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

Station Information

Station Number: W-111 Trip ID: 2003-111 River Basin: Androscoggin
Waterbody: FOX POND INLET HUC8 Name: Upper Androscoggin
Town: Lower Cupsuptic Twp Latitude: 45 3 45.73 N
Mitigation Monitoring Site: No Longitude: 70 52 51.96 W

Sample Information

Sample ID: WA-111-2003E (372) Type of Sample: PLANT RUBBINGS Date Sampled: 7/2/2003
Bottle # : 372 Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHIGAN STATE UNIVERSITY

Classification Attainment

Statutory Class: **Final Determination: A** Date: 9/4/2019
Model Result with P≥0.6: A **Reason for Determination: Model L&w**
Date Last Calculated: 1/22/2019 Comments:

Model Probabilities

First Stage Model

Class A:	0.82	Class C:	0.00
Class B:	0.18	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	0.82
Class B or C or Non-Attainment	0.18

Model Variables

		Reference Range (10th or 90th percentile value)
Relative Richness of Diatoms in the Eunotiaceae Family	0.111	>0.09
Relative Density of Eutrophentic Diatoms	0.065	<0.15
Relative Richness of Oligosaprobic Diatoms	0.410	>0.37
Relative Richness of Intermediate Taxa	0.761	>0.61
Relative Richness of Sensitive Taxa	0.130	>0.13
Maine Tolerance Index Score for Wetland Epiphytic Algae	33.70	<38

Other Variables

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Total for Sample	23,455	-	63	-	43,227,887	-
Diatom Only	9,938	-	42	-	7,784,252	-
MTI Sensitive	2,134	0.122	6	0.130	4,791,054	0.561
MTI Intermediate	15,167	0.869	35	0.761	3,635,242	0.426
MTI Eurytopic	147	0.008	5	0.109	114,266	0.013
Ratio of MTI:						
Sensitive to Eurytopic	14.531	14.531	1.200	1.200	41.929	41.929

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Water Chemistry

Sample Date: 7/2/2003 10:30:00 AM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Ammonia As Nitrogen	0.01	mg/l	
Grab Sample	Calcium	3.3	mg/l	
Grab Sample	Chloride		mg/l	U
Grab Sample	Chlorophyll A	0.0036	mg/l	
Grab Sample	Dissolved Organic Carbon	11.1	mg/l	
Grab Sample	Magnesium	0.89	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen		mg/l	U
Grab Sample	Orthophosphate As Phosphorus		ug/l	U
Grab Sample	pH	6.5		
Grab Sample	Potassium	0.17	mg/l	
Grab Sample	Sodium	1	mg/l	
Grab Sample	Specific Conductance	28.3	us/cm	
Grab Sample	Total Alkalinity	7	mg/l	
Grab Sample	Total Hardness	12	mg/l	
Grab Sample	Total Kjeldahl Nitrogen (organic And Nh3) As Nitrogen	0.6	mg/l	
Grab Sample	Total Phosphorus Mixed Forms (po4 And Organic) As Phosphorus	0.037	mg/l	
Grab Sample	True Color	80	unit	
In-situ	Dissolved Oxygen	7.9	mg/l	
In-situ	pH	6.45		
In-situ	Specific Conductance	24	us/cm	
In-situ	Temperature	21.4	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	281	High Int. Dev. %	0.0	Water %	3.7	Non-vegetated %	0.1
		Med Int. Dev. %	0.0	Wetland %	0.1	Tilled Agriculture %	0.0
		Low Int. Dev. %	0.9	Upland Woody %	95.3	Grassland %	0.0
		Development %	0.9	Natural %	95.4	Human Altered %	0.9
						Impervious %	0.0
Total Land (ac)	270	High Int. Dev. %	0.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.0	Wetland %	0.1	Tilled Agriculture %	0.0
		Low Int. Dev. %	0.9	Upland Woody %	99.0	Grassland %	0.0
		Development %	0.9	Natural %	99.1	Human Altered %	0.9
						Impervious %	0.0

Summary of Habitat Characteristics

Human Disturbance

Total Score:	5
Hydrologic Modifications to Wetland:	1
Vegetative Modifications to Wetland:	0
Evidence of Chemical Pollutants:	0
Impervious Surface in Watershed:	2
Potential for NPS Pollution:	2

