



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

Station Information

Station Number: S-1094	River Basin: Penobscot
Waterbody: Narramissic River - Station 1094	HUC8 Name: Lower Penobscot
Town: Orland	Latitude: 44 35 33.1 N
Directions: 100M DOWNSTREAM OF DAM.	Longitude: 68 43 21.3 W
	Stream Order: 4

Sample Information

Log Number: 2840	Type of Sample: ROCK BAG	Date Deployed: 8/24/2020
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/24/2020

Classification Attainment

Statutory Class: B	Final Determination: C	Date: 3/3/2022
Model Result with $P \geq 0.6$: C	Reason for Determination: Model	
Date Last Calculated: 10/19/2021	Comments:	

Model Probabilities

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

Model Variables

01 Total Mean Abundance	685.33	18 Relative Abundance Ephemeroptera	0.05
02 Generic Richness	26.00	19 EPT Generic Richness	11.00
03 Plecoptera Mean Abundance	0.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	37.33	23 Relative Generic Richness- Plecoptera	0.00
05 Shannon-Wiener Generic Diversity	3.44	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	221.33
06 Hilsenhoff Biotic Index	4.82	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	0.00
07 Relative Abundance - Chironomidae	0.25	28 EP Generic Richness/14	0.21
08 Relative Generic Richness Diptera	0.27	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	26.67		
11 <i>Cheumatopsyche</i> Abundance	129.33		
12 EPT Generic Richness/ Diptera Generic Richness	1.57		
13 Relative Abundance - Oligochaeta	0.01		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	4.00		
17 Chironomini Abundance (Family Functional Group)	64.00		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Macrostemum</i>	23.93
2	<i>Cheumatopsyche</i>	18.87
3	<i>Cricotopus</i>	13.42
4	<i>Polypedilum</i>	9.14
5	<i>Chimarra</i>	6.81



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

Station Number: S-1094 Town: Orland Date Deployed: 8/24/2020
Log Number: 2840 Waterbody: Narramissic River - Station 1094 Date Retrieved: 8/24/2020

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature: 24.9 deg C
Dissolved Oxygen: 9.36 mg/l
Dissolved Oxygen Saturation: 112.2 %
Specific Conductance: 61.6 uS/cm
Velocity: 0.1 cm/s
pH: 7.23
Wetted Width: 19 m
Bankfull Width: 20.5 m
Depth: 22 cm

Waterbody Information - Retrieval

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Hardwood	Open	Rolling
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Nutrients	Below Dam	Boulder 20 %
		Gravel 40 %
		Rubble/Cobble 30 %
		Sand 10 %

Landcover Summary - 2004 Data

Sample Comments

VISIBLE FLOW. SMALLMOUTH BASS, LARGEMOUTH BASS, RED-BREASTED SUNFISH, AND SPINY-CHEEKED CRAYFISH OBSERVED.



Maine Department of Environmental Protection **Biological Monitoring Program** **Aquatic Life Taxonomic Inventory Report**

Station Number: S-1094	Waterbody: Narramissic River - Station 1094	Town: Orland
Log Number: 2840	Subsample Factor: X4 Replicates: 3	Calculated: 10/19/2021
Station Number: S-1094	Waterbody: Narramissic River - Station 1094	Town: Orland
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Log Number: 2840	Subsample Factor: X4 Replicates: 3	Calculated: 10/19/2021

