

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

**Station Information**

<b>Station Number: W-028</b>	Trip ID: 2010-028	River Basin: Saco
Waterbody: LONG CREEK (BELOW GANNETT DR)	HUC8 Name: Presumpscot	
Town: South Portland	Latitude: 43 38 29.95 N	
Mitigation Monitoring Site: No	Longitude: 70 21 18.81 W	

**Sample Information**

<b>Sample ID: WA-028-2010E (1001)</b>	Type of Sample: PLANT RUBBINGS	Date Sampled: 6/10/2010
Bottle #: 1001	Sampling Organization: BIOMONITORING UNIT	Taxonomist: ACADEMY OF NATURAL SCIENCES

**Classification Attainment**

<b>Statutory Class: C</b>	<b>Final Determination: NA</b>	Date: 5/10/2019
Model Result with $P \geq 0.6$ : NA	<b>Reason for Determination: Model L&amp;w</b>	
Date Last Calculated: 1/11/2019	Comments:	

**Model Probabilities**

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A: 0.00	Class C: 0.00	Class A, B, or C	0.00
Class B: 0.00	NA: 1.00	Non-Attainment	1.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.00	Class A	0.00
Class C or Non-Attainment	1.00	Class B or C or Non-Attainment	1.00

**Model Variables**

		<u>Reference Range (10th or 90th percentile value)</u>
Relative Richness of Diatoms in the Eunotiaceae Family	0.072	>0.09
Relative Density of Eutrophic Diatoms	0.707	<0.15
Relative Richness of Oligosaprobic Diatoms	0.244	>0.37
Relative Richness of Intermediate Taxa	0.549	>0.61
Relative Richness of Sensitive Taxa	0.039	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	57.15	<38

**Other Variables**

	Density (cells/cm <sup>2</sup> )	Relative Density	Richness	Relative Richness	Biovolume (um <sup>3</sup> /cm <sup>2</sup> )	Relative Biovolume
Total for Sample	92,738	-	69	-	519,791,720	-
Diatom Only	40,445	-	60	-	17,678,193	-
MTI Sensitive	270	0.005	2	0.039	90,131	0.000
MTI Intermediate	27,688	0.539	28	0.549	452,701,155	0.982
MTI Eurytopic	23,391	0.456	21	0.412	8,199,112	0.018
Ratio of MTI:						
Sensitive to Eurytopic	0.012	0.012	0.095	0.095	0.011	0.011

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**Water Chemistry**

**Sample Date:** 6/10/2010 9:45:00 AM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chloride	140	mg/l	
Grab Sample	Chlorophyll A	0.0032	mg/l	
Grab Sample	Chlorophyll A		mg/l	U
Grab Sample	Chlorophyll A - Phaeophytin	0.0036	mg/l	
Grab Sample	Dissolved Organic Carbon	6.3	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen	0.08	mg/l	
Grab Sample	Orthophosphate As Phosphorus	4	ug/l	
Grab Sample	pH	7.5		
Grab Sample	Silica	6.8	mg/l	
Grab Sample	Silicon	3.2	mg/l	
Grab Sample	Specific Conductance	598	umhos/cm	
Grab Sample	Total Alkalinity	91	mg/l	
Grab Sample	Total Kjeldahl Nitrogen (organic And Nh3) As Nitrogen	0.4	mg/l	
Grab Sample	Total Phosphorus Mixed Forms (po4 And Organic) As Phosphorus	0.029	mg/l	
Grab Sample	True Color	32	unit	*
In-situ	Dissolved Oxygen	5.9	mg/l	
In-situ	pH	7.2		
In-situ	Specific Conductance	598	us/cm	
In-situ	Temperature	14.4	deg c	

**Landcover Summary - 2004 Data**

Total Area (ac)	480	High Int. Dev. %	13.6	Water %	0.0	Non-vegetated %	0.0
		Med Int. Dev. %	1.8	Wetland %	12.3	Tilled Agriculture %	0.0
		Low Int. Dev. %	6.8	Upland Woody %	25.4	Grassland %	3.9
		Development %	22.3	Natural %	37.7	Human Altered %	62.3
						Impervious %	20.0
Total Land (ac)	480	High Int. Dev. %	13.6	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	1.8	Wetland %	12.3	Tilled Agriculture %	0.0
		Low Int. Dev. %	6.8	Upland Woody %	25.4	Grassland %	3.9
		Development %	22.3	Natural %	37.7	Human Altered %	62.3
						Impervious %	20.0

