



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

Station Information

Station Number: W-105	Trip ID: 2011-105	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-2011-105	Type of Sample: DIPNET	Sampling Organization: BIOMONITORING UNIT
Date Sampled: 6/29/2011	Replicates: 3	Taxonomist: LOTIC INC.
Subsample Factor: X1		

Classification Attainment

Statutory Class: B	Final Determination: C	Date: 7/18/2019
Model Result with $P \geq 0.6$: C	Reason for Determination: Model	
Date Last Calculated: 12/20/2018	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A: 0.01	Class C: 0.71	Class A, B, or C	1.00
Class B: 0.29	NA: 0.00	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.29	Class A	0.01
Class C or Non-Attainment	0.71	Class B or C or Non-Attainment	0.99

Model Variables

		<u>Reference Range</u> (10th or 90th percentile value)
Abundance of Taxa in the Order Ephemeroptera	34.667	≥ 0.000
Relative Richness of Taxa in the Orders Ephemeroptera, Odonata and Tricoptera	0.185	≥ 0.140
Shannon-Wiener Diversity Index	3.166	≥ 2.497
Relative Abundance of Collector-Gatherer Taxa	0.646	≥ 0.131
Abundance of Sensitive Taxa	5.000	≥ 3.424
Richness of Sensitive Taxa	5.000	≥ 3.000
Maine Tolerance Index Score For Wetland Macroinvertebrates	29.123	≤ 29.776
Ratio of MTI Sensitive to Eurytopic Taxa Abundance	0.160	≥ 0.334

Other Variables

Total Mean Abundance	503
Generic Richness:	54
Hilsenhoff Biotic Index:	8.07

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hyaella</i>	50.93
2	<i>Hydrobiidae</i>	9.02
3	<i>Callibaetis</i>	6.43
4	<i>Dicrotendipes</i>	5.44
5	<i>Gyraulus</i>	3.98



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Surface Water Chemistry

Sample Date: 6/29/2011 10:00:00 AM

Collection Method	Parameter	Value	Units	Qualifier
Grab Sample	Chloride	19	mg/l	
Grab Sample	Chlorophyll A	0.0037	mg/l	
Grab Sample	Chlorophyll A - Pheophytin	0.003	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	29	ug/l	
Grab Sample	pH	6.9		
Grab Sample	Silica	4.8	mg/l	
Grab Sample	Silicon	2.2	mg/l	
Grab Sample	Specific Conductance	170	umhos/cm	
Grab Sample	Total Alkalinity	57	mg/l	
Grab Sample	Total Kjeldahl Nitrogen (organic And Nh3) As Nitrogen	0.8	mg/l	
Grab Sample	Total Phosphorus	0.08	mg/l	
Grab Sample	True Color	95	unit	
In-situ	Dissolved Oxygen	0.3	mg/l	
In-situ	pH	6.44		
In-situ	Specific Conductance	167	us/cm	
In-situ	Temperature	19.4	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

<u>Human Disturbance</u>	<u>Landscape-level Cowardin Classification</u>	<u>Hydrogeomorphic Setting</u>
Total Score: 19	System: PALUSTRINE	Landscape Position: LOTIC STREAM
Hydrologic Modifications: 4	Subsystem:	Lotic Gradient: LOW GRADIENT
Vegetative Modifications: 0	Class 1: SCRUB SHRUB	Flow Path: THROUGHFLOW
Chemical Contaminants 2	Subclass 1: BROAD-LEAVED	Land Form: FRINGE
Impervious Surface: 7	DECIDUOUS	
Non-point Sources: 6	Class 2:	Land Form Type: LOTIC STREAM
	Subclass 2:	Waterbody Type: STREAM
	Class 3:	Waterbody Subtype:
	Subclass 3:	

Comments:

Dominant Plant Species: YELLOW WATER LILY (NUPHAR VARIEGATA), PICKEREL WEED (PONTEDERIA CORDATA), DUCKWEED (LEMNA SP.), UNKNOWN SUBMERGED WEED

Additional Plant Community Observations:

Habitat Classification:	Substrate Classification:
AQUATIC MACROPHYTE BED	DETRITUS SUBSTRATE
EMERGENT NON-PERSISTENT VEGETATION	SILT/MUCK SUBSTRATE

Average Depth: 42 cm

Sample Comments: COOL, OVERCAST. LOTS OF DUCKWEED. IRRIDESCENT SHEEN ON WATER SURFACE. LARGE INVASIVE CHINESE SNAIL. ALGAL MATS (GREEN AND BROWN ALGAE AND POSSIBLY DIATOMS?) ALSO LARGE BUBBLES ON WATER'S SURFACE AND IN ALGAL MATS. BIOFILM EXTENSIVE ON SURFACE OF WATER.



