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

Station Information

Station Number: W-163 Trip ID: 2007-163 River Basin: Maine Coastal
Waterbody: TRUES POND HUC8 Name: St. George-Sheepscot
Town: Montville Latitude: 44 23 28.03 N
Mitigation Monitoring Site: No Longitude: 69 17 19.61 W

Sample Information

Sample ID: WA-163-2007E (658) Type of Sample: PLANT RUBBINGS Date Sampled: 6/14/2007
Bottle # : 658 Sampling Organization: BIOMONITORING UNIT Taxonomist: ACADEMY OF NATURAL SCIENCES

Classification Attainment

Statutory Class: GPA **Final Determination: A** Date: 9/9/2019
Model Result with P≥0.6: A **Reason for Determination: Model L&w**
Date Last Calculated: 2/8/2019 Comments:

Model Probabilities

First Stage Model

Class A:	0.99	Class C:	0.00
Class B:	0.01	NA:	0.00

B or Better Model

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

C or Better Model

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

A Model

Class A	0.99
Class B or C or Non-Attainment	0.01

Model Variables

		Reference Range (10th or 90th percentile value)
Relative Richness of Diatoms in the Eunotiaceae Family	0.095	>0.09
Relative Density of Eutrophentic Diatoms	0.031	<0.15
Relative Richness of Oligosaprobic Diatoms	0.556	>0.37
Relative Richness of Intermediate Taxa	0.673	>0.61
Relative Richness of Sensitive Taxa	0.224	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	30.53	<38

Other Variables

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Total for Sample	455,050	-	63	-	414,339,569	-
Diatom Only	109,516	-	36	-	141,373,937	-
MTI Sensitive	203,238	0.588	11	0.224	58,691,902	0.197
MTI Intermediate	138,445	0.401	33	0.673	237,496,861	0.798
MTI Eurytopic	3,833	0.011	5	0.102	1,383,493	0.005
Ratio of MTI:						
Sensitive to Eurytopic	53.022	53.022	2.200	2.200	42.423	42.423

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Water Chemistry

Sample Date: 6/14/2007 1:30:00 PM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chloride	5	mg/l	
Grab Sample	Chlorophyll A	0.0044	mg/l	
Grab Sample	Chlorophyll A - Phaeophytin	0.004	mg/l	
Grab Sample	Dissolved Organic Carbon	14	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen		mg/l	U
Grab Sample	Orthophosphate As Phosphorus	1	ug/l	
Grab Sample	pH	6.6		
Grab Sample	Silica	1.2	mg/l	
Grab Sample	Silicon	0.58	mg/l	
Grab Sample	Specific Conductance	40	umhos/cm	
Grab Sample	Total Alkalinity	9	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	0.015	mg/l	
Grab Sample	True Color	27	unit	
In-situ	Dissolved Oxygen	6.5	mg/l	
In-situ	pH	6.44		
In-situ	Specific Conductance	37	us/cm	
In-situ	Temperature	20	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	16867	High Int. Dev. %	0.3	Water %	10.4	Non-vegetated %	0.8
		Med Int. Dev. %	0.4	Wetland %	5.5	Tilled Agriculture %	0.9
		Low Int. Dev. %	3.9	Upland Woody %	74.8	Grassland %	3.0
		Development %	4.6	Natural %	80.4	Human Altered %	9.2
						Impervious %	3.7
Total Land (ac)	15108	High Int. Dev. %	0.3	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.4	Wetland %	6.1	Tilled Agriculture %	1.0
		Low Int. Dev. %	4.3	Upland Woody %	83.5	Grassland %	3.4
		Development %	5.1	Natural %	89.7	Human Altered %	10.3
						Impervious %	4.2

Summary of Habitat Characteristics

Human Disturbance	
Total Score:	12
Hydrologic Modifications to Wetland:	1
Vegetative Modifications to Wetland:	0
Evidence of Chemical Pollutants:	0
Impervious Surface in Watershed:	8
Potential for NPS Pollution:	3

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Summary of Habitat Characteristics

