



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

Station Information

Station Number: S-929

Waterbody: Aroostook River - Station 929

Town: Ashland

Directions: RAFFORD RD OFF RT 11

DEP Drainage: St. John

HUC8: 01010004

HUC8 Name: Aroostook River

Latitude: 46 34 33.9 N

Longitude: 68 24 27.23 W

Stream Order: 5

Sample Information

Log Number: 1856

Type of Sample: ROCK BASKET

Date Deployed: 7/23/2009

Subsample Factor: X1

Replicates: 3

Date Retrieved: 8/20/2009

Classification Attainment

Statutory Class: AA

Final Determination: A

Date: 1/14/2010

Model Result with P>.6: A

Reason for Determination: Model

Date Last Calculated: 1/12/2010

Comments:

Model Probabilities

First Stage Model

| | | | |
|---------|------|---------|------|
| Class A | 0.81 | Class C | 0.00 |
| Class B | 0.18 | NA | 0.00 |

B or Better Model

| | |
|---------------------------|------|
| Class A or B | 1.00 |
| Class C or Non-Attainment | 0.00 |

C or Better Model

| | |
|------------------|------|
| Class A, B, or C | 1.00 |
| Non-Attainment | 0.00 |

A Model

| | |
|--------------------------------|------|
| Class A | 1.00 |
| Class B or C or Non-Attainment | 0.00 |

Model Variables

| 01 Total Mean Abundance | 233.67 | 18 Relative Abundance Ephemeroptera | 0.34 | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|-----------------------|--|-------|-------------------------|--|--|------|------------|---------|---|-----------------------|-------|---|--------------------|-------|---|----------------------|-------|---|-----------------|------|---|------------------|------|
| 02 Generic Richness | 53.00 | 19 EPT Generic Richness | 29.00 | | | | | | | | | | | | | | | | | | | | | |
| 03 Plecoptera Mean Abundance | 5.00 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00 | | | | | | | | | | | | | | | | | | | | | |
| 04 Ephemeroptera Mean Abundance | 80.00 | 23 Relative Generic Richness- Plecoptera | 0.06 | | | | | | | | | | | | | | | | | | | | | |
| 05 Shannon-Wiener Generic Diversity | 4.14 | 25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 53.19 | | | | | | | | | | | | | | | | | | | | | |
| 06 Hilsenhoff Biotic Index | 4.13 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i> | 32.41 | | | | | | | | | | | | | | | | | | | | | |
| 07 Relative Abundance - Chironomidae | 0.21 | 28 EP Generic Richness/14 | 1.36 | | | | | | | | | | | | | | | | | | | | | |
| 08 Relative Generic Richness Diptera | 0.26 | 30 Presence of Class A Indicator Taxa/7 | 0.43 | | | | | | | | | | | | | | | | | | | | | |
| 09 <i>Hydropsyche</i> Abundance | 5.48 | <table border="1"><tr><th colspan="3">Five Most Dominant Taxa</th></tr><tr><th>Rank</th><th>Taxon Name</th><th>Percent</th></tr><tr><td>1</td><td><i>Cheumatopsyche</i></td><td>22.19</td></tr><tr><td>2</td><td><i>Polypedilum</i></td><td>12.41</td></tr><tr><td>3</td><td><i>Maccaffertium</i></td><td>12.02</td></tr><tr><td>4</td><td><i>Chimarra</i></td><td>7.99</td></tr><tr><td>5</td><td><i>Acerpenna</i></td><td>6.99</td></tr></table> | | Five Most Dominant Taxa | | | Rank | Taxon Name | Percent | 1 | <i>Cheumatopsyche</i> | 22.19 | 2 | <i>Polypedilum</i> | 12.41 | 3 | <i>Maccaffertium</i> | 12.02 | 4 | <i>Chimarra</i> | 7.99 | 5 | <i>Acerpenna</i> | 6.99 |
| Five Most Dominant Taxa | | | | | | | | | | | | | | | | | | | | | | | | |
| Rank | Taxon Name | Percent | | | | | | | | | | | | | | | | | | | | | | |
| 1 | <i>Cheumatopsyche</i> | 22.19 | | | | | | | | | | | | | | | | | | | | | | |
| 2 | <i>Polypedilum</i> | 12.41 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | <i>Maccaffertium</i> | 12.02 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | <i>Chimarra</i> | 7.99 | | | | | | | | | | | | | | | | | | | | | | |
| 5 | <i>Acerpenna</i> | 6.99 | | | | | | | | | | | | | | | | | | | | | | |
| 11 <i>Cheumatopsyche</i> Abundance | 51.86 | | | | | | | | | | | | | | | | | | | | | | | |
| 12 EPT Generic Richness/ Diptera | 2.07 | | | | | | | | | | | | | | | | | | | | | | | |
| Generic Richness | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 Relative Abundance - Oligochaeta | 0.00 | | | | | | | | | | | | | | | | | | | | | | | |
| 15 Perlidae Mean Abundance | 4.67 | | | | | | | | | | | | | | | | | | | | | | | |
| (Family Functional Group) | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 Tanypodinae Mean Abundance | 0.67 | | | | | | | | | | | | | | | | | | | | | | | |
| (Family Functional Group) | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 Chironomini Abundance (Family | 31.33 | | | | | | | | | | | | | | | | | | | | | | | |
| Functional Group) | | | | | | | | | | | | | | | | | | | | | | | | |