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Additional Summary Variables

Station Number: W-105 Waterbody: WHEELER STREAM - HERMON BOG Town: Hermon
Log Number: DN-2011-105 Subsample Factor: X1 Replicates: 3 Calculated: 12/20/2018

	Abundance	Relative Abundance	Richness	Relative Richness
EOT Taxa:	48.00	0.095	10	0.19
EPT Taxa:	38.00	0.076	5	0.09
Insects:	122.33	0.243	34	0.63
Non-Insects:	380.33	0.757	20	0.37
Leeches:	14.67	0.029	3	0.06
Oligochaetes:	4.00	0.008	2	0.04
Snails:	98.67	0.196	10	0.19
Bivalves:	5.67	0.011	2	0.04
Isopods:	0.00	0.000	0	0.00
Amphipods:	256.00	0.509	1	0.02
Mites:	1.33	0.003	2	0.04
Stoneflies:	0.00	0.000	0	0.00
Mayflies:	34.67	0.069	3	0.06
Odonates:	10.00	0.020	5	0.09
Caddisflies:	3.33	0.007	2	0.04
Diptera:	55.67	0.111	12	0.22
Hemiptera:	12.00	0.024	4	0.07
Beetles:	6.67	0.013	8	0.15
Chironomids:	55.67	0.111	12	0.22
Tanypodinae Tribe:	2.33	0.005	3	0.06
Chironomiinae Tribe:	48.67	0.097	8	0.15
Orthocloidiinae Tribe:	4.67	0.009	1	0.02
Collector-Filterers:	6.33	0.013	3	0.06
Collector-Gatherers:	324.67	0.646	7	0.13
Predators:	8.67	0.017	9	0.17
Piercers:	4.00	0.008	3	0.06
Shredders:	17.00	0.034	6	0.11
Scrapers:	39.27	0.078	6	0.11
Maine Tolerance:				
Sensitive:	5.00	0.012	5	0.15
Intermediate:	372.67	0.911	18	0.53
Eurytopic:	31.33	0.077	11	0.32
Ratio of MTI Sensitive to Eurytopic	0.16	0.160	0.45	0.45



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Aquatic Life Taxonomic Inventory Report

Station Number: W-105 Waterbody: WHEELER STREAM - HERMON BOG Town: Hermon
Log Number: DN-2011-105 Subsample Factor: X1 Replicates: 3 Calculated: 12/20/2018

