



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

Station Information

Station Number: S-494	DEP Drainage: St. Croix - Coastal
Waterbody: East Machias River - Station 494	HUC8: 01050002
Town: Crawford	HUC8 Name: Maine Coastal
Directions: ABOVE RT. 9 CROSSING	Latitude: 45 0 5.11 N
	Longitude: 67 37 2.2 W
	Stream Order: 3

Sample Information

Log Number: 2056	Type of Sample: ROCK BAG	Date Deployed: 7/25/2011
Subsample Factor: X4	Replicates: 2	Date Retrieved: 8/24/2011

Classification Attainment

Statutory Class: AA	Final Determination: A	Date: 2/13/2012
Model Result with P>.6: A	Reason for Determination: Model	
Date Last Calculated: 2/10/2012	Comments:	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.55	Class A, B, or C	1.00
Class B	0.44	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.79
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.21

Model Variables

01 Total Mean Abundance	644.00	18 Relative Abundance Ephemeroptera	0.21
02 Generic Richness	29.00	19 EPT Generic Richness	17.00
03 Plecoptera Mean Abundance	22.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	136.00	23 Relative Generic Richness- Plecoptera	0.07
05 Shannon-Wiener Generic Diversity	3.41	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	36.00
06 Hilsenhoff Biotic Index	3.53	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	63.91
07 Relative Abundance - Chironomidae	0.08	28 EP Generic Richness/14	0.71
08 Relative Generic Richness Diptera	0.34	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	212.00		
11 <i>Cheumatopsyche</i> Abundance	30.00		
12 EPT Generic Richness/ Diptera	1.70		
Generic Richness			
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance	20.00		
(Family Functional Group)			
16 Tanypodinae Mean Abundance	0.00		
(Family Functional Group)			
17 Chironomini Abundance (Family	16.00		
Functional Group)			

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	32.92
2	<i>Chimarra</i>	18.94
3	<i>Baetis</i>	7.42
4	<i>Maccaffertium</i>	6.82
5	<i>Simulium</i>	5.28



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature:	24.5 deg C
Dissolved Oxygen:	8.4 mg/l
Specific Conductance:	19 uS/cm
Velocity:	25 cm/s
pH:	6.96
Wetted Width:	9 m
Bankfull Width:	16 m
Depth:	30 cm

Waterbody Information - Retrieval

Temperature:	22 deg C
Dissolved Oxygen:	8.7 mg/l
Specific Conductance:	18 uS/cm
Velocity:	50 cm/s
pH:	
Wetted Width:	13 m
Bankfull Width:	16 m
Depth:	20 cm

Water Chemistry

Summary of Habitat Characteristics

Landuse Name

Swamp Hardwood
Upland Conifer
Upland Hardwood

Canopy Cover

Open

Terrain

Rolling

Potential Stressor

Lake Outlet

Location

Above Road Crossing
Lake Outlet
Minimally Disturbed

Substrate

Boulder	55 %
Gravel	10 %
Rubble/Cobble	35 %

Landcover Summary - 2004 Data

Total Area (ac)	60441	High Int. Dev. %	0.0	Water %	7.7	Non-vegetated %	0.4
		Med Int. Dev. %	0.1	Wetland %	14.3	Tilled Agriculture %	0.6
		Low Int. Dev. %	1.3	Upland Woody %	74.9	Grassland %	0.6
		Development %	1.4	Natural %	88.7	Human Altered %	3.7
						Impervious %	0.8

Sample Comments

7/25/11: LOTS OF ALGAE OBSERVED ON ROCKS AND IN WATER; FISH AND MACROPHYTES OBSERVED.

MULTI-METER WOULD NOT MEASURE PH DURING RETRIEVAL. 8/24/11: ONE BAG LOST, 2 BAGS DISTURBED (FOUND IN THE RIVER ADJACENT AND UPSTREAM OF PLACED LOCATION); DEPTH OF ORIGINAL BAG LOCATION = 40 CM, DEPTH OF FOUND LOCATION = 20 CM.