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002	16.00	16.00		--	2.3	2.3
<i>Prostoma</i>	04010101001	4.00	4.00		--	0.6	0.6
<i>Nais</i>	08020202009	6.67	6.67		CG	1.0	1.0
<i>Stylaria</i>	08020202014	1.33	1.33		CG	0.2	0.2
<i>Corduliidae</i>	09020305	2.67	2.67		--	0.4	0.4
<i>Baetis</i>	09020401001		12.00	4	CG		1.8
<i>Baetis flavistriga</i>	09020401001004	12.00			--	1.8	
<i>Stenacron</i>	09020402014	10.67	10.67	7	SC	1.6	1.6
<i>Tricorythodes</i>	09020411038	14.67	14.67	4	CG	2.1	2.1
<i>Chimarra</i>	09020601003		46.67	2	CF		6.8
<i>Chimarra obscura</i>	09020601003003	46.67			--	6.8	
<i>Neureclipsis</i>	09020603008	45.33	45.33	7	CF	6.6	6.6
<i>Cheumatopsyche</i>	09020604015	129.33	129.33	5	CF	18.9	18.9
<i>Hydropsyche</i>	09020604016	1.33	26.67	4	CF	0.2	3.9
<i>Hydropsyche morosa</i>	09020604016030	10.67			--	1.6	
<i>Hydropsyche sparna</i>	09020604016032	1.33			--	0.2	
<i>Hydropsyche betteni</i>	09020604016037	13.33			--	1.9	
<i>Macrostemum</i>	09020604018	164.00	164.00	3	CF	23.9	23.9
<i>Hydroptila</i>	09020607026	9.33	9.33	6	P	1.4	1.4
<i>Micrasema</i>	09020609044	1.33	1.33	2	SH	0.2	0.2
<i>Oecetis</i>	09020618078	16.00	16.00	8	PR	2.3	2.3
<i>Antocha</i>	09021001004	1.33	1.33	3	CG	0.2	0.2
<i>Thienemannimyia</i>	09021011020		4.00	3	PR		0.6
<i>Thienemannimyia group</i>	09021011020041	4.00			--	0.6	
<i>Cricotopus</i>	09021011037	78.67	92.00	7	SH	11.5	13.4
<i>Cricotopus bicinctus</i>	09021011037057	13.33			--	1.9	
<i>Nanocladius</i>	09021011049	1.33	1.33	3	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072		9.33	6	CF		1.4
<i>Rheotanytarsus exiguus group</i>	09021011072127	9.33			CF	1.4	
<i>Microtendipes</i>	09021011094		1.33	6	CF		0.2



**Maine Department of Environmental Protection
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Aquatic Life Taxonomic Inventory Report**

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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Microtendipes rydalensis group</i>	09021011094168	1.33			--	0.2	
<i>Polypedilum</i>	09021011102		62.67	6	SH		9.1
<i>Polypedilum flavum</i>	09021011102182	62.67			--	9.1	
<i>Microcylloepus</i>	09021113066		2.67	3	--		0.4
<i>Microcylloepus pusillus</i>	09021113066041	2.67			--	0.4	
<i>Physella</i>	10010202027	2.67	2.67		SC	0.4	0.4
Sphaeriidae	10020201	1.33	1.33		CF	0.2	0.2



Maine Department of Environmental Protection
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Aquatic Life Classification Attainment Report

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Statutory Class: B Final Determination: C Date: 3/3/2022
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Model Probabilities

First Stage Model		C or Better Model	
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Biological Monitoring Program
Aquatic Life Classification Attainment Report**

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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature:	24.9 deg C
Dissolved Oxygen:	9.36 mg/l
Dissolved Oxygen Saturation:	112.2 %
Specific Conductance:	61.6 uS/cm
Velocity:	0.1 cm/s
pH:	7.23
Wetted Width:	19 m
Bankfull Width:	20.5 m
Depth:	22 cm

Waterbody Information - Retrieval

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Hardwood	Open	Rolling	
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Nutrients	Below Dam	Boulder	20 %
		Gravel	40 %
		Rubble/Cobble	30 %
		Sand	10 %

Landcover Summary - 2004 Data

Sample Comments

VISIBLE FLOW. SMALLMOUTH BASS, LARGEMOUTH BASS, RED-BREASTED SUNFISH, AND SPINY-CHEEKED CRAYFISH OBSERVED.



Maine Department of Environmental Protection

Biological Monitoring Program

Aquatic Life Taxonomic Inventory Report

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<i>Corduliidae</i>	09020305	2.67	2.67		--	0.4	0.4
<i>Baetis</i>	09020401001		12.00	4	CG		1.8
<i>Baetis flavistriga</i>	09020401001004	12.00			--	1.8	
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<i>Thienemannimyia group</i>	09021011020041	4.00			--	0.6	
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<i>Rheotanytarsus</i>	09021011072		9.33	6	CF		1.4
<i>Rheotanytarsus exiguus group</i>	09021011072127	9.33			CF	1.4	
<i>Microtendipes</i>	09021011094		1.33	6	CF		0.2



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-1094	Waterbody: Narramissic River - Station 1094	Town: Orland
Log Number: 2840	Subsample Factor: X4 Replicates: 3	Calculated: 10/19/2021
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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
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<i>Microcylloepus pusillus</i>	09021113066041	2.67			--	0.4	
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Maine Department of Environmental Protection

