



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

Station Information

Station Number: W-109	Trip ID: 2018-109	River Basin: Androscoggin
Waterbody: BUNGANOCK BROOK		HUC8 Name: Lower Androscoggin
Town: Hartford		Latitude: 44 22 45.89 N
Mitigation Monitoring Site: No		Longitude: 70 20 20.9 W

Sample Information

Sample ID: DN-2018-109	Type of Sample: DIPNET	Sampling Organization: BIOMONITORING UNIT
Date Sampled: 6/19/2018	Replicates: 3	Taxonomist: ECOANALYSTS IDAHO
Subsample Factor: X1		

Classification Attainment

Statutory Class: B	Final Determination: A	Date: 10/15/2019
Model Result with $P \geq 0.6$: A	Reason for Determination: Model	
Date Last Calculated: 5/23/2019	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A: 0.81	Class C: 0.01	Class A, B, or C	1.00
Class B: 0.18	NA: 0.00	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.99	Class A	0.81
Class C or Non-Attainment	0.01	Class B or C or Non-Attainment	0.19

Model Variables

		<u>Reference Range</u> (10th or 90th percentile value)
Abundance of Taxa in the Order Ephemeroptera	0.000	≥ 0.000
Relative Richness of Taxa in the Orders Ephemeroptera, Odonata and Tricoptera	0.250	≥ 0.140
Shannon-Wiener Diversity Index	3.322	≥ 2.497
Relative Abundance of Collector-Gatherer Taxa	0.608	≥ 0.131
Abundance of Sensitive Taxa	25.667	≥ 3.424
Richness of Sensitive Taxa	11.000	≥ 3.000
Maine Tolerance Index Score For Wetland Macroinvertebrates	25.989	≤ 29.776
Ratio of MTI Sensitive to Eurytopic Taxa Abundance	3.850	≥ 0.334

Other Variables

Total Mean Abundance	524
Generic Richness:	52
Hilsenhoff Biotic Index:	8.58

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hyalella</i>	29.64
2	<i>Chironomus</i>	29.45
3	<i>Procladius</i>	10.05
4	<i>Tanytarsus</i>	5.60
5	<i>Musculium</i>	3.82



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Surface Water Chemistry

Sample Date: 6/19/2018 2:00:00 PM

Collection Method	Parameter	Value	Units	Qualifier
In-situ	Dissolved Oxygen	3.7	mg/l	
In-situ	Dissolved Oxygen Saturation	44.8	%	
In-situ	pH	5.94		
In-situ	Specific Conductance	47.3	us/cm	
In-situ	Temperature	23.6	deg c	

Landcover Summary - 2004 Data

Total Area (ac)	3421	High Int. Dev. %	0.0	Water %	0.8	Non-vegetated %	0.0
		Med Int. Dev. %	0.1	Wetland %	8.6	Tilled Agriculture %	0.9
		Low Int. Dev. %	1.2	Upland Woody %	86.8	Grassland %	1.7
		Development %	1.3	Natural %	95.5	Human Altered %	3.7
						Impervious %	2.5
Total Land (ac)	3394	High Int. Dev. %	0.0	Water %	N/A	Non-vegetated %	N/A
		Med Int. Dev. %	0.1	Wetland %	8.7	Tilled Agriculture %	0.9
		Low Int. Dev. %	1.2	Upland Woody %	87.5	Grassland %	1.7
		Development %	1.3	Natural %	96.3	Human Altered %	3.7
						Impervious %	2.6



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Summary of Habitat Characteristics

<u>Human Disturbance</u>	<u>Landscape-level Cowardin Classification</u>	<u>Hydrogeomorphic Setting</u>
Total Score: 13	System: PALUSTRINE	Landscape Position: LOTIC RIVER
Hydrologic Modifications: 2	Subsystem:	Lotic Gradient:
Vegetative Modifications: 2	Class 1: EMERGENT	Flow Path: THROUGHFLOW
Chemical Pollutants: 0	Subclass 1: PERSISTENT	Land Form: FRINGE
Watershed	Class 2: SCRUB SHRUB	Land Form Type: LOTIC RIVER
Characterization and Non-point Sources:	Subclass 2: BROAD-LEAVED DECIDUOUS	Waterbody Type: RIVER
	Class 3:	Waterbody Subtype:
	Subclass 3:	
		Comments:

Dominant Plant Species:

Additional Plant Community Observations: SEDGES AND MAYBE LEATHERLEAF ALSO OBSERVED

