

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

Station Information

Station Number: W-143	Trip ID: 2006-143	River Basin: Maine Coastal
Waterbody: OTTER POND (T40 MD)		HUC8 Name: Maine Coastal
Town: T40 Md		Latitude: 45 2 27.52 N
Mitigation Monitoring Site: No		Longitude: 68 12 23.09 W

Sample Information

Sample ID: WA-143-2006E (591)	Type of Sample: PLANT RUBBINGS	Date Sampled: 6/21/2006
Bottle #: 591	Sampling Organization: BIOMONITORING UNIT	Taxonomist: ACADEMY OF NATURAL SCIENCES

Classification Attainment

Statutory Class: GPA	Final Determination: A	Date: 9/4/2019
Model Result with $P \geq 0.6$: A	Reason for Determination: Model L&w	
Date Last Calculated: 10/5/2020	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	0.158	>0.09
Relative Density of Eutrophentic Diatoms	0.103	<0.15
Relative Richness of Oligosaprobic Diatoms	0.447	>0.37
Relative Richness of Intermediate Taxa	0.596	>0.61
Relative Richness of Sensitive Taxa	0.351	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	27.72	<38

Other Variables

	Density (cells/cm ²)	Relative Density	Richness	Relative Richness	Biovolume (um ³ /cm ²)	Relative Biovolume
Total for Sample	175,170	-	76	-	153,959,641	-
Diatom Only	71,787	-	60	-	74,252,812	-
MTI Sensitive	50,546	0.524	20	0.351	15,230,896	0.127
MTI Intermediate	44,188	0.458	34	0.596	102,572,699	0.852
MTI Eurytopic	1,756	0.018	3	0.053	2,517,852	0.021
Ratio of MTI:						
Sensitive to Eurytopic	28.786	28.786	6.667	6.667	6.049	6.049

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Water Chemistry

Sample Date: 6/21/2006 1:45:00 AM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chlorophyll A	0.0033	mg/l	
Grab Sample	Chlorophyll A - Phaeophytin	0.0032	mg/l	
Grab Sample	Dissolved Organic Carbon	8.3	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen		mg/l	U
Grab Sample	Orthophosphate As Phosphorus	1	ug/l	
Grab Sample	pH	6.7		
Grab Sample	Silica	7.1	mg/l	
Grab Sample	Specific Conductance	28.4	us/cm	
Grab Sample	Total Alkalinity	8	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	0.01	mg/l	
Grab Sample	True Color	100	unit	
In-situ	Dissolved Oxygen	7.4	mg/l	
In-situ	pH	6.17		
In-situ	Specific Conductance	26	us/cm	
In-situ	Temperature	22.7	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	1852	High Int. Dev. %	0.0	Water %	0.3	Non-vegetated %	0.0
		Med Int. Dev. %	0.0	Wetland %	15.8	Tilled Agriculture %	0.0
		Low Int. Dev. %	0.0	Upland Woody %	83.9	Grassland %	0.0
		Development %	0.0	Natural %	99.6	Human Altered %	0.0
						Impervious %	0.0
Total Land (ac)	1845	High Int. Dev. %	0.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.0	Wetland %	15.8	Tilled Agriculture %	0.0
		Low Int. Dev. %	0.0	Upland Woody %	84.2	Grassland %	0.0
		Development %	0.0	Natural %	100.0	Human Altered %	0.0
						Impervious %	0.0

Summary of Habitat Characteristics

Human Disturbance

Total Score:	4
Hydrologic Modifications to Wetland:	1
Vegetative Modifications to Wetland:	0
Evidence of Chemical Pollutants:	0
Impervious Surface in Watershed:	1
Potential for NPS Pollution:	2

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Summary of Habitat Characteristics

Dominant Plant Species: RUSHES, 3-WAY SEDGE

Additional Plant Community Observations:

Habitat Classification: EMERGENT PERSISTENT VEGETATION	Substrate Classification: DETRITUS SUBSTRATE
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Visible Flow: Rain In Previous 24 Hours: Unknown

