



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

Station Information

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

Sample Information

Log Number: 2509	Type of Sample:	ROCK BAG	Date Deployed:	7/28/2016	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/24/2016

Classification Attainment

Statutory Class: AA	Final Determination: A	Date:	6/23/2017
Model Result with $P \geq 0.6$:	A	Reason for Determination:	Model
Date Last Calculated:	6/22/2017	Comments:	

Model Probabilities

<u>First Stage Model</u>				<u>C or Better Model</u>	
Class A	0.50	Class C	0.02	Class A, B, or C	1.00
Class B	0.48	NA	0.00	Non-Attainment	0.00
<u>B or Better Model</u>				<u>A Model</u>	
Class A or B		1.00		Class A	0.85
Class C or Non-Attainment		0.00		Class B or C or Non-Attainment	0.15

Model Variables

01 Total Mean Abundance	826.00	18 Relative Abundance Ephemeroptera	0.25
02 Generic Richness	41.00	19 EPT Generic Richness	19.00
03 Plecoptera Mean Abundance	10.67	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	204.33	23 Relative Generic Richness- Plecoptera	0.02
05 Shannon-Wiener Generic Diversity	3.79	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	59.00
06 Hilsenhoff Biotic Index	3.92	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	86.33
07 Relative Abundance - Chironomidae	0.16	28 EP Generic Richness/14	0.64
08 Relative Generic Richness Diptera	0.32	30 Presence of Class A Indicator Taxa/7	0.43
09 <i>Hydropsyche</i> Abundance	200.00		
11 <i>Cheumatopsyche</i> Abundance	58.67		
12 EPT Generic Richness/ Diptera Generic Richness	1.46		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	10.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	3.67		
17 Chironomini Abundance (Family Functional Group)	33.67		

Five Most Dominant Taxa		
Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	24.21
2	<i>Chimarra</i>	16.02
3	<i>Maccaffertium</i>	9.16
4	<i>Cheumatopsyche</i>	7.10
5	<i>Rheotanytarsus</i>	7.06



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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: ECOANALYSTS IDAHO

Waterbody Information - Deployment

Temperature:	27.6 deg C
Dissolved Oxygen:	9.43 mg/l
Dissolved Oxygen Saturation:	120.2 %
Specific Conductance:	29.5 uS/cm
Velocity:	27.4 cm/s
pH:	7.36
Wetted Width:	17 m
Bankfull Width:	17 m
Depth:	30 cm

Waterbody Information - Retrieval

Temperature:	22.7 deg C
Dissolved Oxygen:	10.19 mg/l
Dissolved Oxygen Saturation:	117.4 %
Specific Conductance:	30.9 uS/cm
Velocity:	45.7 cm/s
pH:	7.08
Wetted Width:	17 m
Bankfull Width:	17 m
Depth:	29 cm

Water Chemistry - 8/24/2016

Nitrate+nitrite As N	0.01 mg/l	Total Phosphorus	8 ug/l
Total Kjeldahl Nitrogen	0.3 mg/l	Total Suspended Solids	<2 mg/l
Dissolved Organic Carbon	4.7 mg/l	Dissolved Organic Carbon	4.7 mg/l
Total Dissolved Solids	18 mg/l	Orthophosphate As Phosphorus	<1 ug/l

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Swamp Hardwood	Open	Rolling
Upland Conifer		
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Lake Outlet	Above Road Crossing	Boulder 65 %
	Lake Outlet	Gravel 10 %
		Rubble/Cobble 25 %

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

7/28/2016: VALLISNERIA; ABUNDANT ALGAE; POTAMOGETON; CRAYFISH, FISH PRESENT.
8/24/2016: FISH PRESENT.



Maine Department of Environmental Protection
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Aquatic Life Taxonomic Inventory Report