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

Average Depth: 61 cm Visible Flow: No Rain In Previous 24 Hours: Yes

Sample Comments: BEAVER LODGES OBSERVED

Common Plants Observed

Scientific Name	Common Name	Maine Taxonomic Code	Plant CoC Score	Wetland Indicator Status	Growth Form
<i>Pontederia cordata</i>	Pickerelweed	LW-34010906002002	4	OBL	FORB/HERB
<i>Brasenia schreberi</i>	Watershield	LW-34023103001001	6	OBL	FORB/HERB
<i>Dulichium arundinaceum</i>	Threeway sedge	LW-34010501005001	5	OBL	GRAMINOID
<i>Nuphar lutea ssp. variegata</i>	Variegated yellow pond-lily	LW-34023103002002	4	OBL	FORB/HERB
<i>Myrica gale</i>	Sweetgale	LW-34022801003001	5	OBL	SHRUB
<i>Nymphaea odorata</i>	American white waterlily	LW-34023103003002	5	OBL	FORB/HERB



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Additional Summary Variables

Station Number: W-109	Waterbody: BUNGANOCK BROOK	Town: Hartford
Log Number: DN-2018-109	Subsample Factor: X1	Replicates: 3
		Calculated: 5/23/2019

	Abundance	Relative Abundance	Richness	Relative Richness
EOT Taxa:	36.00	0.069	13	0.25
EPT Taxa:	15.33	0.029	5	0.10
Insects:	336.33	0.642	40	0.77
Non-Insects:	187.67	0.358	12	0.23
Leeches:	1.33	0.003	1	0.02
Oligochaetes:	0.67	0.001	2	0.04
Snails:	2.00	0.004	3	0.06
Bivalves:	24.67	0.047	2	0.04
Isopods:	0.00	0.000	0	0.00
Amphipods:	155.33	0.296	1	0.02
Mites:	3.67	0.007	3	0.06
Stoneflies:	0.00	0.000	0	0.00
Mayflies:	0.00	0.000	0	0.00
Odonates:	20.67	0.039	8	0.15
Caddisflies:	15.33	0.029	5	0.10
Diptera:	294.00	0.561	20	0.38
Hemiptera:	5.33	0.010	4	0.08
Beetles:	1.00	0.002	3	0.06
Chironomids:	283.67	0.541	18	0.35
Tanypodinae Tribe:	67.00	0.128	5	0.10
Chironomiinae Tribe:	212.67	0.406	11	0.21
Orthocloidiinae Tribe:	4.00	0.008	2	0.04
Collector-Filterers:	55.33	0.106	4	0.08
Collector-Gatherers:	318.33	0.608	7	0.13
Predators:	89.33	0.170	15	0.29
Piercers:	3.33	0.006	1	0.02
Shredders:	22.33	0.043	4	0.08
Scrapers:	1.67	0.003	2	0.04
Maine Tolerance:				
Sensitive:	25.67	0.052	11	0.28
Intermediate:	459.67	0.934	25	0.64
Eurytopic:	6.67	0.014	3	0.08
Ratio of MTI Sensitive to Eurytopic	3.85	3.850	3.67	3.67



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Aquatic Life Taxonomic Inventory Report

Station Number: W-109 Waterbody: BUNGANOCK BROOK Town: Hartford
Log Number: DN-2018-109 Subsample Factor: X1 Replicates: 3 Calculated: 5/23/2019