Sample Comments: No comments

Dominant Plant Species: RUSHES, 3-WAY SEDGE

Additional Plant Community Observations:

Habitat Classification:	Substrate Classification: DETRITUS SUBSTRATE
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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	37,329	0.520	6	0.100	36,463,484	0.491
Variable	2,513	0.035	4	0.067	446,104	0.006
Erect	12,682	0.177	17	0.283	17,199,643	0.232
Stalked	4,188	0.058	8	0.133	2,144,436	0.029
Prostrate	15,075	0.210	25	0.417	17,999,145	0.242
Motile	9,811	0.137	20	0.333	17,098,455	0.230

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Additional Summary Variables

Station Number: W-143 Waterbody: OTTER POND (T40 MD) Town: T40 Md
Sample ID: WA-143-2006E (591) Bottle #: 591 Calculated: 10/5/2020

	Density (cells/cm ²)	Relative Density	Richness	Relative Richness	Biovolume (um ³ /cm ²)	Relative Biovolume
Taxa Group:						
Pennate Diatom	63,053	0.360	56	0.737	69,432,504	0.451
Centric Diatom	8,734	0.050	4	0.053	4,820,308	0.031
Cyanobacteria	56,597	0.323	4	0.053	1,166,707	0.008
Filamentous Cyanobacteria	56,597	0.323	4	0.053	1,166,707	0.008
Green Algae	44,678	0.255	10	0.132	76,281,517	0.495
Colonial Green	11,122	0.063	2	0.026	448,445	0.003
Filamentous Green	22,910	0.131	5	0.066	58,506,518	0.380
Unicellular Green	10,111	0.058	1	0.013	15,188,673	0.099
Desmid	536	0.003	2	0.026	2,137,881	0.014
Red Algae	0	0.000	0	0.000	0	0.000
Euglenoid	1,517	0.009	1	0.013	2,229,057	0.014
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	591	0.003	1	0.013	29,548	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	49,652	0.828	26	0.578	48,937,172	0.871
Low Oxygen	838	0.014	2	0.044	1,481,764	0.026
N-Autotrophic	47,020	0.780	25	0.532	44,907,236	0.797
N-Heterotrophic	838	0.014	2	0.043	1,481,764	0.026
Oligosaprobic	18,186	0.302	21	0.447	12,652,014	0.225
Polysaprobic	1,196	0.020	3	0.064	3,447,311	0.061
Oligotrophentic	7,179	0.126	10	0.263	3,072,468	0.055
Eutrophentic	5,863	0.103	8	0.211	3,501,752	0.063
Acidobiontic	3,111	0.048	2	0.040	1,566,985	0.026
Brackish	120	0.002	1	0.020	12,383	0.000
Dry Condition	957	0.019	2	0.043	305,745	0.008

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Bottle # : 591

Waterbody: Otter Pond (t40 Md) - W-143

Town: T40 Md

Sample ID: WA-143-2006E (591)

