



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

Station Information

| | |
|--|----------------------------|
| Station Number: S-291 | DEP Drainage: Penobscot |
| Waterbody: Souadabscook Stream - Station 291 | HUC8: 01020005 |
| Town: Hampden | HUC8 Name: Lower Penobscot |
| Directions: BELOW SAWYER LANDFILL | Latitude: 44 45 26.72 N |
| | Longitude: 68 51 27.98 W |
| | Stream Order: 3 |

Sample Information

| | | |
|-------------------------|--------------------------|---------------------------|
| Log Number: 2037 | Type of Sample: ROCK BAG | Date Deployed: 7/13/2011 |
| Subsample Factor: X4 | Replicates: 3 | Date Retrieved: 8/15/2011 |

Classification Attainment

| | | |
|---------------------------------|---|-----------------|
| Statutory Class: AA | Final Determination: A | Date: 2/13/2012 |
| Model Result with P>.6: B | Reason for Determination: Best Professional Judgement | |
| Date Last Calculated: 2/10/2012 | Comments: Lake Outlet Effect. Raised Finding from Indeterminate Class A (.41) to Class A. | |

Model Probabilities

| <u>First Stage Model</u> | | <u>C or Better Model</u> | |
|---------------------------|------|--------------------------------|------|
| Class A | 0.13 | Class A, B, or C | 1.00 |
| Class B | 0.81 | Non-Attainment | 0.00 |
| <u>B or Better Model</u> | | <u>A Model</u> | |
| Class A or B | 1.00 | Class A | 0.41 |
| Class C or Non-Attainment | 0.00 | Class B or C or Non-Attainment | 0.59 |

Model Variables

| | | | |
|--|---------|---|--------|
| 01 Total Mean Abundance | 2882.67 | 18 Relative Abundance Ephemeroptera | 0.14 |
| 02 Generic Richness | 54.00 | 19 EPT Generic Richness | 28.00 |
| 03 Plecoptera Mean Abundance | 21.33 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00 |
| 04 Ephemeroptera Mean Abundance | 408.00 | 23 Relative Generic Richness- Plecoptera | 0.06 |
| 05 Shannon-Wiener Generic Diversity | 3.46 | 25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 394.88 |
| 06 Hilsenhoff Biotic Index | 4.78 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i> | 37.17 |
| 07 Relative Abundance - Chironomidae | 0.38 | 28 EP Generic Richness/14 | 1.07 |
| 08 Relative Generic Richness Diptera | 0.30 | 30 Presence of Class A Indicator Taxa/7 | 0.43 |
| 09 <i>Hydropsyche</i> Abundance | 590.36 | | |
| 11 <i>Cheumatopsyche</i> Abundance | 392.21 | | |
| 12 EPT Generic Richness/ Diptera Generic Richness | 1.75 | | |
| 13 Relative Abundance - Oligochaeta | 0.00 | | |
| 15 Perlidae Mean Abundance (Family Functional Group) | 21.33 | | |
| 16 Tanypodinae Mean Abundance (Family Functional Group) | 24.03 | | |
| 17 Chironomini Abundance (Family Functional Group) | 217.60 | | |

Five Most Dominant Taxa

| Rank | Taxon Name | Percent |
|------|-----------------------|---------|
| 1 | <i>Rheotanytarsus</i> | 26.67 |
| 2 | <i>Hydropsyche</i> | 20.48 |
| 3 | <i>Cheumatopsyche</i> | 13.61 |
| 4 | <i>Baetis</i> | 9.01 |
| 5 | <i>Microtendipes</i> | 6.21 |



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| Station Number: S-291 | Town: Hampden | Date Deployed: 7/13/2011 |
| Log Number: 2037 | Waterbody: Souadabscook Stream - Station 291 | Date Retrieved: 8/15/2011 |

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

| | |
|-----------------------|------------|
| Temperature: | 25.6 deg C |
| Dissolved Oxygen: | 8.2 mg/l |
| Specific Conductance: | 83 uS/cm |
| Velocity: | 75 cm/s |
| pH: | 7.45 |
| Wetted Width: | 20 m |
| Bankfull Width: | 22 m |
| Depth: | 40 cm |

Waterbody Information - Retrieval

| | |
|-----------------------|------------|
| Temperature: | 22.1 deg C |
| Dissolved Oxygen: | 8.9 mg/l |
| Specific Conductance: | 143 uS/cm |
| Velocity: | 45 cm/s |
| pH: | 7.05 |
| Wetted Width: | 13 m |
| Bankfull Width: | 22 m |
| Depth: | 35 cm |

Water Chemistry - 8/15/2011

| | | | |
|--------------------------|-----------|-----------------------------|------------|
| Ammonia As Nitrogen | 0.01 mg/l | Soluble Reactive Phosphorus | 4 ug/l |
| Nitrate+nitrite As N | 0.04 mg/l | Total Phosphorus | 0.017 mg/l |
| Total Kjeldahl Nitrogen | 0.4 mg/l | Total Suspended Solids | <2 mg/l |
| Dissolved Organic Carbon | 4.9 mg/l | Total Dissolved Solids | 100 mg/l |

