

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

Station Information

Station Number: W-374	Trip ID: 2022-374	River Basin: Penobscot
Waterbody: CARIBOU LAKE (K1)		HUC8 Name: West Branch Penobscot
Town: T03 R13 Wels		Latitude: 45° 54' 27.324" N
Mitigation Monitoring Site: No		Longitude: 69° 21' 09.144" W

Sample Information

Sample ID: KQ-2022-374	Type of Sample: KICK-QUALITATIVE	Sampling Organization: NORMANDEAU ASSOCIATES
Date Sampled: 8/3/2022	Replicates: 3	Taxonomist: NORMANDEAU ASSOCIATES
Subsample Factor: X1		

Classification Attainment

Statutory Class:	GPA	Final Determination:	C	Date: 12/20/2023
Model Result with $P \geq 0.6$:	B	Reason for Determination: Best Professional Judgement		
Date Last Calculated:	12/20/2023	Comments: Sample method not appropriate for model. Sample does meet structure and function.		

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A: 0.58	Class C: 0.02	Class A, B, or C	1.00
Class B: 0.40	NA: 0.00	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	0.98	Class A	0.58
Class C or Non-Attainment	0.02	Class B or C or Non-Attainment	0.42

Model Variables

		Reference Range (10th or 90th percentile value)
Abundance of Taxa in the Order Ephemeroptera	2.333	≥ 0.000
Relative Richness of Taxa in the Orders Ephemeroptera, Odonata and Tricoptera	0.226	≥ 0.140
Shannon-Wiener Diversity Index	3.556	≥ 2.497
Relative Abundance of Collector-Gatherer Taxa	0.543	≥ 0.131
Abundance of Sensitive Taxa	42.810	≥ 3.424
Richness of Sensitive Taxa	7.000	≥ 3.000
Maine Tolerance Index Score For Wetland Macroinvertebrates	24.862	≤ 29.776
Ratio of MTI Sensitive to Eurytopic Taxa Abundance	5.907	≥ 0.334

Other Variables

Total Mean Abundance	181
Generic Richness:	31
Hilsenhoff Biotic Index:	6.55

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Tanytarsus</i>	27.44
2	<i>Ablabesmyia</i>	10.31
3	<i>Stylaria lacustris</i>	9.21

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4	<i>Chironomus</i>	7.92
5	<i>Psectrocladius</i>	7.73

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Surface Water Chemistry

Sample Date: 8/3/2022 9:30:00 AM

Collection Method	Parameter	Value	Units	Qualifier
In-situ	Dissolved Oxygen	8.2	mg/l	
In-situ	Dissolved Oxygen Saturation	94.6	%	
In-situ	pH	6.79		
In-situ	Specific Conductance	28.1	us/cm	
In-situ	Temperature	22.3	deg c	

Landcover Summary - 2004 Data

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Summary of Habitat Characteristics

<u>Human Disturbance</u>	<u>Landscape-level Cowardin Classification</u>	<u>Hydrogeomorphic Setting</u>
Total Score:	System:	Landscape Position:
Hydrologic Modifications:	Subsystem:	Lotic Gradient:
Vegetative Modifications:	Class 1:	Flow Path:
Chemical Pollutants:	Subclass 1:	Land Form:
Watershed	Class 2:	Land Form Type:
Characterization and	Subclass 2:	Waterbody Type:
Non-point Sources:	Class 3:	Waterbody Subtype:
	Subclass 3:	
		Comments:
Dominant Plant Species:		
Additional Plant Community Observations:		
Habitat Classification:	Substrate Classification:	
	GRAVEL SUBSTRATE	
	SAND SUBSTRATE	
	SILT/MUCK SUBSTRATE	
Average Depth:		
Sample Comments:		

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Additional Summary Variables

Station Number: W-374	Waterbody: CARIBOU LAKE (K1)	Town: T03 R13 Wels
Log Number: KQ-2022-374	Subsample Factor: X1	Replicates: 3
		Calculated: 12/20/2023

	Abundance	Relative Abundance	Richness	Relative Richness
EOT Taxa:	3.33	0.018	7	0.23
EPT Taxa:	3.33	0.018	7	0.23
Insects:	148.00	0.818	25	0.81
Non-Insects:	33.00	0.182	6	0.19
Leeches:	0.00	0.000	0	0.00
Oligochaetes:	32.00	0.177	5	0.16
Snails:	0.00	0.000	0	0.00
Bivalves:	0.00	0.000	0	0.00
Isopods:	0.00	0.000	0	0.00
Amphipods:	1.00	0.006	1	0.03
Mites:	0.00	0.000	0	0.00
Stoneflies:	0.00	0.000	0	0.00
Mayflies:	2.33	0.013	5	0.16
Odonates:	0.00	0.000	0	0.00
Caddisflies:	1.00	0.006	2	0.06
Diptera:	142.33	0.786	15	0.48
Hemiptera:	2.00	0.011	2	0.06
Beetles:	0.33	0.002	1	0.03
Chironomids:	142.00	0.785	14	0.45
Tanypodinae Tribe:	22.67	0.125	2	0.06
Chironomiinae Tribe:	86.67	0.479	7	0.23
Orthoclodiinae Tribe:	32.67	0.180	5	0.16
Collector-Filterers:	53.67	0.297	3	0.10
Collector-Gatherers:	98.32	0.543	18	0.58
Predators:	22.67	0.125	2	0.06
Piercers:	1.00	0.006	2	0.06
Shredders:	0.00	0.000	0	0.00
Scrapers:	0.33	0.002	1	0.03
Maine Tolerance:				
Sensitive:	42.81	0.267	7	0.37
Intermediate:	110.33	0.688	11	0.58
Eurytopic:	7.25	0.045	1	0.05
Ratio of MTI Sensitive to Eurytopic	5.91	5.907	7.00	7.00

