

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

Station Information

Station Number: W-410	Trip ID: 2023-410	River Basin:
Waterbody: SOUTH TWIN LAKE (K2)		HUC8 Name:
Town: T4 Indian Purchase Twp		Latitude:
Mitigation Monitoring Site: No		Longitude:

Sample Information

Sample ID: KQ-2023-410	Type of Sample: KICK-QUALITATIVE	Sampling Organization: NORMANDEAU ASSOCIATES
Date Sampled: 8/16/2023	Replicates: 3	Taxonomist: NORMANDEAU ASSOCIATES
Subsample Factor: X1		

Classification Attainment

Statutory Class:	GPA	Final Determination:	C	Date: 1/3/2025
Model Result with $P \geq 0.6$:	A	Reason for Determination: Best Professional Judgement		
Date Last Calculated:	11/21/2024	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: 0.61	Class C: 0.02	Class A, B, or C	1.00
Class B: 0.37	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	0.61
Class C or Non-Attainment	0.02	Class B or C or Non-Attainment	0.39

Model Variables

		Reference Range (10th or 90th percentile value)
Abundance of Taxa in the Order Ephemeroptera	4.000	≥ 0.000
Relative Richness of Taxa in the Orders Ephemeroptera, Odonata and Tricoptera	0.175	≥ 0.140
Shannon-Wiener Diversity Index	3.951	≥ 2.497
Relative Abundance of Collector-Gatherer Taxa	0.721	≥ 0.131
Abundance of Sensitive Taxa	84.464	≥ 3.424
Richness of Sensitive Taxa	16.000	≥ 3.000
Maine Tolerance Index Score For Wetland Macroinvertebrates	28.698	≤ 29.776
Ratio of MTI Sensitive to Eurytopic Taxa Abundance	1.040	≥ 0.334

Other Variables

Total Mean Abundance	399
Generic Richness:	63
Hilsenhoff Biotic Index:	7.17

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hyaella azteca</i>	29.99
2	<i>Nais</i>	17.46
3	<i>Stylaria lacustris</i>	10.69

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4	<i>Tanytarsus</i>	5.43
5	<i>Musculium</i>	2.59

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Surface Water Chemistry

Sample Date: 8/16/2023 12:27:00 PM

Collection Method	Parameter	Value	Units	Qualifier
In-situ	Dissolved Oxygen	9.24	mg/l	
In-situ	pH	6.97		
In-situ	Specific Conductance	23	us/cm	
In-situ	Temperature	22.25	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:

OPEN WATER STANDING

Substrate Classification:

BOULDER SUBSTRATE

RUBBLE/COBBLE SUBSTRATE

SAND SUBSTRATE

SILT/MUCK SUBSTRATE

Average Depth:

Visible Flow: No

Rain In Previous 24 Hours: No

Sample Comments: SUBSTRATE ALSO HAS 10% CLAY

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Additional Summary Variables

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		Calculated: 11/21/2024

	Abundance	Relative Abundance	Richness	Relative Richness
EOT Taxa:	21.33	0.053	11	0.17
EPT Taxa:	15.33	0.038	10	0.16
Insects:	119.67	0.300	42	0.67
Non-Insects:	279.33	0.700	21	0.33
Leeches:	0.33	0.001	1	0.02
Oligochaetes:	128.33	0.322	11	0.17
Snails:	1.67	0.004	2	0.03
Bivalves:	16.33	0.041	2	0.03
Isopods:	0.00	0.000	0	0.00
Amphipods:	119.67	0.300	1	0.02
Mites:	6.33	0.016	1	0.02
Stoneflies:	0.00	0.000	0	0.00
Mayflies:	4.00	0.010	6	0.10
Odonates:	6.00	0.015	1	0.02
Caddisflies:	11.33	0.028	4	0.06
Diptera:	97.67	0.245	29	0.46
Hemiptera:	0.33	0.001	1	0.02
Beetles:	0.33	0.001	1	0.02
Chironomids:	89.67	0.225	20	0.32
Tanypodinae Tribe:	6.21	0.016	3	0.05
Chironomiinae Tribe:	61.04	0.153	11	0.17
Orthoclodiinae Tribe:	21.73	0.054	5	0.08
Collector-Filterers:	38.75	0.097	3	0.05
Collector-Gatherers:	287.61	0.721	25	0.40
Predators:	33.12	0.083	18	0.29
Piercers:	7.33	0.018	1	0.02
Shredders:	7.49	0.019	2	0.03
Scrapers:	1.67	0.004	2	0.03
Maine Tolerance:				
Sensitive:	84.46	0.234	16	0.41
Intermediate:	195.80	0.542	20	0.51
Eurytopic:	81.24	0.225	3	0.08
Ratio of MTI Sensitive to Eurytopic	1.04	1.040	5.33	5.33