Biological Monitoring Program

Aquatic Life Classification Attainment Report

Station Information

Station Number: S-1094 Waterbody: Narramissic River - Station 1094 Town: Orland Directions: 100M DOWNSTREAM OF DAM.	River Basin: Penobscot HUC8 Name: Lower Penobscot Latitude: 44 35 33.1 N Longitude: 68 43 21.3 W Stream Order: 4
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Sample Information

Log Number: 2840	Type of Sample: ROCK BASKET	Date Deployed: 7/27/2020
Subsample Factor: X4	Replicates: 3	Date Retrieved: 7/27/2020

Classification Attainment

Statutory Class: B	Final Determination: C	Date: 3/3/2022
Model Result with $P \geq 0.6$: C	Reason for Determination: Model	
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Model Probabilities

<u>First Stage Model</u>				<u>C or Better Model</u>	
Class A	0.00	Class C	0.96	Class A, B, or C	1.00
Class B	0.01	NA	0.02	Non-Attainment	0.00
<u>B or Better Model</u>				<u>A Model</u>	
Class A or B			0.00	Class A	0.00
Class C or Non-Attainment			1.00	Class B or C or Non-Attainment	1.00

Model Variables

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Generic Richness			
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Five Most Dominant Taxa

Rank	Taxon Name	Percent
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Biological Monitoring Program
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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature:	26.7 deg C
Dissolved Oxygen:	8.53 mg/l
Dissolved Oxygen Saturation:	107.3 %
Specific Conductance:	60.5 uS/cm
Velocity:	0.4 cm/s
pH:	6.99
Wetted Width:	20 m
Bankfull Width:	20.5 m
Depth:	23.3 cm

Waterbody Information - Retrieval

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Hardwood	Open	Rolling
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Nutrients	Below Dam	Boulder 20 %
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Sample Comments

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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Girardia</i>	03010102002	16.00	16.00		--	2.3	2.3
<i>Prostoma</i>	04010101001	4.00	4.00		--	0.6	0.6
<i>Nais</i>	08020202009	6.67	6.67		CG	1.0	1.0
<i>Stylaria</i>	08020202014	1.33	1.33		CG	0.2	0.2
<i>Corduliidae</i>	09020305	2.67	2.67		--	0.4	0.4
<i>Baetis</i>	09020401001		12.00	4	CG		1.8
<i>Baetis flavistriga</i>	09020401001004	12.00			--	1.8	
<i>Stenacron</i>	09020402014	10.67	10.67	7	SC	1.6	1.6
<i>Tricorythodes</i>	09020411038	14.67	14.67	4	CG	2.1	2.1
<i>Chimarra</i>	09020601003		46.67	2	CF		6.8
<i>Chimarra obscura</i>	09020601003003	46.67			--	6.8	
<i>Neureclipsis</i>	09020603008	45.33	45.33	7	CF	6.6	6.6
<i>Cheumatopsyche</i>	09020604015	129.33	129.33	5	CF	18.9	18.9
<i>Hydropsyche</i>	09020604016	1.33	26.67	4	CF	0.2	3.9
<i>Hydropsyche morosa</i>	09020604016030	10.67			--	1.6	
<i>Hydropsyche sparna</i>	09020604016032	1.33			--	0.2	
<i>Hydropsyche betteni</i>	09020604016037	13.33			--	1.9	
<i>Macrostemum</i>	09020604018	164.00	164.00	3	CF	23.9	23.9
<i>Hydroptila</i>	09020607026	9.33	9.33	6	P	1.4	1.4
<i>Micrasema</i>	09020609044	1.33	1.33	2	SH	0.2	0.2
<i>Oecetis</i>	09020618078	16.00	16.00	8	PR	2.3	2.3
<i>Antocha</i>	09021001004	1.33	1.33	3	CG	0.2	0.2
<i>Thienemannimyia</i>	09021011020		4.00	3	PR		0.6
<i>Thienemannimyia group</i>	09021011020041	4.00			--	0.6	
<i>Cricotopus</i>	09021011037	78.67	92.00	7	SH	11.5	13.4
<i>Cricotopus bicinctus</i>	09021011037057	13.33			--	1.9	
<i>Nanocladius</i>	09021011049	1.33	1.33	3	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072		9.33	6	CF		1.4
<i>Rheotanytarsus exiguus group</i>	09021011072127	9.33			CF	1.4	
<i>Microtendipes</i>	09021011094		1.33	6	CF		0.2