Summary of Habitat Characteristics

| | | |
|---------------------------|---------------------|--------------------|
| <u>Landuse Name</u> | <u>Canopy Cover</u> | <u>Terrain</u> |
| Upland Conifer | Open | Rolling |
| Upland Hardwood | | |
| <u>Potential Stressor</u> | <u>Location</u> | <u>Substrate</u> |
| Toxic Organics | Below Landfill | Boulder 45 % |
| | | Gravel 5 % |
| | | Rubble/Cobble 45 % |
| | | Sand 5 % |

Landcover Summary - 2004 Data

| | | | | | | | |
|-----------------|--------|------------------|-----|----------------|------|----------------------|------|
| Total Area (ac) | 110554 | High Int. Dev. % | 0.6 | Water % | 1.4 | Non-vegetated % | 0.4 |
| | | Med Int. Dev. % | 0.7 | Wetland % | 11.0 | Tilled Agriculture % | 4.5 |
| | | Low Int. Dev. % | 3.8 | Upland Woody % | 70.5 | Grassland % | 6.0 |
| | | Development % | 5.1 | Natural % | 81.6 | Human Altered % | 17.0 |
| | | | | | | Impervious % | 3.7 |

Sample Comments

FISH OBSERVED DURING RETRIEVAL.
FISH OBSERVED DURING DEPLOYMENT.



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Station Number: S-291

Waterbody: Souadabscook Stream - Station 291

Town: Hampden

Log Number: 2037

Subsample Factor: X4

Replicates: 3

Calculated: 2/10/2012

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|--|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| Perlidae | 09020209 | 4.00 | | | -- | 0.1 | |
| <i>Acroneuria</i> | 09020209042 | 1.33 | 14.77 | 0 | PR | 0.0 | 0.5 |
| <i>Acroneuria abnormis</i> | 09020209042121 | 4.00 | | 0 | PR | 0.1 | |
| <i>Acroneuria lycorias</i> | 09020209042125 | 2.67 | | | -- | 0.1 | |
| <i>Acroneuria mela</i> | 09020209042126 | 4.00 | | | -- | 0.1 | |
| <i>Attaneuria</i> | 09020209043 | | 4.92 | 1 | -- | | 0.2 |
| <i>Attaneuria ruralis</i> | 09020209043128 | 4.00 | | | -- | 0.1 | |
| <i>Paragnetina</i> | 09020209049 | | 1.64 | 1 | PR | | 0.1 |
| <i>Paragnetina media</i> | 09020209049151 | 1.33 | | | -- | 0.0 | |
| <i>Boyeria</i> | 09020301004 | | 1.33 | 2 | PR | | 0.0 |
| <i>Boyeria vinosa</i> | 09020301004012 | 1.33 | | | -- | 0.0 | |
| Baetidae | 09020401 | 46.67 | | | -- | 1.6 | |
| <i>Baetis</i> | 09020401001 | 48.00 | 259.68 | 4 | CG | 1.7 | 9.0 |
| <i>Baetis brunneicolor</i> | 09020401001003 | 8.00 | | | -- | 0.3 | |
| <i>Baetis flavistriga</i> | 09020401001004 | 12.00 | | | -- | 0.4 | |
| <i>Baetis intercalaris</i> | 09020401001008 | 153.33 | | | -- | 5.3 | |
| <i>Heterocloeon</i> | 09020401005 | | 4.69 | 2 | SC | | 0.2 |
| <i>Heterocloeon curiosum</i> | 09020401005020 | 4.00 | | | -- | 0.1 | |
| <i>Acerpenna</i> | 09020401007 | 29.33 | 43.80 | 5 | CG | 1.0 | 1.5 |
| <i>Acerpenna macdunnoughi</i> | 09020401007001 | 1.33 | | | -- | 0.0 | |
| <i>Acerpenna pygmaea</i> | 09020401007011 | 6.67 | | | -- | 0.2 | |
| <i>Plauditus</i> | 09020401012 | 2.67 | 3.13 | | CG | 0.1 | 0.1 |
| <i>Iswaeon</i> | 09020401015 | 4.00 | 4.69 | | -- | 0.1 | 0.2 |
| Heptageniidae | 09020402 | 8.00 | | | -- | 0.3 | |
| <i>Epeorus</i> | 09020402009 | 1.33 | 9.60 | 0 | SC | 0.0 | 0.3 |
| <i>Epeorus vitreus</i> | 09020402009033 | 6.67 | | | -- | 0.2 | |
| <i>Leucrocuta</i> | 09020402011 | 13.33 | 16.00 | 1 | SC | 0.5 | 0.6 |
| <i>Maccaffertium</i> | 09020402015 | 16.00 | 22.40 | 4 | SC | 0.6 | 0.8 |
| <i>Maccaffertium luteum</i> | 09020402015049 | 1.33 | | | -- | 0.0 | |
| <i>Maccaffertium modestum</i> | 09020402015051 | 1.33 | | | -- | 0.0 | |
| <i>Isonychia</i> | 09020404018 | 12.00 | 12.00 | 2 | CF | 0.4 | 0.4 |
| <i>Ephemerella</i> | 09020410035 | 22.67 | 22.67 | 1 | CG | 0.8 | 0.8 |
| <i>Serratella</i> | 09020410037 | | 8.00 | 2 | CG | | 0.3 |
| <i>Serratella (Teloganopsis) deficiens</i> | 09020410037121 | 6.67 | | | -- | 0.2 | |
| <i>Serratella serratoides</i> | 09020410037124 | 1.33 | | | -- | 0.0 | |
| <i>Tricorythodes</i> | 09020411038 | 1.33 | 1.33 | 4 | CG | 0.0 | 0.0 |
| Philopotamidae | 09020601 | 8.00 | 8.00 | | -- | 0.3 | 0.3 |
| <i>Chimarra</i> | 09020601003 | 86.67 | 161.33 | 2 | CF | 3.0 | 5.6 |



