

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

Station Information
---------------------

<b>Station Number: W-130</b>	Trip ID: 2015-130	River Basin: Saco
Waterbody: BLACK POND		HUC8 Name: Presumpscot
Town: Sweden		Latitude: 44 8 39.46 N
Mitigation Monitoring Site: No		Longitude: 70 47 57.27 W

Sample Information
--------------------

<b>Sample ID: WA-130-2015E (1479)</b>	Type of Sample: PLANT RUBBINGS	Date Sampled: 6/10/2015
Bottle #: 1479	Sampling Organization: BIOMONITORING UNIT	Taxonomist: ACADEMY OF NATURAL SCIENCES

Classification Attainment
---------------------------

<b>Statutory Class: GPA</b>	<b>Final Determination: A</b>	Date: 9/4/2019
Model Result with $P \geq 0.6$ : A	<b>Reason for Determination: Model L&amp;w</b>	
Date Last Calculated: 1/28/2019	Comments:	

Model Probabilities
---------------------

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

Model Variables
-----------------

		<u>Reference Range (10th or 90th percentile value)</u>
Relative Richness of Diatoms in the Eunotiaceae Family	0.244	>0.09
Relative Density of Eutrophentic Diatoms	0.045	<0.15
Relative Richness of Oligosaprobic Diatoms	0.615	>0.37
Relative Richness of Intermediate Taxa	0.548	>0.61
Relative Richness of Sensitive Taxa	0.387	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	30.92	<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	147,354	-	41	-	1,261,200,604	-
Diatom Only	34,483	-	32	-	183,404,308	-
MTI Sensitive	27,244	0.345	12	0.387	183,275,558	0.166
MTI Intermediate	51,389	0.652	17	0.548	917,634,012	0.833
MTI Eurytopic	228	0.003	2	0.065	57,388	0.000
Ratio of MTI:						
Sensitive to Eurytopic	119.301	119.301	6.000	6.000	3,193.608	3193.608

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

**Water Chemistry**

**Sample Date:** 6/10/2015 1:30:00 PM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chloride	8	mg/l	
Grab Sample	Chlorophyll A	0.0021	mg/l	
Grab Sample	Chlorophyll A - Phaeophytin	0.0028	mg/l	
Grab Sample	Dissolved Organic Carbon	3.1	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen	0.01	mg/l	
Grab Sample	Orthophosphate As Phosphorus	1	ug/l	
Grab Sample	Total Alkalinity	3	mg/l	
Grab Sample	Total Kjeldahl Nitrogen (organic And Nh3) As Nitrogen	0.3	mg/l	
Grab Sample	Total Phosphorus Mixed Forms (po4 And Organic) As Phosphorus	7	ug/l	
Grab Sample	True Color	50	ptco	
In-situ	Dissolved Oxygen	8.81	mg/l	
In-situ	pH	6.5		
In-situ	Specific Conductance	41.2	us/cm	
In-situ	Temperature	22.8	deg c	

**Landcover Summary - 2004 Data**

Total Area (ac)	1252	High Int. Dev. %	0.0	Water %	1.2	Non-vegetated %	0.0
		Med Int. Dev. %	0.1	Wetland %	4.9	Tilled Agriculture %	0.7
		Low Int. Dev. %	1.4	Upland Woody %	88.6	Grassland %	3.2
		Development %	1.5	Natural %	93.4	Human Altered %	5.4
						Impervious %	1.4
Total Land (ac)	1238	High Int. Dev. %	0.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.1	Wetland %	4.9	Tilled Agriculture %	0.7
		Low Int. Dev. %	1.4	Upland Woody %	89.6	Grassland %	3.2
		Development %	1.5	Natural %	94.5	Human Altered %	5.5
						Impervious %	1.5

**Summary of Habitat Characteristics**

Human Disturbance

Total Score:	7
Hydrologic Modifications to Wetland:	0
Vegetative Modifications to Wetland:	0
Evidence of Chemical Pollutants:	1
Watershed Characterization and Potential NPS Pollution Impacts:	6

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

**Summary of Habitat Characteristics**

Dominant Plant Species:

Additional Plant Community Observations:

Habitat Classification:

AQUATIC MACROPHYTE BED

EMERGENT NON-PERSISTENT VEGETATION

Substrate Classification:

SILT/MUCK SUBSTRATE

Visible Flow: No      Rain In Previous 24 Hours: Yes

Sample Comments: No comments

**Common Plants Observed**

Scientific Name	Common Name	Maine Taxonomic Code	Plant CoC Score	Wetland Indicator Status	Growth Form
<i>Brasenia schreberi</i>	Watershield	LW-34023103001001	6	OBL	FORB/HERB
<i>Nuphar lutea ssp. variegata</i>	Variegated yellow pond-lily	LW-34023103002002	4	OBL	FORB/HERB
<i>Nymphaea odorata</i>	American white waterlily	LW-34023103003002	5	OBL	FORB/HERB
<i>Pontederia cordata</i>	Pickerelweed	LW-34010906002002	4	OBL	FORB/HERB