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-1094	Waterbody: Narramissic River - Station 1094	Town: Orland
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Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Microtendipes rydalensis group</i>	09021011094168	1.33			--	0.2	
<i>Polypedilum</i>	09021011102		62.67	6	SH		9.1
<i>Polypedilum flavum</i>	09021011102182	62.67			--	9.1	
<i>Microcylloepus</i>	09021113066		2.67	3	--		0.4
<i>Microcylloepus pusillus</i>	09021113066041	2.67			--	0.4	
<i>Physella</i>	10010202027	2.67	2.67		SC	0.4	0.4
Sphaeriidae	10020201	1.33	1.33		CF	0.2	0.2



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

Station Information

Station Number: S-1094	River Basin: Penobscot
Waterbody: Narramissic River - Station 1094	HUC8 Name: Lower Penobscot
Town: Orland	Latitude: 44 35 33.1 N
Directions: 100M DOWNSTREAM OF DAM.	Longitude: 68 43 21.3 W
	Stream Order: 4

Sample Information

Log Number: 2840	Type of Sample: ROCK BASKET	Date Deployed: 7/27/2020
Subsample Factor: X4	Replicates: 3	Date Retrieved: 7/27/2020

Classification Attainment

Statutory Class: B	Final Determination: C	Date: 3/3/2022
Model Result with $P \geq 0.6$: C	Reason for Determination: Model	
Date Last Calculated: 10/19/2021	Comments:	

Model Probabilities

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

Model Variables

01 Total Mean Abundance	685.33	18 Relative Abundance Ephemeroptera	0.05
02 Generic Richness	26.00	19 EPT Generic Richness	11.00
03 Plecoptera Mean Abundance	0.00	21 Sum of Abundances: <i>Dicrotendipes</i> ,	0.00
04 Ephemeroptera Mean Abundance	37.33	<i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	
05 Shannon-Wiener Generic Diversity	3.44	23 Relative Generic Richness- Plecoptera	0.00
06 Hilsenhoff Biotic Index	4.82	25 Sum of Abundances: <i>Cheumatopsyche</i> ,	221.33
07 Relative Abundance - Chironomidae	0.25	<i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	
08 Relative Generic Richness Diptera	0.27	26 Sum of Abundances: <i>Acroneuria</i> ,	0.00
09 <i>Hydropsyche</i> Abundance	26.67	<i>Maccaffertium</i> , <i>Stenonema</i>	
11 <i>Cheumatopsyche</i> Abundance	129.33	28 EP Generic Richness/14	0.21
12 EPT Generic Richness/ Diptera	1.57	30 Presence of Class A Indicator Taxa/7	0.00
Generic Richness			

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Macrostemum</i>	23.93
2	<i>Cheumatopsyche</i>	18.87
3	<i>Cricotopus</i>	13.42
4	<i>Polypedilum</i>	9.14
5	<i>Chimarra</i>	6.81



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

Station Number: S-1094	Town: Orland	Date Deployed: 7/27/2020
Log Number: 2840	Waterbody: Narramissic River - Station 1094	Date Retrieved: 7/27/2020

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

Temperature:	26.7 deg C
Dissolved Oxygen:	8.53 mg/l
Dissolved Oxygen Saturation:	107.3 %
Specific Conductance:	60.5 uS/cm
Velocity:	0.4 cm/s
pH:	6.99
Wetted Width:	20 m
Bankfull Width:	20.5 m
Depth:	23.3 cm

Waterbody Information - Retrieval

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Hardwood	Open	Rolling	
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Nutrients	Below Dam	Boulder	20 %
		Gravel	40 %
		Rubble/Cobble	30 %
		Sand	10 %

Landcover Summary - 2004 Data

Sample Comments

VISIBLE FLOW. SMALLMOUTH BASS, LARGEMOUTH BASS, RED-BREASTED SUNFISH, AND SPINY-CHEEKED CRAYFISH OBSERVED.



Maine Department of Environmental Protection
Biological Monitoring Program
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<i>Rheotanytarsus exiguus group</i>	09021011072127	9.33			CF	1.4	
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