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Aquatic Life Taxonomic Inventory Report

Station Number: W-410	Waterbody: SOUTH TWIN LAKE (K2)	Town: T4 Indian Purchase T
Log Number: KQ-2023-410	Subsample Factor: X1	Replicates: 3
		Calculated: 11/21/2024

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					
Hydra	02010101001	5.33	5.33	--	PR	--	--	Hydroid
Nematoda	05	0.67	0.67	--	--	--	--	Nematode
Oligochaeta	0802	0.67	0.67	--	--	--	--	Oligochaete
Lumbriculus	08020101002	0.00	0.67	--	CG	35-I	--	Worm
<i>Lumbriculus variegatus</i>	08020101002001	0.67	0.00	--	--	--	--	Worm
Stylodrilus	08020101004	0.00	1.00	--	--	--	--	Worm
<i>Stylodrilus heringianus</i>	08020101004001	1.00	0.00	--	--	--	--	Worm
Tubificida	080202	1.33	1.33	--	--	--	--	Worm
Enchytraeidae	08020201	1.00	1.00	--	--	--	--	Worm
Naididae	08020202	0.33	0.00	--	--	--	--	Worm
Bratislavia	08020202003	0.33	0.33	--	--	--	--	Worm
Arcteonais	08020202006	0.00	1.00	--	--	--	--	Worm
<i>Arcteonais lomondi</i>	08020202006001	1.00	0.00	--	--	--	--	Worm
Nais	08020202009	69.67	69.85	--	CG	43-E	--	Worm
Ripistes	08020202011	0.00	0.67	--	--	--	--	Worm
<i>Ripistes parasita</i>	08020202011001	0.67	0.00	--	--	--	--	Worm
Slavina	08020202012	0.00	3.01	--	--	4.2-S	--	Worm
<i>Slavina appendiculata</i>	08020202012001	3.00	0.00	--	--	--	--	Worm
Stylaria	08020202014	0.00	42.78	--	CG	18-S	--	Worm
<i>Stylaria lacustris</i>	08020202014002	42.67	0.00	--	--	--	--	Worm
Vejdovskyella	08020202015	0.00	4.68	--	--	13.7-S	--	Worm
<i>Vejdovskyella comata</i>	08020202015001	4.67	0.00	--	--	--	--	Worm
Aulodrilus	08020202018	0.00	1.34	--	--	3.8-S	--	Tubificid Worm
<i>Aulodrilus americanus</i>	08020202018001	1.33	0.00	--	--	--	--	Tubificid Worm
Batracobdella	08030101008	0.33	0.33	--	--	--	--	Leech
Hyaella	09010203006	0.00	119.67	8	CG	24.5-I	--	Amphipod
<i>Hyaella azteca</i>	09010203006011	119.67	0.00	--	--	--	--	Amphipod
Orconectes	09010301008	0.67	0.67	--	CG	--	--	Crayfish
Enallagma	09020309051	6.00	6.00	9	PR	26.2-I	--	Dragonfly/damselfly
Baetis	09020401001	0.33	0.33	4	CG	29.9-I	--	Mayfly
Centroptilum	09020401003	0.67	0.67	2	CG	--	--	Mayfly
Choroterpes	09020406022	0.33	0.33	2	CG	--	--	Mayfly
Paraleptophlebia	09020406026	1.00	1.00	1	CG	--	--	Mayfly
Hexagenia	09020407028	0.33	0.33	6	CG	--	--	Mayfly
Caenis	09020412040	1.33	1.33	7	CG	22.1-I	--	Mayfly

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Log Number: KQ-2023-410	Subsample Factor: X1	Replicates: 3 Calculated: 11/21/2024

