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

Station Information

Station Number: W-105 Trip ID: 2003-105 River Basin: Penobscot
Waterbody: WHEELER STREAM - HERMON BOG HUC8 Name: Lower Penobscot
Town: Hermon Latitude: 44 47 54.68 N
Mitigation Monitoring Site: No Longitude: 68 52 57.07 W

Sample Information

Sample ID: DN-2003-105 Type of Sample: DIPNET Sampling Organization: BIOMONITORING UNIT
Date Sampled: 6/26/2003 Replicates: 3 Taxonomist: LOTIC INC.
Subsample Factor: X1

Classification Attainment

Statutory Class: B **Final Determination: C** Date: 1/8/2013
Model Result with P≥0.6: C **Reason for Determination: Model**
Date Last Calculated: 12/18/2018 Comments:

Model Probabilities

First Stage Model

Class A: 0.00 Class C: 0.84
Class B: 0.16 NA: 0.00

B or Better Model

Class A or B 0.16
Class C or Non-Attainment 0.84

C or Better Model

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

A Model

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

Model Variables

		Reference Range (10th or 90th percentile value)
Abundance of Taxa in the Order Ephemeroptera	1.000	≥ 0.000
Relative Richness of Taxa in the Orders Ephemeroptera, Odonata and Tricoptera	0.143	≥ 0.140
Shannon-Wiener Diversity Index	2.589	≥ 2.497
Relative Abundance of Collector-Gatherer Taxa	0.713	≥ 0.131
Abundance of Sensitive Taxa	4.333	≥ 3.424
Richness of Sensitive Taxa	4.000	≥ 3.000
Maine Tolerance Index Score For Wetland Macroinvertebrates	28.990	≤ 29.776
Ratio of MTI Sensitive to Eurytopic Taxa Abundance	0.392	≥ 0.334

Other Variables

Total Mean Abundance	116
Generic Richness:	42
Hilsenhoff Biotic Index:	7.96

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	*Hyalella azteca*	65.80
2	*Cricotopus*	3.45
3	*Ablabesmyia*	2.59
4	*Cipangopaludina*	2.30
4	*Notonectidae*	2.30
5	*Psectrocladius*	2.01

Surface Water Chemistry

Sample Date: 6/26/2003 11:00:00 AM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Ammonia As Nitrogen		mg/l	U
Grab Sample	Calcium	18	mg/l	
Grab Sample	Chloride	17	mg/l	
Grab Sample	Chlorophyll A	0.004	mg/l	
Grab Sample	Dissolved Organic Carbon	23	mg/l	
Grab Sample	Magnesium	4.3	mg/l	
Grab Sample	Nitrate + Nitrite As Nitrogen		mg/l	U
Grab Sample	Orthophosphate As Phosphorus	5	ug/l	
Grab Sample	pH	6.6		
Grab Sample	Potassium	0.5	mg/l	
Grab Sample	Sodium	11	mg/l	
Grab Sample	Specific Conductance	183	us/cm	
Grab Sample	Total Alkalinity	54	mg/l	
Grab Sample	Total Hardness	62.653	mg/l	
Grab Sample	Total Kjeldahl Nitrogen (organic And Nh3) As Nitrogen	1.1	mg/l	
Grab Sample	Total Phosphorus	0.079	mg/l	
Grab Sample	True Color	230	unit	
In-situ	Dissolved Oxygen		mg/l	U
In-situ	pH	6.57		
In-situ	Specific Conductance	169	us/cm	
In-situ	Temperature	23.5	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	6944	High Int. Dev. %	1.0	Water %	0.3	Non-vegetated %	0.0
		Med Int. Dev. %	1.2	Wetland %	23.7	Tilled Agriculture %	6.8
		Low Int. Dev. %	6.1	Upland Woody %	47.1	Grassland %	9.7
		Development %	8.4	Natural %	70.8	Human Altered %	28.9
						Impervious %	5.8
Total Land (ac)	6921	High Int. Dev. %	1.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	1.2	Wetland %	23.8	Tilled Agriculture %	6.8
		Low Int. Dev. %	6.1	Upland Woody %	47.2	Grassland %	9.7
		Development %	8.4	Natural %	71.0	Human Altered %	29.0
						Impervious %	5.8

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Summary of Habitat Characteristics