Station Number: W-143

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				
<i>Cylindrospermum</i>	Filamentous Cyanobacteria	1,960	1.119%	18		37,521	0.024%											
<i>Komvophoron schmidlei</i>	Filamentous Cyanobacteria	36,904	21.068%	1		787,691	0.512%											
<i>Geitlerinema splendidum</i>	Filamentous Cyanobacteria	16,177	9.235%	3		310,106	0.201%											22.1-S
<i>Hapalosiphon</i>	Filamentous Cyanobacteria	1,556	0.888%	20		31,390	0.020%											25.2-S
<i>Aulacoseira ambigua</i>	Centric Diatom	4,068	2.322%	10	5.7%	1,440,942	0.936%	U	N	4	2	3	2	5	1	2		19.3-S
<i>Aulacoseira nygaardii</i>	Centric Diatom	2,034	1.161%	17	2.8%	1,858,169	1.207%	U	N									
<i>Aulacoseira valida</i>	Centric Diatom	239	0.137%	58	0.3%	324,755	0.211%	U	N									
<i>Aulacoseira lirata var. biseriata</i>	Centric Diatom	2,393	1.366%	14	3.3%	1,196,443	0.777%	U	N									
<i>Fragilaria gracilis</i>	Pennate Diatom	957	0.546%	27	1.3%	173,620	0.113%	V	N	3	1	1	1	2		2		39.1-I
<i>Fragilariforma constricta</i>	Pennate Diatom	120	0.068%	75	0.2%	132,207	0.086%	V	N	2	1		1	1	2	1		
<i>Meridion circulare</i>	Pennate Diatom	718	0.410%	33	1.0%	323,272	0.210%	E	N	4	2	2	2	7	1	2		40.8-I
<i>Meridion circulare var. constrictum</i>	Pennate Diatom	120	0.068%	75	0.2%	19,766	0.013%	E	N	4	2	2	2	7	2	2		43.8-I
<i>Staurosira construens var. venter</i>	Pennate Diatom	1,196	0.683%	23	1.7%	109,909	0.071%	V	N	4	2	1	2	4	1	2		32.4-I
<i>Staurosirella pinnata</i>	Pennate Diatom	239	0.137%	58	0.3%	30,368	0.020%	V	N	4	2	1	2	7	3	2		48.5-I
<i>Staurosirella martyi</i>	Pennate Diatom	239	0.137%	58	0.3%	178,096	0.116%	E	N									
<i>Ulnaria acus</i>	Pennate Diatom	120	0.068%	75	0.2%	133,018	0.086%	E	N	4	2	2	3	5	2	2		57.4-E
<i>Ulnaria ulna</i>	Pennate Diatom	359	0.205%	47	0.5%	1,965,547	1.277%	E	N	4	2	3	4		2	2		44.5-I
<i>Tabellaria fenestrata</i>	Pennate Diatom	10,409	5.942%	5	14.5%	22,745,538	14.774%	U	N	3	1	1	2	2		1		29.1-I
<i>Tabellaria flocculosa</i>	Pennate Diatom	18,186	10.382%	2	25.3%	8,897,638	5.779%	U	N	2	1	1	2	3	3	1		24.7-S
<i>Achnanthydium exiguum</i>	Pennate Diatom	479	0.273%	39	0.7%	17,581	0.011%	P	N	4	2	1	2	7	3	2		35.9-I