Summary of Habitat Characteristics

Dominant Plant Species: GRASSES, BLUE FLAG IRIS, SEDGES, BUR-REED (SPARGANIUM SP.), WATER CELERY (VALLISNERIA), SPHAGNUM HUMMOCKS WITH IRISES AND ST. JOHN'S WORT

Additional Plant Community Observations:

Habitat Classification:	Substrate Classification:
EMERGENT NON-PERSISTENT VEGETATION	SILT/MUCK SUBSTRATE
EMERGENT PERSISTENT VEGETATION	CLAY SUBSTRATE

Visible Flow: Rain In Previous 24 Hours: Unknown

Sample Comments: ROAD CROSSING IMPOUNDS WATER.

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	1,795	0.181	1	0.024	3,837,101	0.493
Variable	865	0.087	3	0.071	174,489	0.022
Erect	653	0.066	10	0.238	1,082,767	0.139
Stalked	441	0.044	5	0.119	959,929	0.123
Prostrate	6,185	0.622	23	0.548	1,729,966	0.222
Motile	506	0.051	18	0.429	772,147	0.099

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Additional Summary Variables

Station Number: W-111 Waterbody: FOX POND INLET Town: Lower Cupsuptic T

Sample ID: WA-111-2003E (372) Bottle # : 372 Calculated: 1/22/2019

	Density (cells/cm^2)	Relative Density	Richness	Relative Richness	Biovolume (um^3/cm^2)	Relative Biovolume
Taxa Group:						
Pennate Diatom	9,938	0.424	42	0.667	7,784,252	0.180
Centric Diatom	0	0.000	0	0.000	0	0.000
Cyanobacteria	7,818	0.333	4	0.063	96,961	0.002
Filamentous Cyanobacteria	1,564	0.067	3	0.048	56,626	0.001
Green Algae	5,664	0.241	16	0.254	35,241,054	0.815
Colonial Green	1,042	0.044	4	0.063	88,488	0.002
Filamentous Green	3,753	0.160	5	0.079	29,086,521	0.673
Unicellular Green	0	0.000	0	0.000	0	0.000
Desmid	869	0.037	7	0.111	6,066,045	0.140
Red Algae	0	0.000	0	0.000	0	0.000
Euglenoid	0	0.000	0	0.000	0	0.000
Chrysophyte	35	0.001	1	0.016	105,620	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	3,443	0.805	18	0.500	5,042,062	0.747
Low Oxygen	98	0.023	3	0.083	10,261	0.002
N-Autotrophic	2,725	0.637	17	0.472	4,772,119	0.707
N-Heterotrophic	114	0.027	4	0.111	13,058	0.002
Oligosaprobic	946	0.217	16	0.410	908,105	0.134
Polysaprobic	98	0.022	3	0.077	10,261	0.002
Oligotrophentic	114	0.030	4	0.138	297,351	0.050
Eutrophentic	245	0.065	7	0.241	729,860	0.123
Acidobiontic	0	0.000	0	0.000	0	0.000
Brackish	16	0.004	1	0.025	7,063	0.001
Dry Condition	49	0.011	2	0.051	34,501	0.005

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Bottle # : 372 **Waterbody:** Fox Pond Inlet - W-111 **Town:** Lower Cupsuptic Twp