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						
Lumbriculidae	08020101	3.67	3.67	--	--	--	--	Worm	
Naididae	08020202	0.33	0.33	--	--	--	--	Worm	
Glossiphoniidae	08030101	1.67	1.67	--	--	--	--	Leech	
Helobdella	08030101005	0.00	11.33	--	--	43-E	--	Leech	
<i>Helobdella modesta</i>	08030101005004	11.33	0.00	--	--	--	--	Leech	
Erpobdellidae	08030203	1.67	1.67	--	--	--	--	Leech	
Hyaella	09010203006	256.00	256.00	8	CG	24.5-I	--	Amphipod	
Aeshnidae	09020301	3.00	3.00	--	--	--	--	Dragonfly/damselfly	
Epiptera	09020305028	0.67	0.67	--	PR	--	--	Dragonfly/damselfly	
Libellulidae	09020306	4.33	4.33	--	--	--	--	Dragonfly/damselfly	
Lestes	09020308045	1.00	1.00	9	PR	32.6-I	--	Dragonfly/damselfly	
Coenagrionidae	09020309	1.00	1.00	--	--	--	--	Dragonfly/damselfly	
Callibaetis	09020401002	32.33	32.33	9	CG	40.5-I	--	Mayfly	
Siphonurus	09020405021	1.67	1.67	7	CG	17-S	--	Mayfly	
Caenis	09020412040	0.67	0.67	7	CG	22.1-I	--	Mayfly	
Corixidae	09020501	6.67	6.67	--	--	--	--	True Bug	
Notonectidae	09020505	2.00	2.00	--	--	--	--	True Bug	
Mesovelia	09020509024	0.67	0.67	--	PR	60.6-E	--	True Bug	
Neoplea	09020512016	2.67	2.67	--	PR	35.5-I	--	True Bug	
Polycentropodidae	09020603	1.00	1.00	--	--	--	--	Caddisfly	
Trienodes	09020618077	2.33	2.33	6	SH	19.3-S	--	Caddisfly	
Ablabesmyia	09021011001	1.00	1.00	8	PR	23.6-I	T	Fly: Midge	
Labrundinia	09021011008	0.00	0.33	7	PR	18.1-S	T	Fly: Midge	
<i>Labrundinia neopilosella</i>	09021011008021	0.33	0.00	--	--	--	T	Fly: Midge	
Procladius	09021011015	1.00	1.00	9	PR	25.1-I	T	Fly: Midge	
Cricotopus	09021011037	0.00	4.67	7	SH	43-E	--	Fly: Midge	
<i>Cricotopus sylvestris group</i>	09021011037079	4.67	0.00	--	SH	--	--	Fly: Midge	
Paratanytarsus	09021011071	4.33	4.33	6	--	43-E	Y	Fly: Midge	
Tanytarsus	09021011076	0.67	0.67	6	CF	25.7-I	Y	Fly: Midge	
Chironomus	09021011080	6.33	6.33	10	CG	27.4-I	C	Fly: Midge	
Dicrotendipes	09021011085	27.33	27.33	8	CG	28.8-I	C	Fly: Midge	
Endochironomus	09021011087	3.00	3.00	10	SH	50.2-E	C	Fly: Midge	
Glyptotendipes	09021011088	2.00	2.00	10	SH	43-E	C	Fly: Midge	
Polypedilum	09021011102	2.00	4.67	6	SH	24.2-I	C	Fly: Midge	
<i>Polypedilum illinoense group</i>	09021011102185	2.67	0.00	--	--	--	C	Fly: Midge	



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Taxon	Maine Taxonomic Code	Count (Mean of Samples)		Hilsen-hoff Biotic Index	Functional Feeding Group	Maine Tolerance Index	Tribe	Taxa	Group
		Actual	Adjusted						
Tribelos	09021011107	0.33	0.33	5	CG	9.3-S	C	Fly:	Midge
Haliphus	09021101001	3.33	3.33	--	P	67.1-E	--	Beetle	
Peltodytes	09021101002	0.33	0.33	--	P	56.2-E	--	Beetle	
Dytiscidae	09021103	0.67	0.67	--	--	--	--	Beetle	
Coptotomus	09021103023	0.33	0.33	--	PR	32-I	--	Beetle	
Tropisternus	09021105038	1.00	1.00	--	PR	61.8-E	--	Beetle	
Berosus	09021105040	0.33	0.33	--	P	87.9-E	--	Beetle	
Scirtes	09021107057	0.33	0.33	--	SH	20.9-S	--	Beetle	
Donacia	09021114071	0.33	0.33	--	--	25.1-I	--	Beetle	
Hydrachna	09030103001	1.00	1.00	--	--	30.8-I	--	Mite	
Sperchon	09030107001	0.33	0.33	--	--	--	--	Mite	
Valvatidae	10010101	0.33	0.33	--	--	--	--	Snail	
Cipangopaludina	10010102003	0.33	0.33	--	SC	88.2-E	--	Snail	
Campeloma	10010102004	3.33	3.33	--	SC	--	--	Snail	
Hydrobiidae	10010104	45.33	45.33	--	--	--	--	Snail	
Lymnaeidae	10010201	10.67	10.67	--	--	--	--	Snail	
Physidae	10010202	3.33	3.33	--	SC	--	--	Snail	
Planorbidae	10010203	0.67	0.00	--	--	--	--	Snail	
Gyraulus	10010203029	20.00	20.40	--	SC	37.2-I	--	Snail	
Helisoma	10010203030	10.33	10.54	--	SC	42.8-I	--	Snail	
Promenetus	10010203034	0.00	3.06	--	--	33.4-I	--	Snail	
<i>Promenetus exacuous</i>	10010203034063	3.00	0.00	--	--	--	--	Snail	
Ancylidae	10010204	1.33	1.33	--	SC	--	--	Snail	
Sphaeriidae	10020201	2.33	2.33	--	CF	--	--	Clam	
Musculium	10020201001	3.33	3.33	--	CF	24.8-I	--	Clam	