Human Disturbance		Landscape-level Cowardin Classification		Hydrogeomorphic Setting	
Total Score:	19	System:	PALUSTRINE	Landscape Position:	LOTIC STREAM
Hydrologic Modifications:	4	Subsystem:		Lotic Gradient:	LOW GRADIENT
Vegetative Modifications:	3	Class 1:	SCRUB SHRUB	Flow Path:	THROUGHFLOW
Chemical Contaminants	0	Subclass 1:	BROAD-LEAVED DECIDUOUS	Land Form:	FRINGE
Impervious Surface:	7				
Non-point Sources:	5	Class 2:		Land Form Type:	LOTIC STREAM
		Subclass 2:		Waterbody Type:	STREAM
		Class 3:		Waterbody Subtype:	
		Subclass 3:			
				Comments:	

Dominant Plant Species: PICKERELWEED (PONTEDERIA CORDATA), NUPHAR, CATTAIL, SWEET GALE, DUCKWEED (LEMNA), POTAMOGETON, BLADDERWORT SPP. (UTRICULARIA), WILLOW, ALDER

Additional Plant Community Observations:

Habitat Classification:

EMERGENT NON-PERSISTENT VEGETATION

EMERGENT PERSISTENT VEGETATION

Substrate Classification:

Average Depth: 34 cm

Sample Comments: A LARGE AMOUNT OF FLOATING ALGAE, A DIATOM BLOOM?
J INDICATES O.D. @664NM <0.1 OR >1.0 STD METH ED 20, 10200H. THE INITIAL CALIBRATION VERIFICATION FOR POTASSIUM WERE SLIGHTLY OUTSIDE THE METHOD LIMIT OF +-5%. CONTINUING CHECKS DURING RUN WERE SATISFACTORY.

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Additional Summary Variables

Station Number: W-105 Waterbody: WHEELER STREAM - HERMON BOG Town: Hermon

Log Number: DN-2003-105 Subsample Factor: X1 Replicates: 3 Calculated: 12/18/2018

	Abundance	Relative Abundance	Richness	Relative Richness
EOT Taxa:	4.67	0.040	6	0.14
EPT Taxa:	2.33	0.020	4	0.10
Insects:	32.33	0.279	31	0.74
Non-Insects:	83.67	0.721	11	0.26
Leeches:	0.00	0.000	0	0.00
Oligochaetes:	0.67	0.006	2	0.05
Snails:	4.67	0.040	4	0.10
Bivalves:	1.33	0.011	2	0.05
Isopods:	0.00	0.000	0	0.00
Amphipods:	76.33	0.658	1	0.02
Mites:	0.67	0.006	2	0.05
Stoneflies:	0.00	0.000	0	0.00
Mayflies:	1.00	0.009	2	0.05
Odonates:	2.33	0.020	2	0.05
Caddisflies:	1.33	0.011	2	0.05
Diptera:	15.67	0.135	13	0.31
Hemiptera:	4.67	0.040	4	0.10
Beetles:	6.67	0.057	6	0.14
Chironomids:	15.67	0.135	13	0.31
Tanypodinae Tribe:	3.67	0.032	3	0.07
Chironomiinae Tribe:	5.00	0.043	7	0.17
Orthoclodiinae Tribe:	7.00	0.060	3	0.07
Collector-Filterers:	1.67	0.014	3	0.07
Collector-Gatherers:	82.67	0.713	8	0.19
Predators:	12.00	0.103	10	0.24
Piercers:	0.33	0.003	1	0.02
Shredders:	6.67	0.057	5	0.12
Scrapers:	4.67	0.040	4	0.10
Maine Tolerance:				
Sensitive:	4.33	0.039	4	0.11
Intermediate:	94.62	0.860	22	0.63
Eurytopic:	11.05	0.100	9	0.26
Ratio of MTI Sensitive to Eurytopic	0.39	0.392	0.44	0.44

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Aquatic Life Taxonomic Inventory Report

Station Number: W-105 Waterbody: WHEELER STREAM - HERMON BOG Town: Hermon

Log Number: DN-2003-105 Subsample Factor: X1 Replicates: 3 Calculated: 12/18/2018