Sample ID: WA-111-2003E (372) **Station Number:** W-111

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	
Aphanocapsa elachista	Cyanobacteria	6,255	26.667%	1		40,335	0.093%										37-I
Anabaena inaequalis	Filamentous Cyanobacteria	1,355	5.778%	5		53,635	0.124%										
Phormidium	Filamentous Cyanobacteria	35	0.148%	36		2,018	0.005%										
Phormidium minnesotense	Filamentous Cyanobacteria	174	0.741%	16		973	0.002%										32.8-I
Fragilaria tenera	Pennate Diatom	196	0.835%	14	2.0%	65,095	0.151%	V	N	2	1	1	1	2	2	1	41.5-I
Fragilaria sepes	Pennate Diatom	16	0.070%	63	0.2%	3,483	0.008%	V	N	3	1	1	1	2	2	1	38.7-I
Meridion circulare	Pennate Diatom	33	0.139%	52	0.3%	35,774	0.083%	E	N	4	2	2	2	7	1	2	40.8-I
Meridion circulare var. constrictum	Pennate Diatom	16	0.070%	63	0.2%	8,049	0.019%	E	N	4	2	2	2	7	2	2	43.8-I
Pseudostaurosira brevistriata	Pennate Diatom	33	0.139%	52	0.3%	10,495	0.024%	E	N	4	1	1	1	7	2	2	34.9-I
Staurosira construens var. venter	Pennate Diatom	653	2.783%	8	6.6%	105,911	0.245%	V	N	4	2	1	2	4	1	2	32.4-I
Tabellaria flocculosa	Pennate Diatom	1,795	7.653%	4	18.1%	3,837,101	8.876%	U	N	2	1	1	2	3	3	1	24.7-S
Achnanthidium minutissimum	Pennate Diatom	49	0.209%	31	0.5%	3,904	0.009%	P	N	6	2	1	2	7	3	2	49.5-I
Achnanthidium rivulare	Pennate Diatom	65	0.278%	27	0.7%	6,355	0.015%	P	N								48-I
Psammothidium helveticum	Pennate Diatom	33	0.139%	52	0.3%	6,723	0.016%	P	V	4	2	2	1	3	3	1	
Psammothidium subatomoides	Pennate Diatom	33	0.139%	52	0.3%	1,991	0.005%	P	V	2	1	1	1	2	1	1	27.6-I
Rossithidium linearis	Pennate Diatom	5,499	23.446%	2	55.3%	938,846	2.172%	P	V	3							32.1-I
Eunotia bilunaris	Pennate Diatom	147	0.626%	17	1.5%	201,626	0.466%	E	V	6	2	2	2	7	3	2	36.1-I
Eunotia flexuosa	Pennate Diatom	261	1.113%	10	2.6%	383,930	0.888%	E	V	2	1	1	1	2	3	1	27.2-I
Eunotia incisa	Pennate Diatom	33	0.139%	52	0.3%	43,785	0.101%	E	V	2	1	1	1	1	2	1	28-I
Eunotia minor	Pennate Diatom	16	0.070%	63	0.2%	23,078	0.053%	E	V	2			1		4	1	38-I
Eunotia naegelii	Pennate Diatom	16	0.070%	63	0.2%	10,881	0.025%	E	V	2	1	1	1	1	3	1	28.5-I
Eunotia pectinalis var. undulata	Pennate Diatom	49	0.209%	31	0.5%	213,945	0.495%	E	V	2	2	1	2	1	3	1	31-I
Eunotia praerupta	Pennate Diatom	49	0.209%	31	0.5%	151,203	0.350%	E	V	2	1	1	1	2	3	1	28.5-I
Encyonema silesiacum	Pennate Diatom	196	0.835%	14	2.0%	90,157	0.209%	S	V	3	2	3	3	7	1	2	45.6-I
Encyonema neogracile	Pennate Diatom	82	0.348%	23	0.8%	108,046	0.250%	S	V	2	1	1	1	2	3	1	18.2-S
Cymbopleura naviculiformis	Pennate Diatom	82	0.348%	23	0.8%	668,934	1.547%	S	V	3	2	2	2	5	2	2	29.2-I
Gomphonema gracile	Pennate Diatom	65	0.278%	27	0.7%	40,533	0.094%	S	N	3	1	1	1	3	3	2	38.6-I
Gomphonema truncatum	Pennate Diatom	16	0.070%	63	0.2%	52,260	0.121%	S	N	4	1	2	2	4	2	2	54.3-E
Cavinula pseudoscutiformis	Pennate Diatom	16	0.070%	63	0.2%	1,558	0.004%	P	M	4	1	2	2	4	3	2	11.7-S
Frustulia krammeri	Pennate Diatom	16	0.070%	63	0.2%	28,740	0.066%	P	M	2	1	1	1	1	2	1	16.6-S
Navicula cryptocephala	Pennate Diatom	33	0.139%	52	0.3%	13,203	0.031%	P	M	4	2	3	3	7	2	2	66.2-E
Navicula cryptotenella	Pennate Diatom	33	0.139%	52	0.3%	12,628	0.029%	P	M	4			2	7	2	2	52.4-I
Navicula subrotundata	Pennate Diatom	33	0.139%	52	0.3%	930	0.002%	P	M	4			1			2	42.4-I
Neidium ampliatum	Pennate Diatom	16	0.070%	63	0.2%	53,516	0.124%	P	M	3				2	3	2	29-I
Pinnularia appendiculata	Pennate Diatom	33	0.139%	52	0.3%	11,423	0.026%	P	M	2	1	1	1	2	4	1	
Pinnularia subcapitata	Pennate Diatom	33	0.139%	52	0.3%	31,212	0.072%	P	M	2	2	3	2	2	3	2	31.5-I
Pinnularia viridis	Pennate Diatom	16	0.070%	63	0.2%	520,482	1.204%	P	M	3	2	3	2	7	3	2	25.8-S
Sellaphora laevissima	Pennate Diatom	33	0.139%	52	0.3%	17,769	0.041%	P	M	3	1	1	1	3	2	1	32.1-I
Sellaphora pupula	Pennate Diatom	49	0.209%	31	0.5%	15,934	0.037%	P	M	3	2	3	3	4	2	2	51.3-I
Sellaphora seminulum	Pennate Diatom	33	0.139%	52	0.3%	2,264	0.005%	P	M	3	3	4	4	5	3	2	48.7-I

