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

Station Information

Station Number: W-262 Trip ID: 2015-262 River Basin: Saco
Waterbody: MEADOW BROOK (NEW GLOUCESTER) HUC8 Name: Presumpscot
Town: New Gloucester Latitude: 43 58 18.42 N
Mitigation Monitoring Site: No Longitude: 70 14 46.21 W

Sample Information

Sample ID: WA-262-2015E (1501) Type of Sample: PLANT RUBBINGS Date Sampled: 6/9/2015
Bottle # : 1501 Sampling Organization: BIOMONITORING UNIT Taxonomist: ACADEMY OF NATURAL SCIENCES

Classification Attainment

Statutory Class: B **Final Determination: C** Date: 9/20/2019
Model Result with P≥0.6: C **Reason for Determination: Model L&w**
Date Last Calculated: 2/28/2019 Comments:

Model Probabilities

First Stage Model

Class A:	0.03	Class C:	0.42
Class B:	0.56	NA:	0.00

B or Better Model

Class A or B	0.58
Class C or Non-Attainment	0.42

C or Better Model

Class A, B, or C	1.00
Non-Attainment	0.00

A Model

Class A	0.03
Class B or C or Non-Attainment	0.97

Model Variables

		Reference Range (10th or 90th percentile value)
Relative Richness of Diatoms in the Eunotiaceae Family	0.196	>0.09
Relative Density of Eutrophentic Diatoms	0.201	<0.15
Relative Richness of Oligosaprobic Diatoms	0.379	>0.37
Relative Richness of Intermediate Taxa	0.605	>0.61
Relative Richness of Sensitive Taxa	0.105	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	38.78	<38

Other Variables

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Total for Sample	29,549	-	46	-	157,684,246	-
Diatom Only	4,508	-	36	-	1,584,640	-
MTI Sensitive	1,430	0.056	4	0.105	488,183	0.003
MTI Intermediate	23,672	0.929	23	0.605	152,053,659	0.996
MTI Eurytopic	375	0.015	11	0.289	179,683	0.001
Ratio of MTI:						
Sensitive to Eurytopic	3.817	3.817	0.364	0.364	2.717	2.717

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Water Chemistry

Sample Date: 6/9/2015 12:00:00 PM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chloride	15	mg/l	
Grab Sample	Chlorophyll A	0.0052	mg/l	
Grab Sample	Chlorophyll A - Phaeophytin	0.0047	mg/l	
Grab Sample	Dissolved Organic Carbon	4.1	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen	0.01	mg/l	
Grab Sample	Orthophosphate As Phosphorus	2	ug/l	
Grab Sample	Total Alkalinity	17	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	31	ug/l	
Grab Sample	True Color	60	ptco	
In-situ	Dissolved Oxygen	5.98	mg/l	
In-situ	pH	7		
In-situ	Specific Conductance	95.4	us/cm	
In-situ	Temperature	16.4	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	3439	High Int. Dev. %	0.1	Water %	0.1	Non-vegetated %	0.0
		Med Int. Dev. %	0.1	Wetland %	7.8	Tilled Agriculture %	2.4
		Low Int. Dev. %	3.6	Upland Woody %	81.3	Grassland %	4.4
		Development %	3.8	Natural %	89.2	Human Altered %	10.7
						Impervious %	3.2
Total Land (ac)	3437	High Int. Dev. %	0.1	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.1	Wetland %	7.8	Tilled Agriculture %	2.4
		Low Int. Dev. %	3.6	Upland Woody %	81.3	Grassland %	4.4
		Development %	3.8	Natural %	89.3	Human Altered %	10.7
						Impervious %	3.2

Summary of Habitat Characteristics

Human Disturbance

Total Score:	8
Hydrologic Modifications to Wetland:	1
Vegetative Modifications to Wetland:	0
Evidence of Chemical Pollutants:	0
Watershed Characterization and Potential NPS Pollution Impacts:	7

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Summary of Habitat Characteristics

Dominant Plant Species:

Additional Plant Community Observations: GRASSES, SEDGES, CLUMPS OF ALGAE COMMONLY OBSERVED

Habitat Classification: EMERGENT NON-PERSISTENT VEGETATION

Substrate Classification: SILT/MUCK SUBSTRATE

Visible Flow: No

Rain In Previous 24 Hours: No

Sample Comments: PH READ 7.0, THEN WENT TO "OVER"

Common Plants Observed

Scientific Name	Common Name	Maine Taxonomic Code	Plant CoC Score	Wetland Indicator Status	Growth Form
Equisetum		LW-32010101001			PLANT
Nuphar lutea ssp. variegata	Variegated yellow pond-lily	LW-34023103002002	4	OBL	FORB/HERB
Pontederia cordata	Pickerelweed	LW-34010906002002	4	OBL	FORB/HERB

