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

Station Information

Station Number: W-252 Trip ID: 2014-252 River Basin: Saco
Waterbody: BRANCH BROOK HUC8 Name: Saco
Town: Newfield Latitude: 43 39 11.01 N
Mitigation Monitoring Site: No Longitude: 70 54 57.16 W

Sample Information

Sample ID: WA-252-2014E (1441) Type of Sample: PLANT RUBBINGS Date Sampled: 5/29/2014
Bottle # : 1441 Sampling Organization: BIOMONITORING UNIT Taxonomist: ACADEMY OF NATURAL SCIENCES

Classification Attainment

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

Model Probabilities

First Stage Model

Class A:	0.41	Class C:	0.01
Class B:	0.59	NA:	0.00

B or Better Model

Class A or B	1.00
Class C or Non-Attainment	0.01

C or Better Model

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

A Model

Class A	0.41
Class B or C or Non-Attainment	0.59

Model Variables

		Reference Range (10th or 90th percentile value)
Relative Richness of Diatoms in the Eunotiaceae Family	0.225	>0.09
Relative Density of Eutrophentic Diatoms	0.065	<0.15
Relative Richness of Oligosaprobic Diatoms	0.536	>0.37
Relative Richness of Intermediate Taxa	0.667	>0.61
Relative Richness of Sensitive Taxa	0.139	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	37.57	<38

Other Variables

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Total for Sample	22,703	-	40	-	8,116,890	-
Diatom Only	6,360	-	35	-	3,896,466	-
MTI Sensitive	1,957	0.109	5	0.139	2,922,062	0.371
MTI Intermediate	15,397	0.857	24	0.667	4,781,875	0.607
MTI Eurytopic	612	0.034	7	0.194	178,745	0.023
Ratio of MTI:						
Sensitive to Eurytopic	3.200	3.200	0.714	0.714	16.348	16.348

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Water Chemistry

Sample Date: 5/29/2014 11:15:00 AM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chloride	6	mg/l	
Grab Sample	Chlorophyll A	0.0011	mg/l	
Grab Sample	Chlorophyll A - Phaeophytin	0.0014	mg/l	
Grab Sample	Dissolved Organic Carbon	5	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen		mg/l	U
Grab Sample	Orthophosphate As Phosphorus	1	ug/l	
Grab Sample	Total Alkalinity	10	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	10	ug/l	
Grab Sample	True Color	60	ptco	
In-situ	Dissolved Oxygen	8.2	mg/l	
In-situ	pH	6.36		
In-situ	Specific Conductance	47	us/cm	
In-situ	Temperature	15.3	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	5406	High Int. Dev. %	0.0	Water %	0.0	Non-vegetated %	0.0
		Med Int. Dev. %	0.0	Wetland %	5.4	Tilled Agriculture %	0.2
		Low Int. Dev. %	1.3	Upland Woody %	89.0	Grassland %	4.0
		Development %	1.3	Natural %	94.4	Human Altered %	5.6
						Impervious %	1.4
Total Land (ac)	5403	High Int. Dev. %	0.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.0	Wetland %	5.4	Tilled Agriculture %	0.2
		Low Int. Dev. %	1.3	Upland Woody %	89.1	Grassland %	4.0
		Development %	1.3	Natural %	94.4	Human Altered %	5.6
						Impervious %	1.4

Summary of Habitat Characteristics

Human Disturbance

Total Score:	18
Hydrologic Modifications to Wetland:	6
Vegetative Modifications to Wetland:	2
Evidence of Chemical Pollutants:	2
Watershed Characterization and Potential NPS Pollution Impacts:	8

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Summary of Habitat Characteristics

Dominant Plant Species: UNKNOWN GRASS

Additional Plant Community Observations:

