



**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: 6/19/2007 | 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 | 1474.00 | 18 Relative Abundance Ephemeroptera | 0.14 |
| 02 Generic Richness | 37.00 | 19 EPT Generic Richness | 18.00 |
| 03 Plecoptera Mean Abundance | 40.67 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00 |
| 04 Ephemeroptera Mean Abundance | 208.67 | 23 Relative Generic Richness- Plecoptera | 0.08 |
| 05 Shannon-Wiener Generic Diversity | 3.15 | 25 Sum of Abundances: <i>Cheumatopsyche</i> <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 103.33 |
| 06 Hilsenhoff Biotic Index | 3.89 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Stenonema</i> | 98.78 |
| 07 Relative Abundance - Chironomidae | 0.14 | 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 | 683.89 | | |
| 11 <i>Cheumatopsyche</i> Abundance | 91.09 | | |
| 12 EPT Generic Richness/ Diptera Generic Richness | 1.50 | | |
| 13 Relative Abundance - Oligochaeta | 0.00 | | |
| 15 Perlidae Mean Abundance (Family Functional Group) | 36.67 | | |
| 16 Tanypodinae Mean Abundance (Family Functional Group) | 6.12 | | |
| 17 Chironomini Abundance (Family Functional Group) | 41.47 | | |

Five Most Dominant Taxa

| Rank | Taxon Name | Percent |
|------|-----------------------|---------|
| 1 | <i>Hydropsyche</i> | 46.40 |
| 2 | <i>Chimarra</i> | 11.31 |
| 3 | <i>Tvetenia</i> | 6.55 |
| 4 | <i>Cheumatopsyche</i> | 6.18 |
| 5 | <i>Baetis</i> | 5.50 |



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Station Number: S-494
Log Number: 1586

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: DEP

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

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 % |

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: 6/19/2007

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|--------------------------------------|----------------------|-----------------------------|----------|-------------------------|--------------------------|--------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| Perlodidae | 09020207 | 4.00 | 4.00 | | -- | 0.3 | 0.3 |
| Perlidae | 09020209 | 4.00 | | | -- | 0.3 | |
| <i>Acroneuria</i> | 09020209042 | | 25.44 | 0 | PR | | 1.7 |
| <i>Acroneuria abnormis</i> | 09020209042121 | 22.67 | | 0 | PR | 1.5 | |
| <i>Attaneuria</i> | 09020209043 | | 11.22 | 1 | -- | | 0.8 |
| <i>Attaneuria ruralis</i> | 09020209043128 | 10.00 | | | -- | 0.7 | |
| <i>Boyeria</i> | 09020301004 | | 4.00 | 2 | PR | | 0.3 |
| <i>Boyeria vinosa</i> | 09020301004012 | 4.00 | | | -- | 0.3 | |
| Calopterygidae | 09020307 | 4.00 | 4.00 | | -- | 0.3 | 0.3 |
| Baetidae | 09020401 | 4.00 | | | -- | 0.3 | |
| <i>Baetis</i> | 09020401001 | 8.00 | 81.14 | 4 | CG | 0.5 | 5.5 |
| <i>Baetis flavistriga</i> | 09020401001004 | 10.67 | | | -- | 0.7 | |
| <i>Baetis intercalaris</i> | 09020401001008 | 10.00 | | | -- | 0.7 | |
| <i>Baetis pluto</i> | 09020401001009 | 49.33 | | | -- | 3.3 | |
| <i>Heterocloeon</i> | 09020401005 | 9.33 | 9.71 | 2 | SC | 0.6 | 0.7 |
| <i>Acerpenna</i> | 09020401007 | 4.00 | 12.48 | 5 | CG | 0.3 | 0.8 |
| <i>Acerpenna pygmaea</i> | 09020401007011 | 8.00 | | | -- | 0.5 | |
| <i>Leucrocuta</i> | 09020402011 | 4.00 | 4.00 | 1 | SC | 0.3 | 0.3 |
| <i>Stenonema</i> | 09020402015 | 29.33 | 73.33 | 4 | SC | 2.0 | 5.0 |
| <i>Stenonema luteum</i> | 09020402015049 | 8.00 | | | -- | 0.5 | |
| <i>Stenonema modestum</i> | 09020402015051 | 36.00 | | | -- | 2.4 | |
| <i>Isonychia</i> | 09020404018 | 17.33 | 17.33 | 2 | CF | 1.2 | 1.2 |
| <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 deficiens</i> | 09020410037121 | 4.00 | | | -- | 0.3 | |
| Philopotamidae | 09020601 | 4.00 | 4.00 | | -- | 0.3 | 0.3 |
| <i>Chimarra</i> | 09020601003 | 166.67 | 166.67 | 2 | CF | 11.3 | 11.3 |
| <i>Neureclipsis</i> | 09020603008 | 10.00 | 10.00 | 7 | CF | 0.7 | 0.7 |
| Hydropsychidae | 09020604 | 26.67 | | | -- | 1.8 | |
| <i>Cheumatopsyche</i> | 09020604015 | 88.00 | 91.09 | 5 | CF | 6.0 | 6.2 |
| <i>Hydropsyche</i> | 09020604016 | 256.00 | 683.89 | 4 | CF | 17.4 | 46.4 |
| <i>Hydropsyche bronta</i> | 09020604016029 | 10.00 | | | -- | 0.7 | |
| <i>Hydropsyche morosa</i> | 09020604016030 | 214.67 | | | -- | 14.6 | |
| <i>Hydropsyche sparna</i> | 09020604016032 | 160.00 | | | -- | 10.9 | |
| <i>Hydropsyche ventura</i> | 09020604016033 | 4.00 | | | -- | 0.3 | |
| <i>Hydropsyche depravata-complex</i> | 09020604016041 | 12.00 | | | CF | 0.8 | |
| <i>Hydropsyche scalaris-group</i> | 09020604016048 | 4.00 | | | -- | 0.3 | |
| <i>Macrostemum</i> | 09020604018 | | 10.35 | 3 | CF | | 0.7 |
| <i>Macrostemum zebratum</i> | 09020604018054 | 10.00 | | | -- | 0.7 | |
| <i>Rhyacophila</i> | 09020605019 | | 4.00 | 2 | PR | | 0.3 |
| <i>Rhyacophila fuscula</i> | 09020605019060 | 4.00 | | | PR | 0.3 | |
| Chironomidae | 09021011 | 4.00 | | | -- | 0.3 | |