Dominant Plant Species: PICKEREL WEED, YELLOW WATER LILY, GRASSES, RUSHES, WATER CELERY

Additional Plant Community Observations:

Habitat Classification:
EMERGENT NON-PERSISTENT VEGETATION

Substrate Classification:
DETRITUS SUBSTRATE
SILT/MUCK SUBSTRATE

Visible Flow: Rain In Previous 24 Hours: Unknown

Sample Comments: No comments

Dominant Plant Species: PICKEREL WEED, YELLOW WATER LILY, GRASSES, RUSHES, WATER CELERY

Additional Plant Community Observations:

Habitat Classification:

Substrate Classification:
DETRITUS SUBSTRATE
SILT/MUCK SUBSTRATE

Visible Flow:

Sample Comments: No comments

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	18,983	0.173	3	0.083	37,488,439	0.265
Variable	8,396	0.077	4	0.111	3,980,623	0.028
Erect	18,983	0.173	8	0.222	33,783,079	0.239
Stalked	14,055	0.128	9	0.250	18,198,759	0.129
Prostrate	49,100	0.448	12	0.333	47,923,039	0.339
Motile	29,022	0.265	10	0.278	44,514,325	0.315

Additional Summary Variables

Station Number: W-163 Waterbody: TRUES POND Town: Montville

Sample ID: WA-163-2007E (658) Bottle # : 658 Calculated: 2/8/2019

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Taxa Group:						
Pennate Diatom	109,516	0.241	36	0.571	141,373,937	0.341
Centric Diatom	0	0.000	0	0.000	0	0.000
Cyanobacteria	226,631	0.498	6	0.095	7,448,815	0.018
Filamentous Cyanobacteria	183,719	0.404	4	0.063	6,492,226	0.016
Green Algae	118,903	0.261	21	0.333	265,516,817	0.641
Colonial Green	70,627	0.155	7	0.111	10,256,788	0.025
Filamentous Green	8,940	0.020	4	0.063	200,281,336	0.483
Unicellular Green	20,115	0.044	1	0.016	4,485,687	0.011
Desmid	19,221	0.042	9	0.143	50,493,006	0.122
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	70,455	0.767	15	0.625	89,451,514	0.854
Low Oxygen	1,460	0.016	2	0.083	358,207	0.003
N-Autotrophic	60,051	0.701	16	0.696	88,355,960	0.861
N-Heterotrophic	1,095	0.013	1	0.043	265,262	0.003
Oligosaprobic	47,457	0.505	15	0.556	68,426,824	0.635
Polysaprobic	1,095	0.012	1	0.037	265,262	0.002
Oligotrophentic	23,911	0.311	8	0.308	41,639,448	0.406
Eutrophentic	2,373	0.031	3	0.115	1,587,383	0.015
Acidobiontic	8,944	0.093	2	0.069	32,857,061	0.300
Brackish	365	0.004	1	0.034	92,945	0.001
Dry Condition	4,563	0.050	1	0.042	7,985,543	0.074

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Bottle # : 658 **Waterbody:** Trues Pond - W-163 **Town:** Montville