Habitat Classification:
EMERGENT NON-PERSISTENT VEGETATION

Substrate Classification:
SAND SUBSTRATE
SILT/MUCK SUBSTRATE

Visible Flow: Yes Rain In Previous 24 Hours: Unknown

Sample Comments: HEAVY GROWTH OF ALGAE ON PLANTS IN SOME AREAS, VEGETATED MAT IS COMMON

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
Potamogeton		LW-34011101001			PLANT
Utricularia intermedia	Flatleaf bladderwort	LW-34022305002004	6	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	140	0.022	2	0.057	197,595	0.051
Variable	192	0.030	2	0.057	108,279	0.028
Erect	1,747	0.275	10	0.286	645,669	0.166
Stalked	2,394	0.376	10	0.286	2,799,309	0.718
Prostrate	1,887	0.297	11	0.314	145,613	0.037
Motile	192	0.030	7	0.200	53,030	0.014

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Additional Summary Variables

Station Number: W-252 Waterbody: BRANCH BROOK Town: Newfield

Sample ID: WA-252-2014E (1441) Bottle # : 1441 Calculated: 2/28/2019

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Taxa Group:						
Pennate Diatom	6,360	0.280	35	0.875	3,896,466	0.480
Centric Diatom	0	0.000	0	0.000	0	0.000
Cyanobacteria	3,462	0.152	1	0.025	135,750	0.017
Filamentous Cyanobacteria	0	0.000	0	0.000	0	0.000
Green Algae	12,801	0.564	3	0.075	4,037,979	0.497
Colonial Green	4,025	0.177	2	0.050	601,216	0.074
Filamentous Green	8,775	0.387	1	0.025	3,436,763	0.423
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	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	81	0.004	1	0.025	46,695	0.006
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	5,120	0.877	15	0.600	3,492,046	0.932
Low Oxygen	315	0.054	3	0.120	67,896	0.018
N-Autotrophic	4,718	0.808	15	0.600	3,482,111	0.929
N-Heterotrophic	315	0.054	3	0.120	67,896	0.018
Oligosaprobic	3,023	0.500	15	0.536	754,576	0.196
Polysaprobic	454	0.075	4	0.143	111,127	0.029
Oligotrophentic	2,673	0.500	7	0.318	574,292	0.154
Eutrophentic	349	0.065	4	0.182	73,705	0.020
Acidobiontic	70	0.012	2	0.071	10,344	0.003
Brackish	0	0.000	0	0.000	0	0.000
Dry Condition	140	0.031	3	0.125	88,986	0.024

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Bottle # : 1441 **Waterbody:** Branch Brook - W-252 **Town:** Newfield