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| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Rheopelopia</i> | 09021011017 | | 6.12 | | PR | | 0.4 |
| <i>Rheopelopia acra-grp.</i> | 09021011017036 | 6.00 | | | -- | 0.4 | |
| <i>Corynoneura</i> | 09021011036 | 4.00 | 4.08 | 7 | CG | 0.3 | 0.3 |
| <i>Cricotopus</i> | 09021011037 | | 8.16 | 7 | SH | | 0.6 |
| <i>Cricotopus bicinctus</i> | 09021011037057 | 8.00 | | | -- | 0.5 | |
| <i>Nanocladius</i> | 09021011049 | | 8.16 | 3 | CG | | 0.6 |
| <i>Nanocladius branchicolus</i> | 09021011049091 | 4.00 | | | -- | 0.3 | |
| <i>Nanocladius sp. 5 epler</i> | 09021011049094 | 4.00 | | | -- | 0.3 | |
| <i>Orthocladius</i> | 09021011050 | 4.00 | 4.08 | 6 | CG | 0.3 | 0.3 |
| <i>Tvetenia</i> | 09021011065 | | 96.54 | 5 | CG | | 6.5 |
| <i>Tvetenia vitracies</i> | 09021011065113 | 90.67 | | | -- | 6.2 | |
| <i>Tvetenia paucunca</i> | 09021011065114 | 4.00 | | | -- | 0.3 | |
| <i>Rheotanytarsus</i> | 09021011072 | 33.33 | 33.99 | 6 | CF | 2.3 | 2.3 |
| <i>Tanytarsus</i> | 09021011076 | 4.00 | 4.08 | 6 | CF | 0.3 | 0.3 |
| <i>Microtendipes</i> | 09021011094 | | 10.88 | 6 | CF | | 0.7 |
| <i>Microtendipes rydalensis-grp.</i> | 09021011094168 | 10.67 | | | -- | 0.7 | |
| <i>Polypedilum</i> | 09021011102 | | 30.59 | 6 | SH | | 2.1 |
| <i>Polypedilum aviceps</i> | 09021011102181 | 10.00 | | | -- | 0.7 | |
| <i>Polypedilum flavum</i> | 09021011102182 | 16.00 | | | -- | 1.1 | |
| <i>Polypedilum illinoense-grp.</i> | 09021011102185 | 4.00 | | | -- | 0.3 | |
| <i>Simulium</i> | 09021012047 | | 8.00 | 4 | CF | | 0.5 |
| <i>Simulium jenningsi</i> | 09021012047060 | 8.00 | | | -- | 0.5 | |
| <i>Hemerodromia</i> | 09021016057 | 4.00 | 4.00 | 3 | PR | 0.3 | 0.3 |
| <i>Psephenus</i> | 09021108058 | | 4.00 | 4 | SC | | 0.3 |
| <i>Psephenus herricki</i> | 09021108058028 | 4.00 | | | -- | 0.3 | |
| <i>Promoresia</i> | 09021113069 | | 8.00 | | -- | | 0.5 |
| <i>Promoresia elegans</i> | 09021113069051 | 8.00 | | | -- | 0.5 | |
| <i>Stenelmis</i> | 09021113070 | 4.00 | 4.00 | 5 | SC | 0.3 | 0.3 |
| Sphaeriidae | 10020201 | 8.00 | 8.00 | | CF | 0.5 | 0.5 |
| <i>Musculium</i> | 10020201001 | 4.00 | 4.00 | | CF | 0.3 | 0.3 |