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

Station Number: S-929

Town: Ashland

Date Deployed: 7/23/2009

Log Number: 1856

Waterbody: Aroostook River - Station 929

Date Retrieved: 8/20/2009

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 21.7 deg C
Dissolved Oxygen: 9.2 mg/l
Specific Conductance: 49 uS/cm
Velocity: 23 cm/s
pH: 8.08
Wetted Width: 45 m
Bankfull Width: 45 m
Depth: 90 cm

Waterbody Information - Retrieval

Temperature: 22.7 deg C
Dissolved Oxygen: 8.6 mg/l
Specific Conductance: 51 uS/cm
Velocity: 17 cm/s
pH: 7.58
Wetted Width:
Bankfull Width:
Depth: 62 cm

Water Chemistry - 7/23/2009

| | | | |
|-----------------------------|------------|-------------------------|-----------|
| Soluble Reactive Phosphorus | 1 ug/l | Nitrate+nitrite As N | 0.01 mg/l |
| Total Phosphorus | 0.011 mg/l | Total Kjeldahl Nitrogen | 0.2 mg/l |
| Dissolved Organic Carbon | 6.8 mg/l | Total Alkalinity | 24 mg/l |

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> |
| | Main Stem | Gravel 50 % |
| | | Sand 50 % |

Landcover Summary - 2004 Data

Sample Comments



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-929

Waterbody: Aroostook River - Station 929

Town: Ashland

Log Number: 1856

Subsample Factor: X1

Replicates: 3

Calculated: 1/12/2010

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|--------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Placobdella</i> | 08030101006 | | 0.33 | | -- | | 0.1 |
| <i>Placobdella papillifera</i> | 08030101006003 | 0.33 | | | -- | 0.1 | |
| <i>Orconectes</i> | 09010301008 | | 0.33 | | CG | | 0.1 |
| <i>Orconectes virilis</i> | 09010301008016 | 0.33 | | | -- | 0.1 | |
| Isotomidae | 09020102 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| Capniidae | 09020203 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| Perlidae | 09020209 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Acroneuria</i> | 09020209042 | 0.33 | 4.33 | 0 | PR | 0.1 | 1.9 |
| <i>Acroneuria lycorias</i> | 09020209042125 | 4.00 | | | -- | 1.7 | |
| <i>Boyeria</i> | 09020301004 | | 1.00 | 2 | PR | | 0.4 |
| <i>Boyeria vinosa</i> | 09020301004012 | 1.00 | | | -- | 0.4 | |
| <i>Hagenius</i> | 09020302008 | | 0.33 | 1 | PR | | 0.1 |
| <i>Hagenius brevistylus</i> | 09020302008015 | 0.33 | | | PR | 0.1 | |
| <i>Neurocordulia</i> | 09020305026 | 0.33 | 0.67 | 2 | PR | 0.1 | 0.3 |
| <i>Neurocordulia michaeli</i> | 09020305026054 | 0.33 | | | -- | 0.1 | |
| Calopterygidae | 09020307 | 1.33 | 1.33 | | -- | 0.6 | 0.6 |
| <i>Calopteryx</i> | 09020307043 | | 0.33 | 5 | PR | | 0.1 |
| <i>Calopteryx aequabilis</i> | 09020307043085 | 0.33 | | | -- | 0.1 | |
| <i>Baetis</i> | 09020401001 | 0.33 | 0.67 | 4 | CG | 0.1 | 0.3 |
| <i>Baetis flavistriga</i> | 09020401001004 | 0.33 | | | -- | 0.1 | |
| <i>Acerpenna</i> | 09020401007 | 1.00 | 16.33 | 5 | CG | 0.4 | 7.0 |
| <i>Acerpenna pygmaea</i> | 09020401007011 | 15.33 | | | -- | 6.6 | |
| <i>Acentrella</i> | 09020401008 | 0.33 | 0.33 | 3 | CG | 0.1 | 0.1 |
| <i>Procloeon</i> | 09020401010 | 1.67 | 1.67 | | CG | 0.7 | 0.7 |
| <i>Plauditus</i> | 09020401012 | 1.00 | 1.00 | | CG | 0.4 | 0.4 |
| Heptageniidae | 09020402 | 10.67 | | | -- | 4.6 | |
| <i>Epeorus</i> | 09020402009 | 4.67 | 6.44 | 0 | SC | 2.0 | 2.8 |
| <i>Leucrocuta</i> | 09020402011 | 2.00 | 2.76 | 1 | SC | 0.9 | 1.2 |
| <i>Stenacron</i> | 09020402014 | 1.00 | 1.38 | 7 | SC | 0.4 | 0.6 |
| <i>Maccaffertium</i> | 09020402015 | 9.67 | 28.08 | 4 | SC | 4.1 | 12.0 |
| <i>Maccaffertium luteum</i> | 09020402015049 | 10.67 | | | -- | 4.6 | |
| <i>Isonychia</i> | 09020404018 | 11.00 | 11.00 | 2 | CF | 4.7 | 4.7 |
| Leptophlebiidae | 09020406 | 5.33 | 5.33 | | -- | 2.3 | 2.3 |
| <i>Ephemera</i> | 09020407027 | 0.33 | 0.33 | 1 | CG | 0.1 | 0.1 |
| <i>Ephemerella</i> | 09020410035 | 0.33 | 0.33 | 1 | CG | 0.1 | 0.1 |
| <i>Eurylophella</i> | 09020410036 | 0.33 | 0.33 | 3 | CG | 0.1 | 0.1 |
| <i>Tricorythodes</i> | 09020411038 | 3.00 | 3.00 | 4 | CG | 1.3 | 1.3 |
| <i>Caenis</i> | 09020412040 | 1.00 | 1.00 | 7 | CG | 0.4 | 0.4 |



Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report

Station Number: S-929

Waterbody: Aroostook River - Station 929

Town: Ashland

Log Number: 1856

Subsample Factor: X1

Replicates: 3

Calculated: 1/12/2010

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|---------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Chimarra</i> | 09020601003 | 18.67 | 18.67 | 2 | CF | 8.0 | 8.0 |
| <i>Cernotina</i> | 09020603006 | 0.33 | 0.33 | | PR | 0.1 | 0.1 |
| <i>Neureclipsis</i> | 09020603008 | 4.67 | 4.67 | 7 | CF | 2.0 | 2.0 |
| Hydropsychidae | 09020604 | 5.00 | | | -- | 2.1 | |
| <i>Cheumatopsyche</i> | 09020604015 | 47.33 | 51.86 | 5 | CF | 20.3 | 22.2 |
| <i>Hydropsyche</i> | 09020604016 | 2.67 | 5.48 | 4 | CF | 1.1 | 2.3 |
| <i>Hydropsyche morosa</i> | 09020604016030 | 2.33 | | | -- | 1.0 | |
| <i>Oxyethira</i> | 09020607028 | 0.33 | 0.33 | 3 | P | 0.1 | 0.1 |
| <i>Brachycentrus</i> | 09020609043 | | 7.00 | 0 | CF | | 3.0 |
| <i>Brachycentrus appalachia</i> | 09020609043096 | 0.33 | | | -- | 0.1 | |
| <i>Brachycentrus lateralis</i> | 09020609043097 | 6.67 | | | -- | 2.9 | |
| Limnephilidae | 09020610 | | | | -- | | |
| <i>Lepidostoma</i> | 09020611064 | 1.67 | 1.67 | 1 | SH | 0.7 | 0.7 |
| <i>Triaenodes</i> | 09020618077 | 0.33 | 0.33 | 6 | SH | 0.1 | 0.1 |
| <i>Oecetis</i> | 09020618078 | | 0.33 | 8 | PR | | 0.1 |
| <i>Oecetis avara</i> | 09020618078153 | 0.33 | | | -- | 0.1 | |
| <i>Larsia</i> | 09021011009 | 0.33 | 0.33 | 6 | PR | 0.1 | 0.1 |
| <i>Rheopelopia</i> | 09021011017 | | 0.33 | | PR | | 0.1 |
| <i>Rheopelopia acra group</i> | 09021011017036 | 0.33 | | | -- | 0.1 | |
| <i>Cricotopus</i> | 09021011037 | | 1.00 | 7 | SH | | 0.4 |
| <i>Cricotopus bicinctus</i> | 09021011037057 | 1.00 | | | -- | 0.4 | |
| <i>Nanocladius</i> | 09021011049 | | 3.00 | 3 | CG | | 1.3 |
| <i>Nanocladius branchicolus</i> | 09021011049091 | 0.33 | | | -- | 0.1 | |
| <i>Nanocladius downesi</i> | 09021011049092 | 2.67 | | | -- | 1.1 | |
| <i>Orthocladius</i> | 09021011050 | | 0.33 | 6 | CG | | 0.1 |