Sample ID: WA-252-2014E (1441) **Station Number:** W-252

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	
Undetermiend bluegreen filament	Cyanobacteria	3,462	15.248%	3		135,750	1.672%										
Asterionella formosa	Pennate Diatom	17	0.077%	40	0.3%	5,296	0.065%	U	N	4	2	2	2	4	1	2	37.1-I
Fragilaria capucina	Pennate Diatom	157	0.693%	10	2.5%	81,508	1.004%	V	N	3			2	3		2	58.2-E
Fragilaria sepes	Pennate Diatom	35	0.154%	27	0.5%	26,771	0.330%	V	N	3	1	1	1	2	2	1	38.7-I
Ulnaria ulna	Pennate Diatom	140	0.616%	11	2.2%	43,231	0.533%	E	N	4	2	3	4		2	2	44.5-I
Tabellaria flocculosa	Pennate Diatom	122	0.539%	12	1.9%	192,299	2.369%	U	N	2	1	1	2	3	3	1	24.7-S
Achnanthidium minutissimum	Pennate Diatom	454	2.001%	7	7.1%	16,166	0.199%	P	N	6	2	1	2	7	3	2	49.5-I
Achnanthidium rivulare	Pennate Diatom	17	0.077%	40	0.3%	902	0.011%	P	N								48-I
Psammothidium subatomoides	Pennate Diatom	17	0.077%	40	0.3%	1,274	0.016%	P	V	2	1	1	1	2	1	1	27.6-I
Rossithidium petersennii	Pennate Diatom	1,206	5.310%	6	19.0%	74,243	0.915%	P	V	3	1	1	1	1		1	
Eunotia	Pennate Diatom	52	0.231%	22	0.8%	20,968	0.258%	E	V								
Eunotia bilunaris	Pennate Diatom	52	0.231%	21	0.8%	15,480	0.191%	E	V	6	2	2	2	7	3	2	36.1-I
Eunotia mucophila	Pennate Diatom	105	0.462%	13	1.6%	79,914	0.985%	E	V	2	2	2	1	2	4	2	20-S
Eunotia elegans	Pennate Diatom	17	0.077%	40	0.3%	3,247	0.040%	E	V	2	1	1	1	1	3	1	
Eunotia incisa	Pennate Diatom	1,223	5.387%	5	19.2%	420,781	5.184%	E	V	2	1	1	1	1	2	1	28-I
Eunotia minor	Pennate Diatom	17	0.077%	40	0.3%	7,647	0.094%	E	V	2			1		4	1	38-I
Eunotia naegelii	Pennate Diatom	70	0.308%	17	1.1%	44,059	0.543%	E	V	2	1	1	1	1	3	1	28.5-I
Eunotia paludosa	Pennate Diatom	17	0.077%	40	0.3%	1,425	0.018%	E	V	1	1	1	1	1	4	1	11.2-S
Eunotia subarcuatoides	Pennate Diatom	52	0.231%	21	0.8%	8,920	0.110%	E	V	1	1	1	1	1	3	1	27.6-I
Encyonema silesiacum	Pennate Diatom	17	0.077%	40	0.3%	12,905	0.159%	S	V	3	2	3	3	7	1	2	45.6-I
Encyonopsis microcephala	Pennate Diatom	35	0.154%	27	0.5%	1,732	0.021%	S	V	4	1	1	1	4	3	2	30.7-I
Encyonopsis subminuta	Pennate Diatom	17	0.077%	40	0.3%	4,274	0.053%	S	V								46.4-I
Gomphonema affine	Pennate Diatom	1,695	7.465%	4	26.6%	2,622,797	32.313%	S	N	4	1	1	2	3	3	2	25.8-S
Gomphonema angustatum	Pennate Diatom	87	0.385%	14	1.4%	21,619	0.266%	S	N	4	1	1	1	1		2	57.8-E
Gomphonema gracile	Pennate Diatom	52	0.231%	21	0.8%	53,753	0.662%	S	N	3	1	1	1	3	3	2	38.6-I
Gomphonema kobayasii	Pennate Diatom	17	0.077%	40	0.3%	1,913	0.024%	S	N								53.4-E
Gomphonema minutum	Pennate Diatom	35	0.154%	27	0.5%	5,809	0.072%	S	N	3			2	5		2	68-E
Gomphonema parvulum	Pennate Diatom	280	1.231%	8	4.4%	62,428	0.769%	S	N	3	3	4	4	5	3	2	55.7-E
Gomphonema minusculum	Pennate Diatom	157	0.693%	10	2.5%	12,077	0.149%	S	N								50.7-I
Brachysira microcephala	Pennate Diatom	52	0.231%	21	0.8%	6,231	0.077%	P	M	4	1	2	1	2	2	2	29.4-I
Navicula notha	Pennate Diatom	17	0.077%	40	0.3%	5,366	0.066%	P	M								28.4-I
Pinnularia viridis	Pennate Diatom	17	0.077%	40	0.3%	25,626	0.316%	P	M	3	2	3	2	7	3	2	25.8-S
Eolimna minima	Pennate Diatom	17	0.077%	40	0.3%	1,197	0.015%	P	M	4	3	4	4	5	3	2	53.2-E
Nitzschia palea	Pennate Diatom	17	0.077%	40	0.3%	4,270	0.053%	P	H	3	4	4	5	6	3	2	52.5-E
Nitzschia perminuta	Pennate Diatom	35	0.154%	27	0.5%	2,962	0.036%	P	H	4	1	1	1	2	3	2	37.8-I
Nitzschia pumila	Pennate Diatom	35	0.154%	27	0.5%	7,377	0.091%	P	H								45.9-I
Ophiocytium parvulum	Yellow Green Algae	81	0.355%	16		46,695	0.575%										33.7-I
Stigeoclonium lubricum	Filamentous Green	8,775	38.652%	1		3,436,763	42.341%										37.7-I
Gloeocystis	Colonial Green	3,945	17.376%	2		597,943	7.367%										41.6-I
Ankistrodesmus falcatus	Colonial Green	81	0.355%	16		3,273	0.040%										36.8-I