<i>Achnanthydium minutissimum</i>	Pennate Diatom	120	0.068%	75	0.2%	3,230	0.002%	P	N	6	2	1	2	7	3	2		49.5-I
<i>Planothidium rostratum</i>	Pennate Diatom	239	0.137%	58	0.3%	21,541	0.014%	P	V	4	2	3	3	5	3	2		43.1-I
<i>Psammothidium bioretii</i>	Pennate Diatom	479	0.273%	39	0.7%	157,346	0.102%	P	V	3	1	1	1	3	4	2		27.3-I
<i>Rossithidium linearis</i>	Pennate Diatom	3,948	2.254%	11	5.5%	700,991	0.455%	P	V	3								32.1-I
<i>Actinella punctata</i>	Pennate Diatom	120	0.068%	75	0.2%	36,890	0.024%	E	N									1-S
<i>Eunotia bilunaris</i>	Pennate Diatom	718	0.410%	33	1.0%	206,221	0.134%	E	V	6	2	2	2	7	3	2		36.1-I
<i>Eunotia mucophila</i>	Pennate Diatom	479	0.273%	39	0.7%	148,399	0.096%	E	V	2	2	2	1	2	4	2		20-S
<i>Eunotia flexuosa</i>	Pennate Diatom	3,709	2.117%	12	5.2%	7,451,336	4.840%	E	V	2	1	1	1	2	3	1		27.2-I
<i>Eunotia glacialis</i>	Pennate Diatom	120	0.068%	75	0.2%	18,186	0.012%	E	V	2	1	1	1	2	3	1		11.4-S
<i>Eunotia implicata</i>	Pennate Diatom	359	0.205%	47	0.5%	963,096	0.626%	E	V	2					3	1		35.7-I
<i>Eunotia incisa</i>	Pennate Diatom	2,273	1.298%	15	3.2%	660,903	0.429%	E	V	2	1	1	1	1	2	1		28-I
<i>Eunotia monodon</i>	Pennate Diatom	120	0.068%	75	0.2%	262,138	0.170%	E	V	2	1	1	1	1	2	1		
<i>Eunotia nymanniana</i>	Pennate Diatom	239	0.137%	58	0.3%	36,611	0.024%	E	V	2	1		1	1		1		18.3-S
<i>Eunotia pectinalis</i>	Pennate Diatom	2,034	1.161%	17	2.8%	4,423,372	2.873%	E	V	2	2	1	2	3	3	1		28.4-I
<i>Eunotia rhomboidea</i>	Pennate Diatom	718	0.410%	33	1.0%	238,790	0.155%	E	V	2	1	1	1	1	3	1		19.8-S
<i>Eunotia septentrionalis</i>	Pennate Diatom	239	0.137%	58	0.3%	134,002	0.087%	E	V	2	1	1	1	1	3	1		17.4-S
<i>Encyonema silesiacum</i>	Pennate Diatom	120	0.068%	75	0.2%	32,255	0.021%	S	V	3	2	3	3	7	1	2		45.6-I
<i>Encyonema neogratile</i>	Pennate Diatom	2,752	1.571%	13	3.8%	794,547	0.516%	S	V	2	1	1	1	2	3	1		18.2-S
<i>Cymbopleura naviculiformis</i>	Pennate Diatom	239	0.137%	58	0.3%	20,419	0.013%	S	V	3	2	2	2	5	2	2		29.2-I
<i>Amphora copulata</i>	Pennate Diatom	120	0.068%	75	0.2%	81,784	0.053%	P	M	4	2	2	2	5	1	2		52.4-I