**Summary of Habitat Characteristics**

Human Disturbance

Total Score:	20
Hydrologic Modifications to Wetland:	3
Vegetative Modifications to Wetland:	2
Evidence of Chemical Pollutants:	4
Impervious Surface in Watershed:	7

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Potential for NPS Pollution:

4

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<b>Summary of Habitat Characteristics</b>
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Dominant Plant Species: UNKNOWN SUBMERGED PLANT, CATTAILS, SURROUNDING AREA IS SHRUBBY  
W/ VARIED VEGETATION

Additional Plant Community Observations:

Habitat Classification: AQUATIC MACROPHYTE BED EMERGENT NON-PERSISTENT VEGETATION EMERGENT PERSISTENT VEGETATION	Substrate Classification: SILT/MUCK SUBSTRATE
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Visible Flow: Rain In Previous 24 Hours: Unknown

Sample Comments: No comments

<b>Additional Summary Variables</b>
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	Density (cells/cm <sup>2</sup> )	Relative Density	Richness	Relative Richness	Biovolume (um <sup>3</sup> /cm <sup>2</sup> )	Relative Biovolume
Diatom Growth Forms and Motility:						
Unattached	8,493	0.210	6	0.100	2,314,797	0.131
Variable	1,955	0.048	4	0.067	468,232	0.026
Erect	2,427	0.060	10	0.167	2,628,799	0.149
Stalked	2,427	0.060	3	0.050	3,150,087	0.178
Prostrate	25,143	0.622	37	0.617	9,116,279	0.516
Motile	22,514	0.557	32	0.533	8,941,788	0.506



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**Bottle # :** 1001      **Waterbody:** Long Creek (below Gannett Dr) - W-028      **Town:** South Portland  
**Sample ID:** WA-028-2010E (1001)      **Station Number:** W-028