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					
Notonecta	09020505015	0.33	0.33	--	PR	--	--	True Bug
Polycentropus	09020603010	0.33	0.33	6	PR	15.4-S	--	Caddisfly
Oxyethira	09020607028	7.33	7.33	3	P	22-S	--	Caddisfly
Trienodes	09020618077	2.67	2.67	6	SH	19.3-S	--	Caddisfly
Oecetis	09020618078	1.00	1.00	8	PR	16.3-S	--	Caddisfly
Chaoborus	09021007025	0.00	0.67	8	PR	25-I	--	Fly: Phantom Midge
<i>Chaoborus punctipennis</i>	09021007025007	0.67	0.00	--	--	--	--	Fly: Phantom Midge
Dasyhelea	09021010036	0.67	0.67	--	CG	30.6-I	--	Fly: Biting Midge
Culicoides	09021010037	0.33	0.33	10	PR	42.1-I	--	Fly: Biting Midge
Proboezzia	09021010041	1.33	1.33	6	PR	28.6-I	--	Fly: Biting Midge
Palpomyia	09021010044	0.33	0.33	6	PR	--	--	Fly: Biting Midge
Mallochohelea	09021010047	2.00	2.00	--	PR	--	--	Fly: Biting Midge
Chironomidae	09021011	3.00	0.00	--	--	--	--	Fly: Midge
Ablabesmyia	09021011001	1.33	3.45	8	PR	23.6-I	T	Fly: Midge
<i>Ablabesmyia mallochii</i>	09021011001004	2.00	0.00	--	--	--	T	Fly: Midge
Labrundinia	09021011008	1.00	1.03	7	PR	18.1-S	T	Fly: Midge
Thienemannimyia	09021011020	0.00	1.72	3	PR	--	T	Fly: Midge
<i>Thienemannimyia group</i>	09021011020041	1.67	0.00	--	--	--	T	Fly: Midge
Monodiamesa	09021011030	0.67	0.69	7	CG	--	R	Fly: Midge
Corynoneura	09021011036	2.00	2.07	7	CG	40.1-I	--	Fly: Midge
Heterotrissocladius	09021011044	1.33	1.38	0	CG	--	--	Fly: Midge
Orthocladius	09021011050	9.33	9.66	6	CG	22-S	--	Fly: Midge
Psectrocladius	09021011056	7.67	7.93	8	CG	22-S	--	Fly: Midge
Thienemanniella	09021011062	0.00	0.69	6	CG	24.7-I	--	Fly: Midge
<i>Thienemanniella lobapodema</i>	09021011062114	0.67	0.00	--	--	--	--	Fly: Midge
Cladotanytarsus	09021011068	6.67	6.90	7	CG	22.2-I	Y	Fly: Midge
Micropsectra	09021011070	6.67	6.90	7	CG	98.1-E	Y	Fly: Midge
Stempellina	09021011073	1.00	1.03	2	CG	--	Y	Fly: Midge
Tanytarsus	09021011076	21.67	22.42	6	CF	25.7-I	Y	Fly: Midge
Pseudochironomus	09021011078	4.33	4.48	5	CG	47.7-E	S	Fly: Midge
Cryptochironomus	09021011082	0.00	3.10	8	PR	31.3-I	C	Fly: Midge
<i>Cryptochironomus fulvus</i>	09021011082144	3.00	0.00	--	--	--	C	Fly: Midge
Dicrotendipes	09021011085	6.33	6.55	8	CG	28.8-I	C	Fly: Midge
Parachironomus	09021011097	3.67	3.79	10	PR	28.6-I	C	Fly: Midge
Paratendipes	09021011100	0.00	0.69	8	CG	20.8-S	C	Fly: Midge
<i>Paratendipes albimanus group</i>	09021011100176	0.67	0.00	--	--	--	C	Fly: Midge

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		Actual	Adjusted						
Polypedilum	09021011102	2.00	4.83	6	SH	24.2-I	C	Fly: Midge	
<i>Polypedilum flavum</i>	09021011102182	0.33	0.00	--	--	--	C	Fly: Midge	
<i>Polypedilum halterale group</i>	09021011102193	0.33	0.00	--	--	--	C	Fly: Midge	
<i>Polypedilum illinoense</i>	09021011102204	2.00	0.00	--	--	--	--	Fly: Midge	
Xenochironomus	09021011108	0.00	0.34	0	PR	1.5-S	C	Fly: Midge	
<i>Xenochironomus xenolabis</i>	09021011108200	0.33	0.00	--	--	--	C	Fly: Midge	
Chrysops	09021014052	0.33	0.33	6	CG	20.7-S	--	Fly: Horse And Deer	
Hemerodromia	09021016057	1.67	1.67	3	PR	--	--	Fly: Aquatic Dance	
Muscidae	09021022	0.67	0.67	6	--	--	--	Fly: Aquatic Muscid	
Gyrinus	09021104033	0.33	0.33	2	PR	11.9-S	--	Beetle	
Hydrachnidia	09030101	6.33	6.33	--	--	--	--	Mite	
Amnicola	10010104013	1.00	1.00	--	SC	18.7-S	--	Snail	
Gyraulus	10010203029	0.67	0.67	--	SC	37.2-I	--	Snail	
Musculium	10020201001	10.33	10.33	--	CF	24.8-I	--	Clam	
Pisidium	10020201002	6.00	6.00	--	CF	--	--	Clam	