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Aquatic Life Taxonomic Inventory Report

Station Number: W-374

Waterbody: CARIBOU LAKE (K1)

Town: T03 R13 Wels

Log Number: KQ-2022-374

Subsample Factor: X1

Replicates: 3

Calculated: 12/20/2023

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					
Enchytraeidae	08020201	1.00	1.00	--	--	--	--	Worm
Naididae	08020202	5.33	0.00	--	--	--	--	Worm
Arcteonais	08020202006	0.00	1.61	--	--	--	--	Worm
<i>Arcteonais lomondi</i>	08020202006001	1.33	0.00	--	--	--	--	Worm
Nais	08020202009	6.00	7.25	--	CG	43-E	--	Worm
Slavina	08020202012	0.00	0.40	--	--	4.2-S	--	Worm
<i>Slavina appendiculata</i>	08020202012001	0.33	0.00	--	--	--	--	Worm
Stylaria	08020202014	0.00	21.74	--	CG	18-S	--	Worm
<i>Stylaria fossularis</i>	08020202014001	1.33	0.00	--	--	--	--	Worm
<i>Stylaria lacustris</i>	08020202014002	16.67	0.00	--	--	--	--	Worm
Hyaella	09010203006	0.00	1.00	8	CG	24.5-I	--	Amphipod
<i>Hyaella azteca</i>	09010203006011	1.00	0.00	--	--	--	--	Amphipod
Procloeon	09020401010	0.67	0.67	--	CG	21-S	--	Mayfly
Stenonema	09020402016	0.00	0.33	4	SC	--	--	Mayfly
<i>Stenonema femoratum</i>	09020402016001	0.33	0.00	4	SC	--	--	Mayfly
Paraleptophlebia	09020406026	0.67	0.67	1	CG	--	--	Mayfly
Eurylophella	09020410036	0.33	0.33	3	CG	23.2-I	--	Mayfly
Caenis	09020412040	0.33	0.33	7	CG	22.1-I	--	Mayfly
Palmarcorixa	09020501005	1.67	1.67	--	--	--	--	True Bug
Sigara	09020501007	0.33	0.33	--	P	--	--	True Bug
Cheumatopsyche	09020604015	0.33	0.33	5	CF	--	--	Caddisfly
Oxyethira	09020607028	0.67	0.67	3	P	22-S	--	Caddisfly
Atrichopogon	09021010034	0.33	0.33	--	CG	--	--	Fly: Biting Midge
Ablabesmyia	09021011001	18.67	21.33	8	PR	23.6-I	T	Fly: Midge
<i>Ablabesmyia mallochii</i>	09021011001004	2.67	0.00	--	--	--	T	Fly: Midge
Procladius	09021011015	1.33	1.33	9	PR	25.1-I	T	Fly: Midge
Corynoneura	09021011036	1.00	1.00	7	CG	40.1-I	--	Fly: Midge
Heterotrissocladius	09021011044	12.00	12.00	0	CG	--	--	Fly: Midge
Orthocladius	09021011050	5.00	5.00	6	CG	22-S	--	Fly: Midge
Psectrocladius	09021011056	14.00	14.00	8	CG	22-S	--	Fly: Midge
Smittia	09021011058	0.67	0.67	6	CG	--	--	Fly: Midge
Cladotanytarsus	09021011068	5.67	5.67	7	CG	22.2-I	Y	Fly: Midge
Stempellina	09021011073	1.33	1.33	2	CG	--	Y	Fly: Midge
Tanytarsus	09021011076	49.67	49.67	6	CF	25.7-I	Y	Fly: Midge
Chironomus	09021011080	14.33	14.33	10	CG	27.4-I	C	Fly: Midge

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		Actual	Adjusted						
Dicrotendipes	09021011085	11.67	11.67	8	CG	28.8-I	C	Fly: Midge	
Microtendipes	09021011094	0.00	3.67	6	CF	22.3-I	C	Fly: Midge	
<i>Microtendipes pedellus group</i>	09021011094166	3.67	0.00	--	--	--	C	Fly: Midge	
Paratendipes	09021011100	0.00	0.33	8	CG	20.8-S	C	Fly: Midge	
<i>Paratendipes albimanus group</i>	09021011100176	0.33	0.00	--	--	--	C	Fly: Midge	
Anchytarsus	09021110060	0.00	0.33	--	--	--	--	Beetle	
<i>Anchytarsus bicolor</i>	09021110060030	0.33	0.00	--	SH	--	--	Beetle	