Additional Summary Variables

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Diatom Growth Forms and Motility:						
Unattached	184	0.041	1	0.028	289,494	0.183
Variable	457	0.101	6	0.167	202,786	0.128
Erect	928	0.206	12	0.333	577,023	0.364
Stalked	191	0.042	5	0.139	86,972	0.055
Prostrate	2,740	0.608	11	0.306	427,327	0.270
Motile	206	0.046	9	0.257	42,320	0.027

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Additional Summary Variables

Station Number: W-262 Waterbody: MEADOW BROOK (NEW GLOUCESTER) Town: New Gloucester

Sample ID: WA-262-2015E (1501) Bottle # : 1501 Calculated: 2/28/2019

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Taxa Group:						
Pennate Diatom	4,508	0.153	36	0.783	1,584,640	0.010
Centric Diatom	0	0.000	0	0.000	0	0.000
Cyanobacteria	4,901	0.166	3	0.065	75,608	0.000
Filamentous Cyanobacteria	4,901	0.166	3	0.065	75,608	0.000
Green Algae	18,889	0.639	5	0.109	155,588,839	0.987
Colonial Green	12,056	0.408	2	0.043	1,830,714	0.012
Filamentous Green	6,833	0.231	3	0.065	153,758,125	0.975
Unicellular Green	0	0.000	0	0.000	0	0.000
Desmid	0	0.000	0	0.000	0	0.000
Red Algae	0	0.000	0	0.000	0	0.000
Euglenoid	36	0.001	1	0.022	66,063	0.000
Chrysophyte	1,216	0.041	1	0.022	369,095	0.002
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	1,561	0.734	14	0.538	864,783	0.831
Low Oxygen	265	0.125	4	0.154	57,271	0.055
N-Autotrophic	1,105	0.519	13	0.500	848,534	0.816
N-Heterotrophic	280	0.131	5	0.192	58,062	0.056
Oligosaprobic	1,038	0.452	11	0.379	586,262	0.525
Polysaprobic	184	0.080	4	0.138	40,382	0.036
Oligotrophentic	597	0.362	5	0.200	365,005	0.360
Eutrophentic	331	0.201	8	0.320	97,290	0.096
Acidobiontic	44	0.010	1	0.031	7,520	0.005
Brackish	0	0.000	0	0.000	0	0.000
Dry Condition	147	0.065	1	0.037	67,237	0.057

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Bottle # : 1501 **Waterbody:** Meadow Brook (new Gloucester) - W-262 **Town:** New Gloucester

