



**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 3.73 N
	Longitude: 67 37 3.4 W
	Stream Order: 3

Sample Information

Log Number: 1586	Type of Sample: ROCK BAG	Date Deployed: 7/26/2006
Subsample Factor: X4	Replicates: 3	Date Retrieved: 8/23/2006

Classification Attainment

Statutory Class: AA	Final Determination: A	Date: 6/26/2007
Model Result with P>.6: B	Reason for Determination: Best Professional Judgement	
Date Last Calculated: 3/13/2009	Comments: Lake Outlet Effect. Raised finding from Class B to next higher Class.	

Model Probabilities

<u>First Stage Model</u>		<u>C or Better Model</u>	
Class A	0.24	Class A, B, or C	1.00
Class B	0.72	Non-Attainment	0.00
<u>B or Better Model</u>		<u>A Model</u>	
Class A or B	1.00	Class A	0.25
Class C or Non-Attainment	0.00	Class B or C or Non-Attainment	0.75

Model Variables

01 Total Mean Abundance	1365.33	18 Relative Abundance Ephemeroptera	0.14
02 Generic Richness	37.00	19 EPT Generic Richness	18.00
03 Plecoptera Mean Abundance	32.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	0.00
04 Ephemeroptera Mean Abundance	192.00	23 Relative Generic Richness- Plecoptera	0.08
05 Shannon-Wiener Generic Diversity	2.87	25 Sum of Abundances: <i>Cheumatopsyche</i> <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	95.21
06 Hilsenhoff Biotic Index	3.86	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	97.03
07 Relative Abundance - Chironomidae	0.13	28 EP Generic Richness/14	0.79
08 Relative Generic Richness Diptera	0.32	30 Presence of Class A Indicator Taxa/7	0.29
09 <i>Hydropsyche</i> Abundance	667.25		
11 <i>Cheumatopsyche</i> Abundance	91.18		
12 EPT Generic Richness/ Diptera Generic Richness	1.50		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	30.67		
16 Tanypodinae Mean Abundance (Family Functional Group)	4.03		
17 Chironomini Abundance (Family Functional Group)	34.93		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Hydropsyche</i>	48.87
2	<i>Chimarra</i>	12.21
3	<i>Tvetenia</i>	6.79
4	<i>Cheumatopsyche</i>	6.68
5	<i>Baetis</i>	5.44



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Town: Crawford
Waterbody: East Machias River - Station 494

Date Deployed: 7/26/2006
Date Retrieved: 8/23/2006

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT
Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 25.2 deg C
Dissolved Oxygen: 7.9 mg/l
Specific Conductance: 27 uS/cm
Velocity: 65 cm/s
pH:
Wetted Width: 17 m
Bankfull Width: 17 m
Depth: 40 cm

Waterbody Information - Retrieval

Temperature: 21.5 deg C
Dissolved Oxygen: 8.2 mg/l
Specific Conductance: 24 uS/cm
Velocity: 59 cm/s
pH: 6.12
Wetted Width: 17 m
Bankfull Width:
Depth: 38 cm

Water Chemistry - Retrieval

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Swamp Hardwood	Canopy Open	Rolling Terrain
Upland Conifer		
Upland Hardwood		

<u>Stressor</u>	<u>Location</u>	<u>Substrate</u>	
	Pristine Landscape	Boulder	45 %
		Gravel	10 %
		Rubble/Cobble	45 %

Landcover Summary - 2004 Data

Total Area (ac)	60441	High Int. Dev. %	0.0	Water %	8.3	Non-vegetated %	0.4
Total Land (ac)	55804	Med Int. Dev. %	0.1	Wetland %	15.5	Tilled Agriculture %	0.6
		Low Int. Dev. %	1.4	Upland Woody %	81.1	Human Altered %	4.0
		Development %	1.5	Natural %	96.0	Impervious %	0.8