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

Station Number: S-494

Waterbody: East Machias River - Station 494

Town: Crawford

Log Number: 2056

Subsample Factor: X4

Replicates: 2

Calculated: 2/10/2012

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
Perlodidae	09020207	2.00	2.00		--	0.3	0.3
<i>Acroneuria</i>	09020209042		20.00	0	PR		3.1
<i>Acroneuria abnormis</i>	09020209042121	14.00		0	PR	2.2	
<i>Acroneuria lycorias</i>	09020209042125	6.00			--	0.9	
Baetidae	09020401	2.00			--	0.3	
<i>Baetis</i>	09020401001	4.00	47.77	4	CG	0.6	7.4
<i>Baetis brunneicolor</i>	09020401001003	28.00			--	4.3	
<i>Baetis intercalaris</i>	09020401001008	14.00			--	2.2	
<i>Acerpenna</i>	09020401007	2.00	4.15	5	CG	0.3	0.6
<i>Acerpenna pygmaea</i>	09020401007011	2.00			--	0.3	
<i>Iswaeon</i>	09020401015	2.00	2.08		--	0.3	0.3
Heptageniidae	09020402	2.00			--	0.3	
<i>Leucrocuta</i>	09020402011	2.00	2.09	1	SC	0.3	0.3
<i>Maccaffertium</i>	09020402015	24.00	43.91	4	SC	3.7	6.8
<i>Maccaffertium luteum</i>	09020402015049	6.00			--	0.9	
<i>Maccaffertium modestum</i>	09020402015051	12.00			--	1.9	
<i>Isonychia</i>	09020404018	20.00	20.00	2	CF	3.1	3.1
Ephemerellidae	09020410	2.00	2.00		--	0.3	0.3
<i>Ephemerella</i>	09020410035	14.00	14.00	1	CG	2.2	2.2
<i>Chimarra</i>	09020601003	90.00	122.00	2	CF	14.0	18.9
<i>Chimarra aterrima</i>	09020601003002	2.00			--	0.3	
<i>Chimarra obscura</i>	09020601003003	10.00			--	1.6	
<i>Chimarra socia</i>	09020601003004	20.00			--	3.1	
<i>Neureclipsis</i>	09020603008	8.00	8.00	7	CF	1.2	1.2
<i>Polycentropus</i>	09020603010	2.00	2.00	6	PR	0.3	0.3
<i>Cheumatopsyche</i>	09020604015	30.00	30.00	5	CF	4.7	4.7
<i>Hydropsyche</i>	09020604016	68.00	212.00	4	CF	10.6	32.9
<i>Hydropsyche bronta</i>	09020604016029	54.00			--	8.4	
<i>Hydropsyche sparna</i>	09020604016032	84.00			--	13.0	
<i>Hydropsyche depravata complex</i>	09020604016041	6.00			CF	0.9	
<i>Macrostemum</i>	09020604018		16.00	3	CF		2.5
<i>Macrostemum zebratum</i>	09020604018054	16.00			--	2.5	
<i>Brachycentrus</i>	09020609043		2.00	0	CF		0.3
<i>Brachycentrus appalachia</i>	09020609043096	2.00			--	0.3	
<i>Nigronia</i>	09020701003		2.00	0	PR		0.3
<i>Nigronia serricornis</i>	09020701003003	2.00			--	0.3	
<i>Corynoneura</i>	09021011036	2.00	2.00	7	CG	0.3	0.3
<i>Cricotopus</i>	09021011037		6.00	7	SH		0.9



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<i>Cricotopus bicinctus</i>	09021011037057	6.00			--	0.9	
<i>Eukiefferiella</i>	09021011041		2.00	8	CG		0.3
<i>Eukiefferiella devonica group</i>	09021011041083	2.00			CG	0.3	
<i>Nanocladius</i>	09021011049	4.00	12.00	3	CG	0.6	1.9
<i>Nanocladius branchicolus</i>	09021011049091	2.00			--	0.3	
<i>Nanocladius downesi</i>	09021011049092	6.00			--	0.9	
<i>Rheocricotopus</i>	09021011057		4.00	6	CG		0.6
<i>Rheocricotopus robacki</i>	09021011057105	4.00			--	0.6	
<i>Tvetenia</i>	09021011065		2.00	5	CG		0.3
<i>Tvetenia vitracies</i>	09021011065113	2.00			--	0.3	
<i>Rheotanytarsus</i>	09021011072	10.00	10.00	6	CF	1.6	1.6
<i>Microtendipes</i>	09021011094		4.00	6	CF		0.6
<i>Microtendipes rydalensis group</i>	09021011094168	4.00			--	0.6	
<i>Polypedilum</i>	09021011102		12.00	6	SH		1.9
<i>Polypedilum flavum</i>	09021011102182	12.00			--	1.9	
<i>Simulium</i>	09021012047	6.00	34.00	4	CF	0.9	5.3
<i>Simulium fibrinflatum</i>	09021012047059	4.00			--	0.6	
<i>Simulium tuberosum</i>	09021012047067				--		
<i>Simulium jenningsi complex</i>	09021012047070	6.00			CF	0.9	
<i>Simulium venustum/verecundum complex</i>	09021012047072	18.00			CF	2.8	
<i>Promoresia</i>	09021113069		4.00		--		0.6
<i>Promoresia elegans</i>	09021113069051	4.00			--	0.6	