Taxa Name	Group	Density (cells/ cm <sup>2</sup> )	Relative Density		Biovolume (um <sup>3</sup> / cm <sup>2</sup> )	Relative Biovolume	Form	Mot- ility	van Dam Index Values							Maine Epi Tolerance		
			All	Rank					Diatoms	pH	NO2	S	T	M	Sal			
<i>Anabaena</i>	Filamentous Cyanobacteria	6,793	7.325%	4		340,679	0.066%											42.8-I
<i>Heteroleibleinia</i>	Filamentous Cyanobacteria	15,009	16.184%	1		141,358	0.027%											
<i>Leptolyngbya</i>	Filamentous Cyanobacteria	12,165	13.118%	2		39,667	0.008%											
<i>Aulacoseira alpigena</i>	Centric Diatom	135	0.145%	63	0.3%	9,669	0.002%	U	N	2	1	1	1	1	1	1	1	24.8-S
<i>Cyclotella meneghiniana</i>	Centric Diatom	337	0.363%	34	0.8%	271,430	0.052%	U	N	4	3	5	4	5	2	3		85.6-E
<i>Ctenophora pulchella</i>	Pennate Diatom	607	0.654%	22	1.5%	33,268	0.006%	E	N	4	3	3	5	3	3	2		83.2-E
<i>Diatoma moniliformis</i>	Pennate Diatom	7,347	7.923%	3	18.2%	1,292,287	0.249%	U	N							3		75.4-E
<i>Fragilaria capucina</i>	Pennate Diatom	270	0.291%	44	0.7%	48,052	0.009%	V	N	3		2	3			2		58.2-E
<i>Fragilaria gracilis</i>	Pennate Diatom	270	0.291%	44	0.7%	9,961	0.002%	V	N	3	1	1	1	2		2		39.1-I
<i>Fragilaria mesolepta</i>	Pennate Diatom	944	1.018%	18	2.3%	325,354	0.063%	V	N	4						2		72-E
<i>Fragilaria vaucheriae</i>	Pennate Diatom	472	0.509%	26	1.2%	84,864	0.016%	V	N	4	2	3	3	5	3	2		51.3-I
<i>Meridion circulare</i> var. <i>constrictum</i>	Pennate Diatom	202	0.218%	46	0.5%	33,408	0.006%	E	N	4	2	2	2	7	2	2		43.8-I
<i>Pseudostaurosira parasitica</i> var. <i>subconstricta</i>	Pennate Diatom	135	0.145%	63	0.3%	115,537	0.022%	E	N	4	1	1	2	4	2	2		
<i>Synedra</i> sp. 8 NAWQA MORALES	Pennate Diatom	135	0.145%	63	0.3%	670,249	0.129%	E	N									39.3-I
<i>Tabularia tabulata</i>	Pennate Diatom	404	0.436%	31	1.0%	229,449	0.044%	U	N									
<i>Ulnaria acus</i>	Pennate Diatom	337	0.363%	34	0.8%	374,713	0.072%	E	N	4	2	2	3	5	2	2		57.4-E
<i>Tabellaria fenestrata</i>	Pennate Diatom	202	0.218%	46	0.5%	441,892	0.085%	U	N	3	1	1	2	2		1		29.1-I
<i>Tabellaria flocculosa</i> var. <i>linearis</i>	Pennate Diatom	67	0.073%	69	0.2%	70,070	0.013%	U	N									27.8-I
<i>Achnanthydium minutissimum</i>	Pennate Diatom	1,550	1.672%	15	3.8%	41,857	0.008%	P	N	6	2	1	2	7	3	2		49.5-I
<i>Achnanthydium rivulare</i>	Pennate Diatom	472	0.509%	26	1.2%	22,444	0.004%	P	N									48-I
<i>Achnanthydium eutrophilum</i>	Pennate Diatom	135	0.145%	63	0.3%	6,668	0.001%	P	N									
<i>Planothydium frequentissimum</i>	Pennate Diatom	404	0.436%	31	1.0%	27,845	0.005%	P	V	4	2	3	4			2		77.1-E
<i>Cocconeis placentula</i> var. <i>lineata</i>	Pennate Diatom	67	0.073%	69	0.2%	75,677	0.015%	P	N	4	2	3	2	5	2	2		53.6-E
<i>Eunotia bilunaris</i>	Pennate Diatom	270	0.291%	44	0.7%	77,457	0.015%	E	V	6	2	2	2	7	3	2		36.1-I
<i>Eunotia flexuosa</i>	Pennate Diatom	270	0.291%	44	0.7%	541,690	0.104%	E	V	2	1	1	1	2	3	1		27.2-I
<i>Eunotia incisa</i>	Pennate Diatom	135	0.145%	63	0.3%	39,195	0.008%	E	V	2	1	1	1	1	2	1		28-I
<i>Eunotia minor</i>	Pennate Diatom	67	0.073%	69	0.2%	19,942	0.004%	E	V	2		1		4	1			38-I
<i>Eunotia pectinalis</i> var. <i>undulata</i>	Pennate Diatom	270	0.291%	44	0.7%	723,339	0.139%	E	V	2	2	1	2	1	3	1		31-I
<i>Cymbella tumida</i>	Pennate Diatom	270	0.291%	44	0.7%	762,369	0.147%	S	V	4	1	1	1	4	1	2		76.6-E
<i>Rhopalodia gibba</i>	Pennate Diatom	135	0.145%	63	0.3%	677,179	0.130%	P	M	5	1	3	2	5	3	2		43.7-I
<i>Gomphonema angustatum</i>	Pennate Diatom	404	0.436%	31	1.0%	105,829	0.020%	S	N	4	1	1	1	1		2		57.8-E
<i>Gomphonema italicum</i>	Pennate Diatom	1,753	1.890%	14	4.3%	2,281,888	0.439%	S	N									69.7-E
<i>Caloneis bacillum</i>	Pennate Diatom	135	0.145%	63	0.3%	61,382	0.012%	P	M	4	1	2	2	4	2	2		49.5-I
<i>Diploneis oblongella</i>	Pennate Diatom	539	0.581%	24	1.3%	342,385	0.066%	P	M	4	1	1	1		4	2		
<i>Frustulia crassinervia</i>	Pennate Diatom	135	0.145%	63	0.3%	80,462	0.015%	P	M	1	1	1	1	1	3	1		17.1-S
<i>Luticola mutica</i>	Pennate Diatom	270	0.291%	44	0.7%	144,690	0.028%	P	M	3	2	1	3	5	4	3		44.3-I
<i>Navicula canalis</i>	Pennate Diatom	944	1.018%	18	2.3%	178,410	0.034%	P	M	4				5	2			
<i>Navicula cryptocephala</i>	Pennate Diatom	2,899	3.125%	11	7.2%	838,084	0.161%	P	M	4	2	3	3	7	2	2		66.2-E