Sample ID: WA-163-2007E (658) **Station Number:** W-163

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	
Merismopedia punctata	Cyanobacteria	8,940	1.965%	11		107,281	0.026%										
Woronichinia	Cyanobacteria	33,972	7.466%	3		849,308	0.205%										
Lyngbya martensiana	Filamentous Cyanobacteria	20,562	4.519%	4		3,566,079	0.861%										
Pseudanabaena	Filamentous Cyanobacteria	16,986	3.733%	7		75,827	0.018%										
Geitlerinema splendidum	Filamentous Cyanobacteria	8,493	1.866%	12		72,541	0.018%										22.1-S
Hapalosiphon	Filamentous Cyanobacteria	137,677	30.255%	1		2,777,778	0.670%										25.2-S
Fragilaria capucina	Pennate Diatom	365	0.080%	61	0.3%	65,058	0.016%	V	N	3			2	3		2	58.2-E
Fragilaria gracilis	Pennate Diatom	365	0.080%	61	0.3%	36,611	0.009%	V	N	3	1	1	1	2		2	39.1-I
Fragilaria tenera	Pennate Diatom	3,833	0.842%	23	3.5%	594,021	0.143%	V	N	2	1	1	1	2	2	1	41.5-I
Fragilaria sepes	Pennate Diatom	3,833	0.842%	23	3.5%	3,284,933	0.793%	V	N	3	1	1	1	2	2	1	38.7-I
Synedra rumpens	Pennate Diatom	1,825	0.401%	34	1.7%	213,419	0.052%	E	N	3				2		2	34.9-I
Synedra sp. 8 NAWQA MORALES	Pennate Diatom	1,095	0.241%	42	1.0%	9,441,377	2.279%	E	N								39.3-I
Tabellaria flocculosa	Pennate Diatom	15,515	3.409%	9	14.2%	7,590,747	1.832%	U	N	2	1	1	2	3	3	1	24.7-S
Tabellaria quadriseptata	Pennate Diatom	3,285	0.722%	26	3.0%	28,324,130	6.836%	U	N	1	1	1	1	1	2	1	21.9-S
Tabellaria ventricosa	Pennate Diatom	183	0.040%	63	0.2%	1,573,561	0.380%	U	N								19.7-S
Achnanthidium deflexum	Pennate Diatom	1,460	0.321%	38	1.3%	124,905	0.030%	P	N	3			1	3		2	23.2-S
Achnanthidium minutissimum	Pennate Diatom	18,618	4.091%	6	17.0%	3,283,808	0.793%	P	N	6	2	1	2	7	3	2	49.5-I
Eunotia mucophila	Pennate Diatom	4,563	1.003%	19	4.2%	7,985,543	1.927%	E	V	2	2	2	1	2	4	2	20-S
Eunotia flexuosa	Pennate Diatom	3,468	0.762%	25	3.2%	10,198,900	2.461%	E	V	2	1	1	1	2	3	1	27.2-I
Eunotia implicata	Pennate Diatom	548	0.120%	49	0.5%	1,469,278	0.355%	E	V	2					3	1	35.7-I
Eunotia incisa	Pennate Diatom	4,381	0.963%	20	4.0%	1,724,188	0.416%	E	V	2	1	1	1	1	2	1	28-I
Eunotia naegelii	Pennate Diatom	2,920	0.642%	28	2.7%	2,218,105	0.535%	E	V	2	1	1	1	1	3	1	28.5-I
Eunotia pectinalis var. undulata	Pennate Diatom	183	0.040%	63	0.2%	532,268	0.128%	E	V	2	2	1	2	1	3	1	31-I
Encyonema silesiacum	Pennate Diatom	365	0.080%	61	0.3%	1,983,076	0.479%	S	V	3	2	3	3	7	1	2	45.6-I
Encyonema lunatum	Pennate Diatom	1,825	0.401%	34	1.7%	3,384,045	0.817%	S	V								31.9-I
Encyonopsis subminuta	Pennate Diatom	2,373	0.521%	31	2.2%	4,399,258	1.062%	S	V								46.4-I
Gomphonema acuminatum	Pennate Diatom	913	0.201%	45	0.8%	1,229,176	0.297%	S	N	4	1	2	2	5	2	2	41.4-I
Gomphonema angustatum	Pennate Diatom	1,278	0.281%	40	1.2%	383,480	0.093%	S	N	4	1	1	1	1		2	57.8-E
Gomphonema gracile	Pennate Diatom	4,563	1.003%	19	4.2%	4,789,465	1.156%	S	N	3	1	1	1	3	3	2	38.6-I
Gomphonema parvulum	Pennate Diatom	1,095	0.241%	42	1.0%	265,262	0.064%	S	N	3	3	4	4	5	3	2	55.7-E
Gomphonema subclavatum	Pennate Diatom	730	0.160%	48	0.7%	576,748	0.139%	S	N	3	1	1	2	2	3	2	64.4-E
Gomphonema variostriatum	Pennate Diatom	913	0.201%	45	0.8%	1,188,248	0.287%	S	N								32-I
Brachysira microcephala	Pennate Diatom	1,643	0.361%	37	1.5%	305,266	0.074%	P	M	4	1	2	1	2	2	2	29.4-I
Brachysira brebissonii	Pennate Diatom	5,841	1.284%	15	5.3%	1,186,082	0.286%	P	M	2	1	2	1	1	3	1	17.6-S
Frustulia saxonica	Pennate Diatom	5,658	1.243%	17	5.2%	4,532,932	1.094%	P	M	1	1	1	1	1	3	1	12.4-S
Navicula gregaria	Pennate Diatom	365	0.080%	61	0.3%	92,945	0.022%	P	M	4	2	4	3	5	3	3	100-E
Navicula notha	Pennate Diatom	5,841	1.284%	15	5.3%	1,309,616	0.316%	P	M								28.4-I
Pinnularia divergens	Pennate Diatom	365	0.080%	61	0.3%	2,738,263	0.661%	P	M	3			1	1	3	1	30.5-I
Sellaphora pupula	Pennate Diatom	365	0.080%	61	0.3%	163,644	0.039%	P	M	3	2	3	3	4	2	2	51.3-I
Stenopterobia planctonica	Pennate Diatom	913	0.201%	45	0.8%	10,690,586	2.580%	P	H								