Taxon	Maine Taxonomic Code	Count (Mean of Samples) Actual	Adjusted	Hilsenhoff Biotic Index	Functional Feeding Group	Maine Tolerance Index	Tribe	Taxa Group
Lumbriculus	08020101002	0.33	0.33	--	CG	35-I	--	Worm
Nais	08020202009	0.33	0.33	--	CG	43-E	--	Worm
Hyalella	09010203006	0.00	76.33	8	CG	24.5-I	--	Amphipod
Hyalella azteca	09010203006011	76.33	0.00	--	--	--	--	Amphipod
Lestes	09020308045	1.33	1.33	9	PR	32.6-I	--	Dragonfly/damselfly
Enallagma	09020309051	1.00	1.00	9	PR	26.2-I	--	Dragonfly/damselfly
Callibaetis	09020401002	0.67	0.67	9	CG	40.5-I	--	Mayfly
Caenis	09020412040	0.33	0.33	7	CG	22.1-I	--	Mayfly
Corixidae	09020501	0.67	0.67	--	--	--	--	True Bug
Belostomatidae	09020502	0.33	0.33	--	--	--	--	True Bug
Notonectidae	09020505	2.67	2.67	--	--	--	--	True Bug
Neoplea	09020512016	1.00	1.00	--	PR	35.5-I	--	True Bug
Limnephilus	09020610055	0.33	0.33	3	SH	24.6-I	--	Caddisfly
Triaenodes	09020618077	1.00	1.00	6	SH	19.3-S	--	Caddisfly
Pyralidae	09020901	0.33	0.33	--	--	--	--	Moth
Synclita	09020901007	0.33	0.33	--	SH	--	--	Moth
Ablabesmyia	09021011001	3.00	3.00	8	PR	23.6-I	T	Fly: Midge
Clinotanypus	09021011002	0.33	0.33	8	PR	30.3-I	T	Fly: Midge
Natarsia	09021011011	0.33	0.33	8	PR	43.6-E	T	Fly: Midge
Acricotopus	09021011032	0.67	0.67	10	--	75-E	--	Fly: Midge
Cricotopus	09021011037	4.00	4.00	7	SH	43-E	--	Fly: Midge
Psectrocladius	09021011056	2.33	2.33	8	CG	22-S	--	Fly: Midge
Paratanytarsus	09021011071	0.33	0.33	6	--	43-E	Y	Fly: Midge
Chironomus	09021011080	1.33	1.33	10	CG	27.4-I	C	Fly: Midge
Dicrotendipes	09021011085	1.00	1.00	8	CG	28.8-I	C	Fly: Midge
Microtendipes	09021011094	0.33	0.33	6	CF	22.3-I	C	Fly: Midge
Parachironomus	09021011097	0.33	0.33	10	PR	28.6-I	C	Fly: Midge
Polypedilum	09021011102	1.00	1.00	6	SH	24.2-I	C	Fly: Midge
Omisus	09021011130	0.67	0.67	--	--	20.7-S	H	Fly: Midge
Haliplus	09021101001	0.33	0.33	--	P	67.1-E	--	Beetle
Dytiscidae	09021103	0.33	0.00	--	--	--	--	Beetle
Hydroporus	09021103013	2.00	2.29	--	PR	42.9-I	--	Beetle
Hydaticus	09021103028	0.33	0.38	--	PR	56.9-E	--	Beetle
Tropisternus	09021105038	2.00	2.00	--	PR	61.8-E	--	Beetle
Scirtidae	09021107	0.33	0.33	--	--	--	--	Beetle

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Taxon	Maine Taxonomic Code	Count (Mean of Samples)		Hilsen-hoff Biotic Index	Func-tional Feeding Group	Maine Toler-ance Index	Tribe	Taxa Group
		Actual	Adjusted					
Curculionidae	09021115	1.33	1.33	--	--	--	--	Beetle
Hydrachna	09030103001	0.33	0.33	--	--	30.8-I	--	Mite
Arrenurus	09030111001	0.33	0.33	--	--	23.8-I	--	Mite
Cipangopaludina	10010102003	2.67	2.67	--	SC	88.2-E	--	Snail
Amnicola	10010104013	0.33	0.33	--	SC	18.7-S	--	Snail
Gyraulus	10010203029	1.33	1.33	--	SC	37.2-I	--	Snail
Helisoma	10010203030	0.33	0.33	--	SC	42.8-I	--	Snail
Sphaeriidae	10020201	0.33	0.00	--	CF	--	--	Clam
Musculium	10020201001	0.67	0.89	--	CF	24.8-I	--	Clam
Sphaerium	10020201003	0.33	0.44	--	CF	24.8-I	--	Clam