Station Number: S-494

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Town: Crawford

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Subsample Factor: X1

Replicates: 3

Calculated: 6/22/2017

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
<i>Acroneuria</i>	09020209042		10.67	0	PR		1.3
<i>Acroneuria abnormis</i>	09020209042121	10.67		0	PR	1.3	
<i>Boyeria</i>	09020301004		1.33	2	PR		0.2
<i>Boyeria vinosa</i>	09020301004012	1.33			--	0.2	
Calopterygidae	09020307	0.33	0.33		--	0.0	0.0
<i>Calopteryx</i>	09020307043	1.67	1.67	5	PR	0.2	0.2
<i>Baetis</i>	09020401001		53.67	4	CG		6.5
<i>Baetis flavistriga</i>	09020401001004	2.00			--	0.2	
<i>Baetis intercalaris</i>	09020401001008	18.00			--	2.2	
<i>Baetis pluto</i>	09020401001009	33.67			--	4.1	
<i>Acerpenna</i>	09020401007		17.67	5	CG		2.1
<i>Acerpenna pygmaea</i>	09020401007011	17.67			--	2.1	
<i>Iswaeon</i>	09020401015	3.33	3.33		--	0.4	0.4
<i>Epeorus</i>	09020402009	1.33	1.33	0	SC	0.2	0.2
<i>Leucrocuta</i>	09020402011	12.33	12.33	1	SC	1.5	1.5
<i>Maccaffertium</i>	09020402015		75.67	4	SC		9.2
<i>Maccaffertium modestum</i>	09020402015051	23.00			--	2.8	
<i>Maccaffertium vicarium</i>	09020402015055	52.67			--	6.4	
<i>Isonychia</i>	09020404018	29.33	29.33	2	CF	3.6	3.6
<i>Serratella</i>	09020410037		11.00	2	CG		1.3
<i>Serratella deficiens (Teloganopsis deficiens)</i>	09020410037121	4.33			--	0.5	
<i>Serratella serratoides</i>	09020410037124	6.67			--	0.8	
<i>Chimarra</i>	09020601003		132.33	2	CF		16.0
<i>Chimarra aterrima</i>	09020601003002	63.67			--	7.7	
<i>Chimarra obscura</i>	09020601003003	15.00			--	1.8	
<i>Chimarra socia</i>	09020601003004	53.67			--	6.5	
<i>Neureclipsis</i>	09020603008	12.00	12.00	7	CF	1.5	1.5
<i>Polycentropus</i>	09020603010	1.67	1.67	6	PR	0.2	0.2
<i>Cheumatopsyche</i>	09020604015	58.67	58.67	5	CF	7.1	7.1
<i>Hydropsyche</i>	09020604016		200.00	4	CF		24.2
<i>Hydropsyche morosa</i>	09020604016030	20.33			--	2.5	
<i>Hydropsyche sparna</i>	09020604016032	140.00			--	16.9	
<i>Hydropsyche walkeri</i>	09020604016034	38.67			--	4.7	
<i>Hydropsyche scalaris species group</i>	09020604016048	1.00			--	0.1	
<i>Macrostemum</i>	09020604018	33.00	33.00	3	CF	4.0	4.0
Hydroptilidae	09020607				--		
<i>Brachycentrus</i>	09020609043		2.00	0	CF		0.2



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<i>Brachycentrus appalachia</i>	09020609043096	2.00			--	0.2	
<i>Lepidostoma</i>	09020611064	1.00	1.00	1	SH	0.1	0.1
<i>Ceraclea</i>	09020618072	0.67	0.67	3	CG	0.1	0.1
<i>Oecetis</i>	09020618078		4.67	8	PR		0.6
<i>Oecetis persimilis</i>	09020618078157	4.67			--	0.6	
<i>Nigronia</i>	09020701003		0.33	0	PR		0.0
<i>Nigronia serricornis</i>	09020701003003	0.33			--	0.0	
<i>Nilotanytus</i>	09021011012		0.33	6	PR		0.0
<i>Nilotanytus fimbriatus</i>	09021011012027	0.33			--	0.0	
<i>Thienemannimyia</i>	09021011020		3.33	3	PR		0.4
<i>Thienemannimyia group</i>	09021011020041	3.33			--	0.4	
<i>Corynoneura</i>	09021011036	0.67	0.67	7	CG	0.1	0.1
<i>Cricotopus</i>	09021011037		0.33	7	SH		0.0
<i>Cricotopus bicinctus</i>	09021011037057	0.33			--	0.0	
<i>Eukiefferiella</i>	09021011041		22.33	8	CG		2.7
<i>Eukiefferiella discoloripes</i>	09021011041085	22.33			--	2.7	
<i>Nanocladius</i>	09021011049	5.67	5.67	3	CG	0.7	0.7
<i>Rheocricotopus</i>	09021011057	4.33	4.33	6	CG	0.5	0.5
<i>Rheotanytarsus</i>	09021011072		58.33	6	CF		7.1
<i>Rheotanytarsus exiguus group</i>	09021011072127	31.67			CF	3.8	
<i>Rheotanytarsus pellucidus</i>	09021011072128	26.67			CF	3.2	
<i>Microtendipes</i>	09021011094		4.67	6	CF		0.6
<i>Microtendipes rydalensis group</i>	09021011094168	4.67			--	0.6	
<i>Phaenopsectra</i>	09021011101	0.33	0.33	7	SC	0.0	0.0
<i>Polypedilum</i>	09021011102		28.67	6	SH		3.5
<i>Polypedilum aviceps</i>	09021011102181	28.00			--	3.4	
<i>Polypedilum flavum</i>	09021011102182	0.67			--	0.1	
<i>Simulium</i>	09021012047	17.00	17.00	4	CF	2.1	2.1
<i>Hemerodromia</i>	09021016057	0.67	0.67	3	PR	0.1	0.1
<i>Psephenus</i>	09021108058		0.67	4	SC		0.1
<i>Psephenus herricki</i>	09021108058028	0.67			--	0.1	
<i>Promoresia</i>	09021113069		9.67		--		1.2
<i>Promoresia elegans</i>	09021113069051	3.00			--	0.4	
<i>Promoresia tardella</i>	09021113069052	6.67			--	0.8	
<i>Stenelmis</i>	09021113070	3.67	3.67	5	SC	0.4	0.4
<i>Atractides</i>	09030102002	0.33	0.33		--	0.0	0.0
<i>Physa</i>	10010202027	0.33	0.33		SC	0.0	0.0