Sample ID: WA-262-2015E (1501) **Station Number:** W-262

Taxa Name	Group	Density (cells/ cm^2)	Relative Density			Biovolume (um^3/ cm^2)	Relative Biovolume	Form	Mot-ility	van Dam Index Values							Maine Epi Tolerance
			All	Rank	Diatoms					pH	N	O2	S	T	M	Sal	
Heteroleibleinia	Filamentous Cyanobacteria	2,290	7.748%	3		40,033	0.025%										
Leptolyngbya	Filamentous Cyanobacteria	1,395	4.722%	6		6,632	0.004%										
Geitlerinema splendidum	Filamentous Cyanobacteria	1,216	4.116%	8		28,943	0.018%										22.1-S
Fragilaria capucina	Pennate Diatom	15	0.050%	39	0.3%	7,635	0.005%	V	N	3			2	3		2	58.2-E
Fragilaria gracilis	Pennate Diatom	52	0.174%	21	1.1%	4,218	0.003%	V	N	3	1	1	1	2		2	39.1-I
Fragilaria crotonensis	Pennate Diatom	155	0.523%	13	3.4%	52,232	0.033%	V	N	4	2	2	2	3	1	2	51.4-I
Fragilaria tenera	Pennate Diatom	66	0.224%	20	1.5%	25,620	0.016%	V	N	2	1	1	1	2	2	1	41.5-I
Fragilaria vaucheriae	Pennate Diatom	29	0.100%	28	0.7%	5,878	0.004%	V	N	4	2	3	3	5	3	2	51.3-I
Fragilaria sepes	Pennate Diatom	140	0.474%	17	3.1%	107,203	0.068%	V	N	3	1	1	1	2	2	1	38.7-I
Stauroforma exiguiformis	Pennate Diatom	7	0.025%	46	0.2%	796	0.001%	E	N	3	1	1	1	1	2	1	28.7-I
Synedra rumpens	Pennate Diatom	29	0.100%	28	0.7%	3,927	0.002%	E	N	3				2		2	34.9-I
Ulnaria acus	Pennate Diatom	15	0.050%	39	0.3%	32,248	0.020%	E	N	4	2	2	3	5	2	2	57.4-E
Ulnaria ulna	Pennate Diatom	15	0.050%	39	0.3%	4,556	0.003%	E	N	4	2	3	4		2	2	44.5-I
Tabellaria flocculosa	Pennate Diatom	184	0.623%	11	4.1%	289,494	0.184%	U	N	2	1	1	2	3	3	1	24.7-S
Achnanthidium minutissimum	Pennate Diatom	457	1.545%	9	10.1%	16,249	0.010%	P	N	6	2	1	2	7	3	2	49.5-I
Rossithidium linearis	Pennate Diatom	2,077	7.029%	4	46.1%	368,758	0.234%	P	V	3							32.1-I
Eunotia	Pennate Diatom	44	0.150%	24	1.0%	17,102	0.011%	E	V								
Eunotia bilunaris	Pennate Diatom	44	0.150%	24	1.0%	13,050	0.008%	E	V	6	2	2	2	7	3	2	36.1-I
Eunotia implicata	Pennate Diatom	37	0.125%	25	0.8%	73,897	0.047%	E	V	2					3	1	35.7-I
Eunotia incisa	Pennate Diatom	412	1.396%	10	9.2%	141,895	0.090%	E	V	2	1	1	1	1	2	1	28-I
Eunotia minor	Pennate Diatom	147	0.499%	14	3.3%	67,237	0.043%	E	V	2			1		4	1	38-I
Eunotia naegelii	Pennate Diatom	125	0.424%	18	2.8%	78,930	0.050%	E	V	2	1	1	1	1	3	1	28.5-I
Eunotia serra	Pennate Diatom	7	0.025%	46	0.2%	135,865	0.086%	E	V	2	1	1	1	1	3	1	10.7-S
Eunotia subarcuatoides	Pennate Diatom	44	0.150%	24	1.0%	7,520	0.005%	E	V	1	1	1	1	1	3	1	27.6-I
Eunotia meisterioides	Pennate Diatom	7	0.025%	46	0.2%	1,038	0.001%										
Gomphonema affine	Pennate Diatom	22	0.075%	30	0.5%	33,882	0.021%	S	N	4	1	1	2	3	3	2	25.8-S
Gomphonema gracile	Pennate Diatom	15	0.050%	39	0.3%	15,105	0.010%	S	N	3	1	1	1	3	3	2	38.6-I
Gomphonema parvulius	Pennate Diatom	7	0.025%	46	0.2%	635	0.000%	S	N								69.5-E
Gomphonema parvulum	Pennate Diatom	140	0.474%	17	3.1%	31,217	0.020%	S	N	3	3	4	4	5	3	2	55.7-E
Gomphonema subclavatum	Pennate Diatom	7	0.025%	46	0.2%	6,134	0.004%	S	N	3	1	1	2	2	3	2	64.4-E
Navicula cryptocephala	Pennate Diatom	15	0.050%	39	0.3%	5,668	0.004%	P	M	4	2	3	3	7	2	2	66.2-E
Eolimna minima	Pennate Diatom	15	0.050%	39	0.3%	1,009	0.001%	P	M	4	3	4	4	5	3	2	53.2-E
Nitzschia acicularis	Pennate Diatom	96	0.324%	19	2.1%	21,444	0.014%	P	H	4	4	4	3	5	1	2	77.4-E
Nitzschia dissipata	Pennate Diatom	15	0.050%	39	0.3%	4,030	0.003%	P	H	4	2	2	2	4	3	2	57.9-E
Nitzschia graciliformis	Pennate Diatom	7	0.025%	46	0.2%	1,102	0.001%	P	H	4			2	5		2	
Nitzschia palea	Pennate Diatom	15	0.050%	39	0.3%	3,600	0.002%	P	H	3	4	4	5	6	3	2	52.5-E
Nitzschia paleacea	Pennate Diatom	15	0.050%	39	0.3%	791	0.001%	P	H	4	4	3	3	5	2	2	49-I
Nitzschia perminuta	Pennate Diatom	22	0.075%	30	0.5%	1,873	0.001%	P	H	4	1	1	1	2	3	2	37.8-I
Nitzschia radicula	Pennate Diatom	7	0.025%	46	0.2%	2,802	0.002%	P	H								
Dinobryon sertularia	Chrysophyte	1,216	4.116%	8		369,095	0.234%										37.7-I
Characium	Colonial Green	143	0.484%	15		25,058	0.016%										
Gloeocystis	Colonial Green	11,913	40.315%	1		1,805,656	1.145%										41.6-I

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Taxa Name	Group	Density (cells/ cm^2)	Relative Density		Biovolume (um^3/ cm^2)	Relative Biovolume	Form	Mot-ility	van Dam Index Values						Maine Epi Tolerance
			All	Rank Diatoms					pH	NO2	S	T	M	Sal	
Oedogonium	Filamentous Green	5,080	17.191%	2	132,955,818	84.318%									38.2-I
Mougeotia	Filamentous Green	1,574	5.327%	5	15,933,356	10.105%									37.5-I
Zygnema	Filamentous Green	179	0.605%	12	4,868,951	3.088%									
Euglena	Euglenoid	36	0.121%	26	66,063	0.042%									64.3-E