneuria, Maccaffertium, Stenonema</i>	1.33
07 Relative Abundance - Chironomidae	0.38	28 EP Generic Richness/14	0.50
08 Relative Generic Richness Diptera	0.28	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	0.33		
11 <i>Cheumatopsyche</i> Abundance	1.67		
12 EPT Generic Richness/ Diptera Generic Richness	1.18		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Psectrocladius</i>	13.49
2	<i>Stylaria</i>	10.22
3	<i>Slavina</i>	8.00
4	<i>Cricotopus</i>	5.85
5	<i>Thienemannimyia</i>	4.95



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Station Number: S-425 Town: Embden Date Deployed: 7/12/2021
Log Number: 2909 Waterbody: Mill Stream - Station 425 Date Retrieved: 8/13/2021

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 24.1 deg C
Dissolved Oxygen: 9.61 mg/l
Dissolved Oxygen Saturation: 114.6 %
Specific Conductance: 30.6 uS/cm
Velocity: 2.03 cm/s
pH: 8.22
Wetted Width: 5.94 m
Bankfull Width: 7.78 m
Depth: 28 cm

Waterbody Information - Retrieval

Temperature: 24.7 deg C
Dissolved Oxygen: 9.6 mg/l
Dissolved Oxygen Saturation: 116.5 %
Specific Conductance: 30.5 uS/cm
Velocity: cm/s
pH: 6.42
Wetted Width: 5.2 m
Bankfull Width: 7.78 m
Depth: 25 cm

Water Chemistry - 7/12/2021

Nitrate + Nitrite As Nitrogen	<0.01 mg/l	Nitrate As Nitrogen	<0.01 mg/l
Nitrite As Nitrogen	<0.01 mg/l	Orthophosphate As Phosphorus	1 ug/l
Total Kjeldahl Nitrogen (organic A	<0.3 mg/l	Total Phosphorus Mixed Forms (po	3 ug/l

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Partly Open	Flat
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Lake Outlet	Above Fish Hatchery	Boulder 35 % Clay 5 % Gravel 15 % Rubble/Cobble 35 % Sand 10 %

Landcover Summary - 2004 Data

Total Area (ac)	14930	High Int. Dev. %	2.4	Water %	13.2	Non-vegetated %	0.1
		Med Int. Dev. %	0.1	Wetland %	1.1	Tilled Agriculture %	0.0
		Low Int. Dev. %	0.4	Upland Woody %	82.5	Grassland %	0.0
		Development %	2.9	Natural %	83.8	Human Altered %	3.0
						Impervious %	1.2
Total Land (ac)	12962	High Int. Dev. %	2.8	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.1	Wetland %	1.3	Tilled Agriculture %	0.0
		Low Int. Dev. %	0.1	Upland Woody %	95.1	Grassland %	0.0
		Development %	3.4	Natural %	96.5	Human Altered %	3.4
						Impervious %	1.4

Sample Comments

VISIBLE FLOW



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Aquatic Life Taxonomic Inventory Report**