Sample Comments



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: 1586		Subsample Factor: X4		Replicates: 3		Calculated: 3/13/2009	
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance	
		Actual	Adjusted			Actual	Adjusted
Perlodidae	09020207	1.33	1.33		--	0.1	0.1
Perlidae	09020209	1.33			--	0.1	
<i>Acroneuria</i>	09020209042		23.70	0	PR		1.7
<i>Acroneuria abnormis</i>	09020209042121	22.67		0	PR	1.7	
<i>Attaneuria</i>	09020209043		6.97	1	--		0.5
<i>Attaneuria ruralis</i>	09020209043128	6.67			--	0.5	
<i>Boyeria</i>	09020301004		1.33	2	PR		0.1
<i>Boyeria vinosa</i>	09020301004012	1.33			--	0.1	
Calopterygidae	09020307	1.33	1.33		--	0.1	0.1
Baetidae	09020401	2.67			--	0.2	
<i>Baetis</i>	09020401001	5.33	74.22	4	CG	0.4	5.4
<i>Baetis flavistriga</i>	09020401001004	10.67			--	0.8	
<i>Baetis intercalaris</i>	09020401001008	6.67			--	0.5	
<i>Baetis pluto</i>	09020401001009	49.33			--	3.6	
<i>Heterocloeon</i>	09020401005	9.33	9.62	2	SC	0.7	0.7
<i>Acerpenna</i>	09020401007	2.67	5.50	5	CG	0.2	0.4
<i>Acerpenna pygmaea</i>	09020401007011	2.67			--	0.2	
<i>Leucrocuta</i>	09020402011	1.33	1.33	1	SC	0.1	0.1
<i>Maccaffertium</i>	09020402015	29.33	73.33	4	SC	2.1	5.4
<i>Maccaffertium luteum</i>	09020402015049	8.00			--	0.6	
<i>Maccaffertium modestum</i>	09020402015051	36.00			--	2.6	
<i>Isonychia</i>	09020404018	17.33	17.33	2	CF	1.3	1.3
<i>Ephemerella</i>	09020410035	6.67	6.67	1	CG	0.5	0.5
<i>Serratella</i>	09020410037		4.00	2	CG		0.3
<i>Serratella (Teloganopsis) deficiens</i>	09020410037121	4.00			--	0.3	
Philopotamidae	09020601	1.33	1.33		--	0.1	0.1
<i>Chimarra</i>	09020601003	166.67	166.67	2	CF	12.2	12.2
<i>Neureclipsis</i>	09020603008	6.67	6.67	7	CF	0.5	0.5
Hydropsychidae	09020604	26.67			--	2.0	
<i>Cheumatopsyche</i>	09020604015	88.00	91.18	5	CF	6.4	6.7
<i>Hydropsyche</i>	09020604016	256.00	667.25	4	CF	18.8	48.9
<i>Hydropsyche bronta</i>	09020604016029	6.67			--	0.5	
<i>Hydropsyche morosa</i>	09020604016030	214.67			--	15.7	
<i>Hydropsyche sparna</i>	09020604016032	160.00			--	11.7	
<i>Hydropsyche ventura</i>	09020604016033	1.33			--	0.1	
<i>Hydropsyche depravata complex</i>	09020604016041	4.00			CF	0.3	
<i>Hydropsyche scalaris group</i>	09020604016048	1.33			--	0.1	
<i>Macrostemum</i>	09020604018		6.91	3	CF		0.5



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		Actual	Adjusted			Actual	Adjusted
<i>Macrostemum zebratum</i>	09020604018054	6.67			--	0.5	
<i>Rhyacophila</i>	09020605019		1.33	2	PR		0.1
<i>Rhyacophila fuscula</i>	09020605019060	1.33			PR	0.1	
Chironomidae	09021011	1.33			--	0.1	
<i>Rheopelopia</i>	09021011017		4.03		PR		0.3
<i>Rheopelopia acra group</i>	09021011017036	4.00			--	0.3	
<i>Corynoneura</i>	09021011036	1.33	1.34	7	CG	0.1	0.1
<i>Cricotopus</i>	09021011037		2.69	7	SH		0.2
<i>Cricotopus bicinctus</i>	09021011037057	2.67			--	0.2	
<i>Nanocladius</i>	09021011049		4.03	3	CG		0.3
<i>Nanocladius branchicolus</i>	09021011049091	2.67			--	0.2	
<i>Nanocladius sp. 5 epler</i>	09021011049094	1.33			--	0.1	
<i>Orthocladius</i>	09021011050	1.33	1.34	6	CG	0.1	0.1
<i>Tvetenia</i>	09021011065		92.70	5	CG		6.8
<i>Tvetenia vitracies</i>	09021011065113	90.67			--	6.6	
<i>Tvetenia paucunca</i>	09021011065114	1.33			--	0.1	
<i>Rheotanytarsus</i>	09021011072	33.33	33.59	6	CF	2.4	2.5
<i>Tanytarsus</i>	09021011076	1.33	1.34	6	CF	0.1	0.1
<i>Microtendipes</i>	09021011094		10.75	6	CF		0.8
<i>Microtendipes rydalensis group</i>	09021011094168	10.67			--	0.8	
<i>Polypedilum</i>	09021011102		24.18	6	SH		1.8
<i>Polypedilum aviceps</i>	09021011102181	6.67			--	0.5	
<i>Polypedilum flavum</i>	09021011102182	16.00			--	1.2	
<i>Polypedilum illinoense group</i>	09021011102185	1.33			--	0.1	
<i>Simulium</i>	09021012047		5.33	4	CF		0.4
<i>Simulium jenningsi</i>	09021012047060	5.33			--	0.4	
<i>Hemerodromia</i>	09021016057	1.33	1.33	3	PR	0.1	0.1
<i>Psephenus</i>	09021108058		4.00	4	SC		0.3
<i>Psephenus herricki</i>	09021108058028	4.00			--	0.3	
<i>Promoresia</i>	09021113069		5.33		--		0.4
<i>Promoresia elegans</i>	09021113069051	5.33			--	0.4	
<i>Stenelmis</i>	09021113070	1.33	1.33	5	SC	0.1	0.1
Sphaeriidae	10020201	2.67	2.67		CF	0.2	0.2
<i>Musculium</i>	10020201001	1.33	1.33		CF	0.1	0.1