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Sample ID: WA-143-2006E (591) **Station Number:** W-143

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			
<i>Gomphonema acuminatum</i>	Pennate Diatom	239	0.137%	58	0.3%	322,284	0.209%	S	N	4	1	2	2	5	2	2	41.4-I	
<i>Gomphonema affine</i>	Pennate Diatom	359	0.205%	47	0.5%	420,864	0.273%	S	N	4	1	1	2	3	3	2	25.8-S	
<i>Gomphonema gracile</i>	Pennate Diatom	120	0.068%	75	0.2%	86,736	0.056%	S	N	3	1	1	1	3	3	2	38.6-I	
<i>Gomphonema cf. parvulum</i> <i>MESLAP4</i>	Pennate Diatom	239	0.137%	58	0.3%	311,554	0.202%	S	N	3	3	4	4	5	3	2	36.7-I	
<i>Gomphonema italicum</i>	Pennate Diatom	120	0.068%	75	0.2%	155,776	0.101%	S	N								69.7-E	
<i>Brachysira microcephala</i>	Pennate Diatom	838	0.478%	29	1.2%	58,509	0.038%	P	M	4	1	2	1	2	2	2	29.4-I	
<i>Cavinula pseudoscutiformis</i>	Pennate Diatom	120	0.068%	75	0.2%	17,296	0.011%	P	M	4	1	2	2	4	3	2	11.7-S	
<i>Frustulia crassinervia</i>	Pennate Diatom	1,196	0.683%	23	1.7%	714,077	0.464%	P	M	1	1	1	1	1	3	1	17.1-S	
<i>Frustulia saxonica</i>	Pennate Diatom	1,914	1.093%	19	2.7%	852,908	0.554%	P	M	1	1	1	1	1	3	1	12.4-S	
<i>Navicula notha</i>	Pennate Diatom	120	0.068%	75	0.2%	23,898	0.016%	P	M								28.4-I	
<i>Navicula ruttnerii var. capitata</i>	Pennate Diatom	359	0.205%	47	0.5%	32,015	0.021%	P	M									
<i>Neidium ampliatum</i>	Pennate Diatom	359	0.205%	47	0.5%	2,627,389	1.707%	P	M	3					2	3	2	29-I
<i>Neidium bisulcatum</i>	Pennate Diatom	120	0.068%	75	0.2%	14,656	0.010%	P	M	3	1	1	1	1	3	1		
<i>Nupela neglecta</i>	Pennate Diatom	359	0.205%	47	0.5%	5,514	0.004%	P	M									
<i>Pinnularia gibba</i>	Pennate Diatom	718	0.410%	33	1.0%	684,846	0.445%	P	M	3	2	3	3	7	2	2	22.2-S	
<i>Pinnularia interrupta</i>	Pennate Diatom	359	0.205%	47	0.5%	269,350	0.175%	P	M	3	1	1	1	2	3	1	22.2-S	
<i>Pinnularia microstauron</i>	Pennate Diatom	120	0.068%	75	0.2%	91,625	0.060%	P	M	3	2	3	2	7	3	2	36.7-I	
<i>Placoneis clementis</i>	Pennate Diatom	120	0.068%	75	0.2%	12,383	0.008%	P	M	4	2	1	2	4	3	3		
<i>Sellaphora laevis</i>	Pennate Diatom	239	0.137%	58	0.3%	266,202	0.173%	P	M	3	1	1	1	3	2	1	32.1-I	
<i>Sellaphora seminulum</i>	Pennate Diatom	598	0.342%	34	0.8%	1,170,210	0.760%	P	M	3	3	4	4	5	3	2	48.7-I	
<i>Sellaphora pseudoventralis</i>	Pennate Diatom	957	0.546%	27	1.3%	155,313	0.101%	P	M	4	1	1	1	2	3	2	21.2-S	
<i>Stauroneis anceps</i>	Pennate Diatom	120	0.068%	75	0.2%	183,713	0.119%	P	M	3	2	2	2	4	2	2	29.2-I	
<i>Stenopterobia curvula</i>	Pennate Diatom	239	0.137%	58	0.3%	26,177	0.017%	P	H	2	1	1	1	1	2	1	15.4-S	
<i>Nitzschia cf. gracilis Hantzsch</i>	Pennate Diatom	838	0.478%	29	1.2%	9,810,588	6.372%	P	H									
<i>Tribonema bombycinum</i>	Yellow Green Algae	591	0.337%	35		29,548	0.019%											
<i>Microthamnion kuetzingii</i>	Filamentous Green	14,661	8.369%	4		1,464,856	0.951%											
<i>Ankistrodesmus convolutus</i>	Colonial Green	6,066	3.463%	7		157,761	0.102%											
<i>Ankistrodesmus falcatus</i>	Colonial Green	5,055	2.886%	9		290,684	0.189%										36.8-I	
<i>Bulbochaete</i>	Filamentous Green	1,073	0.613%	24		2,097,105	1.362%											
<i>Oedogonium</i>	Filamentous Green	1,001	0.571%	25		21,841,107	14.186%										38.2-I	
<i>Eudorina elegans</i>	Unicellular Green	10,111	5.772%	6		15,188,673	9.865%											
<i>Cosmarium granatum</i>	Desmid	506	0.289%	36		2,135,318	1.387%										45.1-I	
<i>Pleurotaenium ehrenbergii</i>	Desmid	30	0.017%	76		2,563	0.002%										21.9-S	
<i>Mougeotia</i>	Filamentous Green	5,801	3.312%	8		33,055,374	21.470%										37.5-I	
<i>Cylindrocapsa geminella</i>	Filamentous Green	374	0.213%	40		48,076	0.031%											
<i>Trachelomonas volvocina</i>	Euglenoid	1,517	0.866%	21		2,229,057	1.448%										54.7-E	