Station Number: S-425

Waterbody: Mill Stream - Station 425

Town: Embden

Log Number: 2909

Subsample Factor: X1

Replicates: 3

Calculated: 5/3/2022

Taxon	Maine Taxonomic Code	Count		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		(Mean of Samplers)				Actual	Adjusted
		Actual	Adjusted				
<i>Prostoma</i>	04010101001	0.67	0.67		--	0.9	0.9
<i>Dero</i>	08020202007	0.33	0.33		CG	0.4	0.4
<i>Nais</i>	08020202009	2.67	2.67		CG	3.6	3.6
<i>Slavina</i>	08020202012		6.00		--		8.0
<i>Slavina appendiculata</i>	08020202012001	6.00			--	8.0	
<i>Stylaria</i>	08020202014	7.67	7.67		CG	10.2	10.2
<i>Helobdella</i>	08030101005		0.67		--		0.9
<i>Helobdella stagnalis complex</i>	08030101005004	0.67			--	0.9	
Cambaridae	09010301	0.33	0.33		--	0.4	0.4
<i>Acroneuria</i>	09020209042		0.67	0	PR		0.9
<i>Acroneuria abnormis</i>	09020209042121	0.67		0	PR	0.9	
<i>Boyeria</i>	09020301004		3.00	2	PR		4.0
<i>Boyeria vinosa</i>	09020301004012	3.00			--	4.0	
<i>Argia</i>	09020309048	2.33	2.33	7	PR	3.1	3.1
Baetidae	09020401	0.33	0.33		--	0.4	0.4
<i>Centroptilum</i>	09020401003	2.67	2.67	2	CG	3.6	3.6
<i>Stenacron</i>	09020402014	3.00	3.00	7	SC	4.0	4.0
<i>Maccaffertium</i>	09020402015		0.67	4	SC		0.9
<i>Maccaffertium modestum</i>	09020402015051	0.33			--	0.4	
<i>Maccaffertium vicarium</i>	09020402015055	0.33			--	0.4	
<i>Eurylophella</i>	09020410036	3.33	3.33	3	CG	4.4	4.4
<i>Caenis</i>	09020412040	1.00	1.00	7	CG	1.3	1.3
<i>Cheumatopsyche</i>	09020604015	1.67	1.67	5	CF	2.2	2.2
<i>Hydropsyche</i>	09020604016		0.33	4	CF		0.4
<i>Hydropsyche betteni</i>	09020604016037	0.33			--	0.4	
<i>Hydroptila</i>	09020607026	0.67	0.67	6	P	0.9	0.9
<i>Micrasema</i>	09020609044	0.33	0.33	2	SH	0.4	0.4
<i>Pycnopsyche</i>	09020610049	0.33	0.33	4	SH	0.4	0.4
<i>Oecetis</i>	09020618078		3.33	8	PR		4.4
<i>Oecetis persimilis</i>	09020618078157	3.33			--	4.4	
<i>Nigronia</i>	09020701003		0.33	0	PR		0.4
<i>Nigronia serricornis</i>	09020701003003	0.33			--	0.4	
<i>Tipula</i>	09021001002	0.67	0.67	4	SH	0.9	0.9
Chironomidae	09021011	0.33			--	0.4	
<i>Ablabesmyia</i>	09021011001	3.00	3.04	8	PR	4.0	4.0
<i>Nilotanytus</i>	09021011012		0.67	6	PR		0.9
<i>Nilotanytus fimbriatus</i>	09021011012027	0.67			--	0.9	



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		Actual	Adjusted			Actual	Adjusted
<i>Thienemannimyia</i>	09021011020		3.71	3	PR		4.9
<i>Thienemannimyia group</i>	09021011020041	3.67			--	4.9	
<i>Cricotopus</i>	09021011037	0.67	4.38	7	SH	0.9	5.8
<i>Cricotopus bicinctus</i>	09021011037057	3.67			--	4.9	
<i>Nanocladius</i>	09021011049	1.67	1.69	3	CG	2.2	2.2
<i>Psectrocladius</i>	09021011056	10.00	10.12	8	CG	13.3	13.5
<i>Paratanytarsus</i>	09021011071		1.01	6	--		1.3
<i>Paratanytarsus longistylus</i>	09021011071126	1.00		6	--	1.3	
<i>Tanytarsus</i>	09021011076	2.00	2.02	6	CF	2.7	2.7
<i>Phaenopsectra</i>	09021011101	0.67	0.67	7	SC	0.9	0.9
<i>Polypedilum</i>	09021011102		1.35	6	SH		1.8
<i>Polypedilum aviceps</i>	09021011102181	1.00			--	1.3	
<i>Polypedilum illinoense group</i>	09021011102185	0.33			--	0.4	
<i>Psephenus</i>	09021108058		0.33	4	SC		0.4
<i>Psephenus herricki</i>	09021108058028	0.33			--	0.4	
<i>Ectopria</i>	09021109059	0.33	0.33	5	SC	0.4	0.4
Gastropoda	1001	0.33	0.33		--	0.4	0.4
<i>Stagnicola</i>	10010201025	0.33	0.33		--	0.4	0.4
<i>Menetus</i>	10010203031		1.67		--		2.2
<i>Menetus dilatatus</i>	10010203031059	1.67			--	2.2	
<i>Ferrissia</i>	10010204035	0.33	0.33		SC	0.4	0.4