**Additional Summary Variables**

	Density (cells/cm <sup>2</sup> )	Relative Density	Richness	Relative Richness	Biovolume (um <sup>3</sup> /cm <sup>2</sup> )	Relative Biovolume
<b>Diatom Growth Forms and Motility:</b>						
Unattached	7,422	0.215	3	0.094	10,717,498	0.058
Variable	1,484	0.043	3	0.094	138,689	0.001
Erect	3,368	0.098	10	0.312	2,492,801	0.014
Stalked	1,599	0.046	3	0.094	4,023,392	0.022
Prostrate	20,610	0.598	13	0.406	166,031,928	0.905
Motile	20,496	0.594	12	0.375	166,011,655	0.905

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

**Additional Summary Variables**

**Station Number: W-130**

Waterbody: BLACK POND

Town: Sweden

**Sample ID: WA-130-2015E (1479)**

Bottle #: 1479

Calculated: 1/28/2019

	Density (cells/cm <sup>2</sup> )	Relative Density	Richness	Relative Richness	Biovolume (um <sup>3</sup> /cm <sup>2</sup> )	Relative Biovolume
Taxa Group:						
Pennate Diatom	33,227	0.225	30	0.732	182,380,858	0.145
Centric Diatom	1,256	0.009	2	0.049	1,023,450	0.001
Cyanobacteria	49,181	0.334	2	0.049	10,474,123	0.008
Filamentous Cyanobacteria	25,627	0.174	1	0.024	448,092	0.000
Green Algae	63,690	0.432	7	0.171	1,067,322,173	0.846
Colonial Green	0	0.000	0	0.000	0	0.000
Filamentous Green	62,748	0.426	5	0.122	1,059,697,512	0.840
Unicellular Green	0	0.000	0	0.000	0	0.000
Desmid	942	0.006	2	0.049	7,624,660	0.006
Red Algae	0	0.000	0	0.000	0	0.000
Euglenoid	0	0.000	0	0.000	0	0.000
Chrysophyte	0	0.000	0	0.000	0	0.000
Cryptophyte	0	0.000	0	0.000	0	0.000
Dinoflagellate	0	0.000	0	0.000	0	0.000
Yellow Green Algae	0	0.000	0	0.000	0	0.000
Haptophyte	0	0.000	0	0.000	0	0.000
Raphidophyte	0	0.000	0	0.000	0	0.000
Synurophyte	0	0.000	0	0.000	0	0.000
Diatom Autecology Groups:						
High Oxygen	27,975	0.921	14	0.609	176,764,204	0.996
Low Oxygen	0	0.000	0	0.000	0	0.000
N-Autotrophic	29,744	0.958	16	0.696	177,491,619	0.997
N-Heterotrophic	0	0.000	0	0.000	0	0.000
Oligosaprobic	23,636	0.741	16	0.615	167,823,630	0.942
Polysaprobic	0	0.000	0	0.000	0	0.000
Oligotrophentic	21,238	0.669	11	0.478	166,782,108	0.935
Eutrophentic	1,427	0.045	2	0.087	363,778	0.002
Acidobiontic	628	0.019	3	0.107	174,943	0.001
Brackish	0	0.000	0	0.000	0	0.000
Dry Condition	571	0.020	2	0.087	69,054	0.000