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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	N	O2	S	T	M	Sal	
Nitzschia acidoclinata	Pennate Diatom	1,825	0.401%	34	1.7%	21,381,177	5.160%	P	H	3	1	1	2	3	3	1	43.4-I
Nitzschia gracilis	Pennate Diatom	6,206	1.364%	13	5.7%	2,113,816	0.510%	P	H	3		2	2	3	1	1	37.6-I
Aphanochaete repens	Filamentous Green	894	0.196%	47		280,926	0.068%										41.8-I
Sphaerocystis schroederii	Unicellular Green	20,115	4.420%	5		4,485,687	1.083%										26.5-S
Gloeocystis	Colonial Green	42,018	9.234%	2		7,872,951	1.900%										41.6-I
Dispora crucigenioides	Colonial Green	2,682	0.589%	30		37,548	0.009%										
Dictyosphaerium pulchellum	Colonial Green	16,539	3.635%	8		1,101,660	0.266%										
Ankistrodesmus falcatus	Colonial Green	3,129	0.688%	27		182,215	0.044%										36.8-I
Oocystis parva	Colonial Green	3,576	0.786%	24		811,760	0.196%										
Oocystis solitaria	Colonial Green	894	0.196%	47		201,152	0.049%										
Scenedesmus ecornis	Colonial Green	1,788	0.393%	36		49,501	0.012%										34.2-I
Oedogonium	Filamentous Green	4,023	0.884%	21		93,881,780	22.658%										38.2-I
Cosmarium garrolense	Desmid	447	0.098%	55		3,492,977	0.843%										29.1-I
Cosmarium isthmium	Desmid	447	0.098%	55		37,995	0.009%										
Cosmarium reniforme	Desmid	1,788	0.393%	36		23,827,788	5.751%										30.6-I
Cosmarium undulatum var. minutum	Desmid	447	0.098%	55		37,995	0.009%										26.7-S
Cosmarium pyramidatum	Desmid	447	0.098%	55		37,995	0.009%										
Hyalotheca dissiliens	Desmid	5,811	1.277%	16		22,222,357	5.363%										33.2-I
Spondylosium planum	Desmid	8,940	1.965%	11		759,907	0.183%										29.3-I
Staurastrum dejectum	Desmid	447	0.098%	55		37,995	0.009%										
Closterium dianae	Desmid	447	0.098%	55		37,995	0.009%										
Mougeotia	Filamentous Green	1,341	0.295%	39		6,944,500	1.676%										37.5-I
Mougeotia sp. 1 d3-10um KMM Maine	Filamentous Green	2,682	0.589%	30		99,174,130	23.935%										