



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

**Station Information**

<b>Station Number:</b> 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**

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

**Classification Attainment**

<b>Statutory Class:</b> B	<b>Final Determination:</b> C	Date: 3/3/2022
Model Result with $P \geq 0.6$ : C	<b>Reason for Determination:</b> 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, Micropsectra, Parachironomus, 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, Cricotopus, Tanytarsus, Ablabesmyia</i>	221.33
06 Hilsenhoff Biotic Index	4.82	26 Sum of Abundances: <i>Acroneuria, Maccaffertium, 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



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**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.



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<b>Station Number: S-1094</b>	Waterbody: Narramissic River - Station 1094	Town: Orland
<b>Log Number: 2840</b>	Subsample Factor: X4	Replicates: 3
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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
Corduliidae	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



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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>	090210111102		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



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Town: Orland

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**Log Number: 2840**

Waterbody: Narramissic River - Station 1094

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**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

**Waterbody Information - Deployment**

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**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 %
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**Landcover Summary - 2004 Data**

**Sample Comments**

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



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<b>Log Number: 2840</b>	Subsample Factor: X4	Replicates: 3
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<i>Baetis</i>	09020401001		12.00	4	CG		1.8
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Dissolved Oxygen Saturation:    107.3 %  
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pH:                                    6.99  
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**Waterbody Information - Retrieval**

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		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**

<b>Station Number: S-1094</b>	Waterbody: Narramissic River - Station 1094	Town: Orland
<b>Log Number: 2840</b>	Subsample Factor: X4	Replicates: 3
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<b>Log Number: 2840</b>	Subsample Factor: X4	Replicates: 3

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
Corduliidae	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



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<b>Log Number: 2840</b>	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>Microtendipes rydalensis group</i>	09021011094168	1.33			--	0.2	
<i>Polypedilum</i>	090210111102		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**

<b>Station Number:</b> 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**

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

**Classification Attainment**

<b>Statutory Class:</b> B	<b>Final Determination:</b> C	Date: 3/3/2022
Model Result with $P \geq 0.6$ : C	<b>Reason for Determination:</b> 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, Micropsectra, Parachironomus, 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, Cricotopus, Tanytarsus, Ablabesmyia</i>	221.33
06 Hilsenhoff Biotic Index	4.82	26 Sum of Abundances: <i>Acroneuria, Maccaffertium, 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: 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.



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