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Bottle # : 372 **Waterbody:** Fox Pond Inlet - W-111 **Town:** Lower Cupsuptic Twp

Sample ID: WA-111-2003E (372) **Station Number:** W-111

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	
Eolimna minima	Pennate Diatom	33	0.139%	52	0.3%	1,775	0.004%	P	M	4	3	4	4	5	3	2	53.2-E
Surirella angusta	Pennate Diatom	33	0.139%	52	0.3%	40,805	0.094%	P	H	4	2	2	2	5	3	2	56.3-E
Nitzschia acidoclinata	Pennate Diatom	33	0.139%	52	0.3%	3,826	0.009%	P	H	3	1	1	2	3	3	1	43.4-I
Nitzschia palea	Pennate Diatom	33	0.139%	52	0.3%	6,221	0.014%	P	H	3	4	4	5	6	3	2	52.5-E
Nitzschia paleacea	Pennate Diatom	16	0.070%	63	0.2%	2,797	0.006%	P	H	4	4	3	3	5	2	2	49-I
Tryblionella gracilis	Pennate Diatom	16	0.070%	63	0.2%	7,063	0.016%	P	H	4	2	3	3	5	3	3	30.7-I
Derepyxis amphora	Chrysophyte	35	0.148%	36		105,620	0.244%										
Undetermined green coccoid 8-10µm	Colonial Green	139	0.593%	19		49,076	0.114%										
Chaetosphaeridium globosum	Filamentous Green	139	0.593%	19		84,207	0.195%										
Gloeocystis sp. 2 MESLAP	Colonial Green	35	0.148%	36		9,348	0.022%										
Ankistrodesmus falcatus	Colonial Green	35	0.148%	36		1,273	0.003%										36.8-I
Scenedesmus ecornis	Colonial Green	834	3.556%	7		28,791	0.067%										34.2-I
Bulbochaete	Filamentous Green	834	3.556%	7		6,423,641	14.860%										
Oedogonium 5-7µm	Filamentous Green	2,259	9.630%	3		2,153,157	4.981%										
Arthrodesmus indentatus var. rectangularis	Desmid	69	0.296%	25		94,599	0.219%										
Cosmarium abbreviatum	Desmid	35	0.148%	36		5,662	0.013%										
Cosmarium cf. undulatum var. minutum	Desmid	104	0.444%	21		131,283	0.304%										
Cosmarium granatum	Desmid	69	0.296%	25		407,955	0.944%										45.1-I
Cosmarium portianum	Desmid	208	0.889%	12		4,979,965	11.520%										
Euastrum insulare var. silesiacum	Desmid	174	0.741%	16		151,453	0.350%										
Euastrum pulchellum	Desmid	208	0.889%	12		295,128	0.683%										15-S
Mougeotia 5-7µm	Filamentous Green	417	1.778%	9		1,179,314	2.728%										
Mougeotia 30-40µm	Filamentous Green	104	0.444%	21		19,246,202	44.523%										