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Taxa Name	Group	Density (cells/ cm <sup>2</sup> )	Relative Density			Biovolume (um <sup>3</sup> / cm <sup>2</sup> )	Relative Biovolume	Form	Mot- ility	van Dam Index Values						Maine Epi Tolerance
			All	Rank	Diatoms					pH	NO2	S	T	M	Sal	
<i>Navicula cryptotenella</i>	Pennate Diatom	67	0.073%	69	0.2%	13,528	0.003%	P	M	4		2	7	2	2	52.4-I
<i>Navicula erifuga</i>	Pennate Diatom	135	0.145%	63	0.3%	55,493	0.011%	P	M	4			5	2	3	
<i>Navicula gregaria</i>	Pennate Diatom	3,168	3.416%	9	7.8%	733,171	0.141%	P	M	4	2	4	3	5	3	100-E
<i>Navicula lanceolata</i>	Pennate Diatom	404	0.436%	31	1.0%	421,469	0.081%	P	M	4	2	3	3	5	3	3
<i>Navicula libonensis</i>	Pennate Diatom	67	0.073%	69	0.2%	17,378	0.003%	P	M							
<i>Navicula tenelloides</i>	Pennate Diatom	337	0.363%	34	0.8%	37,890	0.007%	P	M	4	1	1	1	5	4	2
<i>Navicula trivialis</i>	Pennate Diatom	135	0.145%	63	0.3%	98,051	0.019%	P	M	4	2	3	3	5	3	76.8-E
<i>Navicula veneta</i>	Pennate Diatom	1,955	2.108%	13	4.8%	321,440	0.062%	P	M	4	2	4	4	5	3	84.2-E
<i>Navicula germainii</i>	Pennate Diatom	5,999	6.469%	5	14.8%	2,585,844	0.497%	P	M							
<i>Sellaphora seminulum</i>	Pennate Diatom	404	0.436%	31	1.0%	791,158	0.152%	P	M	3	3	4	4	5	3	48.7-I
<i>Eolimna minima</i>	Pennate Diatom	674	0.727%	20	1.7%	28,651	0.006%	P	M	4	3	4	4	5	3	53.2-E
<i>Surirella angusta</i>	Pennate Diatom	67	0.073%	69	0.2%	65,617	0.013%	P	H	4	2	2	2	5	3	56.3-E
<i>Surirella brebissonii</i>	Pennate Diatom	135	0.145%	63	0.3%	189,003	0.036%	P	H	4					3	
<i>Nitzschia acicularis</i>	Pennate Diatom	539	0.581%	24	1.3%	97,912	0.019%	P	H	4	4	4	3	5	1	77.4-E
<i>Nitzschia acidoclinata</i>	Pennate Diatom	270	0.291%	44	0.7%	6,994	0.001%	P	H	3	1	1	2	3	3	43.4-I
<i>Nitzschia brevissima</i>	Pennate Diatom	135	0.145%	63	0.3%	14,434	0.003%	P	H	3		3	2	5	3	3
<i>Nitzschia capitellata</i>	Pennate Diatom	270	0.291%	44	0.7%	97,320	0.019%	P	H	4			5	6	3	4
<i>Nitzschia clausii</i>	Pennate Diatom	135	0.145%	63	0.3%	22,765	0.004%	P	H	4	2	2	3	5	3	4
<i>Nitzschia gracilis</i>	Pennate Diatom	135	0.145%	63	0.3%	25,760	0.005%	P	H	3		2	2	3	1	37.6-I
<i>Nitzschia incognita</i>	Pennate Diatom	135	0.145%	63	0.3%	8,791	0.002%	P	H						4	48.5-I
<i>Nitzschia intermedia</i>	Pennate Diatom	135	0.145%	63	0.3%	70,064	0.013%	P	H	3		2	5	1	2	68.9-E
<i>Nitzschia palea var. debilis</i>	Pennate Diatom	944	1.018%	18	2.3%	124,905	0.024%	P	H	3		1	1	3	1	75.5-E
<i>Nitzschia pusilla</i>	Pennate Diatom	809	0.872%	19	2.0%	100,102	0.019%	P	H	3	2	2	2		3	2
<i>Nitzschia recta</i>	Pennate Diatom	135	0.145%	63	0.3%	222,502	0.043%	P	H	4	2	2	2	7	1	54-E
<i>Nitzschia subtilis</i>	Pennate Diatom	270	0.291%	44	0.7%	468,951	0.090%	P	H	2					2	51.4-I
<i>Stigeoclonium lubricum</i>	Filamentous Green	632	0.681%	21		248,629	0.048%									37.7-I
<i>Gloeocystis</i>	Colonial Green	2,844	3.066%	12		532,834	0.103%									41.6-I
<i>Oedogonium</i>	Filamentous Green	3,318	3.578%	8		72,389,489	13.927%									38.2-I
<i>Ulothrix zonata</i>	Filamentous Green	3,634	3.918%	7		54,206,149	10.428%									
<i>Mougeotia</i>	Filamentous Green	3,002	3.237%	10		17,104,494	3.291%									37.5-I
<i>Spirogyra</i>	Filamentous Green	4,898	5.281%	6		357,110,228	68.703%									39.6-I