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

**Bottle # :** 1479

**Waterbody:** Black Pond - W-130

**Town:** Sweden

**Sample ID:** WA-130-2015E (1479)

**Station Number:** W-130

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>Undetermiend bluegreen filament</i>	Cyanobacteria	23,554	15.985%	3	10,026,031	0.795%												
<i>Heteroleibleinia</i>	Filamentous Cyanobacteria	25,627	17.391%	2	448,092	0.036%												
<i>Aulacoseira ambigua</i>	Centric Diatom	742	0.504%	17	261,250	0.021%	U	N	4	2	3	2	5	1	2			19.3-S
<i>Aulacoseira nivalis</i>	Centric Diatom	514	0.349%	20	762,200	0.060%	U	N										
<i>Fragilaria gracilis</i>	Pennate Diatom	1,370	0.930%	9	112,111	0.009%	V	N	3	1	1	1	2		2			39.1-I
<i>Fragilaria tenera</i>	Pennate Diatom	57	0.039%	41	22,066	0.002%	V	N	2	1	1	1	2	2	1			41.5-I
<i>Staurosira construens var. venter</i>	Pennate Diatom	57	0.039%	41	4,513	0.000%	V	N	4	2	1	2	4	1	2			32.4-I
<i>Tabellaria flocculosa</i>	Pennate Diatom	6,166	4.184%	7	9,694,048	0.769%	U	N	2	1	1	2	3	3	1			24.7-S
<i>Rosithidium linearis</i>	Pennate Diatom	114	0.077%	33	20,272	0.002%	P	V	3									32.1-I
<i>Eunotia</i>	Pennate Diatom	114	0.077%	33	44,188	0.004%	E	V										
<i>Eunotia bilunaris</i>	Pennate Diatom	228	0.155%	24	67,438	0.005%	E	V	6	2	2	2	7	3	2			36.1-I
<i>Eunotia exigua</i>	Pennate Diatom	57	0.039%	41	7,124	0.001%	E	V	1	2	2	3	7	3	2			22.7-S
<i>Eunotia flexuosa</i>	Pennate Diatom	171	0.116%	27	1,150,172	0.091%	E	V	2	1	1	1	2	3	1			27.2-I
<i>Eunotia incisa</i>	Pennate Diatom	1,028	0.697%	11	353,535	0.028%	E	V	2	1	1	1	1	2	1			28-I
<i>Eunotia minor</i>	Pennate Diatom	57	0.039%	41	26,059	0.002%	E	V	2			1		4	1			38-I
<i>Eunotia naegelii</i>	Pennate Diatom	343	0.232%	21	215,937	0.017%	E	V	2	1	1	1	1	3	1			28.5-I
<i>Eunotia nymanniana</i>	Pennate Diatom	799	0.542%	14	571,008	0.045%	E	V	2	1		1	1		1			18.3-S
<i>Eunotia paludosa</i>	Pennate Diatom	514	0.349%	20	42,995	0.003%	E	V	1	1	1	1	1	4	1			11.2-S
<i>Eunotia rhomboidea</i>	Pennate Diatom	57	0.039%	41	14,345	0.001%	E	V	2	1	1	1	1	3	1			19.8-S
<i>Encyonema lunatum</i>	Pennate Diatom	1,313	0.891%	10	3,863,780	0.306%	S	V										31.9-I
<i>Gomphonema angustatum</i>	Pennate Diatom	171	0.116%	27	42,525	0.003%	S	N	4	1	1	1	1		2			57.8-E
<i>Gomphonema gracile</i>	Pennate Diatom	114	0.077%	33	117,088	0.009%	S	N	3	1	1	1	3	3	2			38.6-I
<i>Brachysira microcephala</i>	Pennate Diatom	913	0.620%	13	108,577	0.009%	P	M	4	1	2	1	2	2	2			29.4-I
<i>Brachysira brebissonii</i>	Pennate Diatom	114	0.077%	33	52,342	0.004%	P	M	2	1	2	1	1	3	1			17.6-S
<i>Brachysira styriaca</i>	Pennate Diatom	285	0.194%	22	494,551	0.039%	P	M	2				1	3	2			
<i>Frustulia crassinervia</i>	Pennate Diatom	57	0.039%	41	124,825	0.010%	P	M	1	1	1	1	1	3	1			17.1-S
<i>Frustulia krammeri</i>	Pennate Diatom	16,899	11.468%	5	162,109,960	12.854%	P	M	2	1	1	1	1	2	1			16.6-S
<i>Navicula notha</i>	Pennate Diatom	228	0.155%	24	70,130	0.006%	P	M										28.4-I
<i>Pinnularia gibba</i>	Pennate Diatom	114	0.077%	33	108,930	0.009%	P	M	3	2	3	3	7	2	2			22.2-S
<i>Sellaphora pupula</i>	Pennate Diatom	57	0.039%	41	28,787	0.002%	P	M	3	2	3	3	4	2	2			51.3-I
<i>Stauroneis kriegeri</i>	Pennate Diatom	57	0.039%	41	14,864	0.001%	P	M	3	2	2	2	4	3	2			54.6-E
<i>Stenopterobia curvula</i>	Pennate Diatom	971	0.659%	12	2,760,086	0.219%	P	H	2	1	1	1	1	2	1			15.4-S
<i>Nitzschia gracilis</i>	Pennate Diatom	114	0.077%	33	36,075	0.003%	P	H	3		2	2	3	1	1			37.6-I
<i>Nitzschia graciliformis</i>	Pennate Diatom	685	0.465%	18	102,528	0.008%	P	H	4			2	5		2			
<i>Chaetosphaeridium globosum</i>	Filamentous Green	2,826	1.918%	8	767,200	0.061%												
<i>Bulbochaete</i>	Filamentous Green	13,944	9.463%	6	64,616,259	5.123%												
<i>Oedogonium</i>	Filamentous Green	28,265	19.182%	1	739,771,436	58.656%												38.2-I
<i>Cosmarium amoenum</i>	Desmid	754	0.512%	16	7,528,646	0.597%												23-S
<i>Cosmarium angulare</i>	Desmid	188	0.128%	25	96,014	0.008%												
<i>Mougeotia</i>	Filamentous Green	16,959	11.509%	4	171,666,035	13.611%												37.5-I
<i>Gonatozygon aculeatum</i>	Filamentous Green	754	0.512%	16	82,876,581	6.571%												