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					
Naididae	08020202	0.33	0.33	--	--	--	--	Worm
Stylaria	08020202014	0.00	0.33	--	CG	18-S	--	Worm
<i>Stylaria lacustris</i>	08020202014002	0.33	0.00	--	--	--	--	Worm
Erpobdella	08030203002	1.33	1.33	--	--	36.4-I	--	Leech
Hyalella	09010203006	155.33	155.33	8	CG	24.5-I	--	Amphipod
Odonata	090203	1.00	1.00	--	--	--	--	Dragonfly/damselfly
Aeshnidae	09020301	7.33	7.33	--	--	--	--	Dragonfly/damselfly
Aeshna	09020301001	0.33	0.33	5	PR	27.9-I	--	Dragonfly/damselfly
Corduliidae	09020305	0.33	0.33	--	--	--	--	Dragonfly/damselfly
Cordulia	09020305022	0.00	1.67	--	PR	--	--	Dragonfly/damselfly
<i>Cordulia shurtleffii</i>	09020305022046	1.67	0.00	--	--	--	--	Dragonfly/damselfly
Leucorrhinia	09020306034	1.67	1.67	9	PR	24.7-I	--	Dragonfly/damselfly
Sympetrum	09020306041	3.00	3.00	10	PR	37-I	--	Dragonfly/damselfly
Lestes	09020308045	3.33	3.33	9	PR	32.6-I	--	Dragonfly/damselfly
Coenagrionidae	09020309	2.00	2.00	--	--	--	--	Dragonfly/damselfly
Corixidae	09020501	1.00	1.00	--	--	--	--	True Bug
Ranatra	09020503012	0.33	0.33	--	PR	42.3-I	--	True Bug
Notonectidae	09020505	1.33	1.33	--	--	--	--	True Bug
Neoplea	09020512016	2.67	2.67	--	PR	35.5-I	--	True Bug
Polycentropodidae	09020603	0.33	0.33	--	--	--	--	Caddisfly
Polycentropus	09020603010	0.33	0.33	6	PR	15.4-S	--	Caddisfly
Oxyethira	09020607028	3.33	3.33	3	P	22-S	--	Caddisfly
Phryganeidae	09020608	3.00	3.00	--	--	--	--	Caddisfly
Trienodes	09020618077	8.33	8.33	6	SH	19.3-S	--	Caddisfly
Chaoborus	09021007025	2.00	2.00	8	PR	25-I	--	Fly: Phantom Midge
Ceratopogonidae	09021010	8.33	8.33	--	--	--	--	Fly: Biting Midge
Ablabesmyia	09021011001	1.00	6.33	8	PR	23.6-I	T	Fly: Midge
<i>Ablabesmyia peleensis</i>	09021011001006	0.67	0.00	--	--	--	T	Fly: Midge
<i>Ablabesmyia aspera</i>	09021011001012	4.67	0.00	--	--	--	T	Fly: Midge
Guttipelopia	09021011006	2.00	2.00	5	PR	19.4-S	T	Fly: Midge
Labrundinia	09021011008	0.33	0.33	7	PR	18.1-S	T	Fly: Midge
Larsia	09021011009	5.67	5.67	6	PR	15.6-S	T	Fly: Midge
Procladius	09021011015	52.67	52.67	9	PR	25.1-I	T	Fly: Midge
Corynoneura	09021011036	1.33	1.33	7	CG	40.1-I	--	Fly: Midge
Psectrocladius	09021011056	2.67	2.67	8	CG	22-S	--	Fly: Midge



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		Actual	Adjusted						
Tanytarsus	09021011076	29.33	29.33	6	CF	25.7-I	Y	Fly:	Midge
Chironomus	09021011080	154.33	154.33	10	CG	27.4-I	C	Fly:	Midge
Cladopelma	09021011081	0.67	0.67	9	CG	27.9-I	C	Fly:	Midge
Dicotendipes	09021011085	0.67	3.67	8	CG	28.8-I	C	Fly:	Midge
<i>Dicotendipes fumidus</i>	09021011085150	3.00	0.00	--	--	--	C	Fly:	midge
Endochironomus	09021011087	1.67	1.67	10	SH	50.2-E	C	Fly:	Midge
Glyptotendipes	09021011088	4.67	4.67	10	SH	43-E	C	Fly:	Midge
Microtendipes	09021011094	0.00	1.33	6	CF	22.3-I	C	Fly:	Midge
<i>Microtendipes pedellus group</i>	09021011094166	1.33	0.00	--	--	--	C	Fly:	Midge
Parachironomus	09021011097	7.00	7.00	10	PR	28.6-I	C	Fly:	Midge
Polypedilum	09021011102	3.00	7.67	6	SH	24.2-I	C	Fly:	Midge
<i>Polypedilum illinoense group</i>	09021011102185	1.67	0.00	--	--	--	C	Fly:	Midge
<i>Polypedilum epleri</i>	09021011102203	3.00	0.00	--	--	--	C	Fly:	midge
Omisus	09021011130	2.00	2.00	--	--	20.7-S	H	Fly:	Midge
Zavreliella	09021011133	0.00	0.33	--	--	21.8-S	H	Fly:	Midge
<i>Zavreliella marmorata</i>	09021011133010	0.33	0.00	--	--	--	S	Fly:	Midge
Laccophilus	09021103006	0.33	0.33	--	--	63.7-E	--		Beetle
Dineutus	09021104032	0.33	0.33	2	--	23.2-I	--		Beetle
Chrysomelidae	09021114	0.33	0.33	--	--	--	--		Beetle
Hydrachna	09030103001	1.33	1.33	--	--	30.8-I	--		Mite
Unionicola	09030108001	1.33	1.33	--	--	24.8-I	--		Mite
Arrenurus	09030111001	1.00	1.00	--	--	23.8-I	--		Mite
Amnicola	10010104013	0.33	0.33	--	SC	18.7-S	--		Snail
Lymnaeidae	10010201	0.33	0.33	--	--	--	--		Snail
Helisoma	10010203030	1.33	1.33	--	SC	42.8-I	--		Snail
Musculium	10020201001	20.00	20.00	--	CF	24.8-I	--		Clam
Pisidium	10020201002	4.67	4.67	--	CF	--	--		Clam