| <i>Orthocladius annectens</i> | 09021011050092 | 0.33 | | | -- | 0.1 | |
| <i>Rheocricotopus</i> | 09021011057 | 0.33 | 3.00 | 6 | CG | 0.1 | 1.3 |
| <i>Rheocricotopus robacki</i> | 09021011057105 | 2.67 | | | -- | 1.1 | |
| <i>Thienemanniella</i> | 09021011062 | 0.33 | 0.33 | 6 | CG | 0.1 | 0.1 |
| <i>Tvetenia</i> | 09021011065 | | 4.67 | 5 | CG | | 2.0 |
| <i>Tvetenia vitracies</i> | 09021011065113 | 4.67 | | | -- | 2.0 | |
| <i>Paratanytarsus</i> | 09021011071 | 0.33 | 0.33 | 6 | -- | 0.1 | 0.1 |
| <i>Rheotanytarsus</i> | 09021011072 | 5.00 | 5.00 | 6 | CF | 2.1 | 2.1 |
| <i>Tanytarsus</i> | 09021011076 | 0.33 | 0.33 | 6 | CF | 0.1 | 0.1 |
| <i>Microtendipes</i> | 09021011094 | | 2.33 | 6 | CF | | 1.0 |
| <i>Microtendipes rydalensis group</i> | 09021011094168 | 2.33 | | | -- | 1.0 | |
| <i>Polypedilum</i> | 09021011102 | | 29.00 | 6 | SH | | 12.4 |
| <i>Polypedilum aviceps</i> | 09021011102181 | 13.00 | | | -- | 5.6 | |



Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report

| | | |
|------------------------------|--|-----------------------|
| Station Number: S-929 | Waterbody: Aroostook River - Station 929 | Town: Ashland |
| Log Number: 1856 | Subsample Factor: X1 | Replicates: 3 |
| | | Calculated: 1/12/2010 |

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|-------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Polypedilum flavum</i> | 09021011102182 | 12.67 | | | -- | 5.4 | |
| <i>Polypedilum illinoense group</i> | 09021011102185 | 3.33 | | | -- | 1.4 | |
| <i>Simulium</i> | 09021012047 | 0.33 | 1.33 | 4 | CF | 0.1 | 0.6 |
| <i>Simulium penobscotensis</i> | 09021012047063 | | | | -- | | |
| <i>Simulium jenningsi complex</i> | 09021012047070 | 1.00 | | | CF | 0.4 | |
| <i>Dubiraphia</i> | 09021113064 | 1.00 | 1.00 | 6 | -- | 0.4 | 0.4 |
| Mesogastropoda | 100101 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Amnicola</i> | 10010104013 | | 0.67 | | SC | | 0.3 |
| <i>Amnicola limosa</i> | 10010104013018 | 0.67 | | | -- | 0.3 | |