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| Log Number: 2037 | Subsample Factor: X4 | Replicates: 3 |
| | | Calculated: 2/10/2012 |

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|---|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Chimarra aterrima</i> | 09020601003002 | 17.33 | | | -- | 0.6 | |
| <i>Chimarra socia</i> | 09020601003004 | 57.33 | | | -- | 2.0 | |
| <i>Lype</i> | 09020602004 | 1.33 | 1.33 | 2 | SC | 0.0 | 0.0 |
| Polycentropodidae | 09020603 | 8.00 | | | -- | 0.3 | |
| <i>Neureclipsis</i> | 09020603008 | 78.67 | 85.51 | 7 | CF | 2.7 | 3.0 |
| <i>Polycentropus</i> | 09020603010 | 13.33 | 14.49 | 6 | PR | 0.5 | 0.5 |
| Hydropsychidae | 09020604 | 24.00 | | | -- | 0.8 | |
| <i>Cheumatopsyche</i> | 09020604015 | 382.67 | 392.21 | 5 | CF | 13.3 | 13.6 |
| <i>Hydropsyche</i> | 09020604016 | 385.33 | 590.36 | 4 | CF | 13.4 | 20.5 |
| <i>Hydropsyche bronta</i> | 09020604016029 | 1.33 | | | -- | 0.0 | |
| <i>Hydropsyche morosa</i> | 09020604016030 | 60.00 | | | -- | 2.1 | |
| <i>Hydropsyche sparna</i> | 09020604016032 | 85.33 | | | -- | 3.0 | |
| <i>Hydropsyche depravata complex</i> | 09020604016041 | 2.67 | | | CF | 0.1 | |
| <i>Hydropsyche placoda</i> | 09020604016059 | 41.33 | | | -- | 1.4 | |
| <i>Macrostemum</i> | 09020604018 | | 4.10 | 3 | CF | | 0.1 |
| <i>Macrostemum zebratum</i> | 09020604018054 | 4.00 | | | -- | 0.1 | |
| <i>Rhyacophila</i> | 09020605019 | | 1.33 | 2 | PR | | 0.0 |
| <i>Rhyacophila fuscata</i> | 09020605019060 | 1.33 | | | PR | 0.0 | |
| <i>Lepidostoma</i> | 09020611064 | 2.67 | 2.67 | 1 | SH | 0.1 | 0.1 |
| <i>Helicopsyche</i> | 09020616070 | | 1.33 | 3 | SC | | 0.0 |
| <i>Helicopsyche borealis</i> | 09020616070137 | 1.33 | | | -- | 0.0 | |
| Leptoceridae | 09020618 | 1.33 | 1.33 | | -- | 0.0 | 0.0 |
| <i>Oecetis</i> | 09020618078 | | 1.33 | 8 | PR | | 0.0 |
| <i>Oecetis persimilis</i> | 09020618078157 | 1.33 | | | -- | 0.0 | |
| <i>Corydalus</i> | 09020701002 | | 1.33 | 6 | PR | | 0.0 |
| <i>Corydalus cornutus</i> | 09020701002002 | 1.33 | | | -- | 0.0 | |
| <i>Nigronia</i> | 09020701003 | | 1.33 | 0 | PR | | 0.0 |
| <i>Nigronia serricornis</i> | 09020701003003 | 1.33 | | | -- | 0.0 | |
| Chironomidae | 09021011 | 1.33 | | | -- | 0.0 | |
| <i>Nilotanyus</i> | 09021011012 | | 8.01 | 6 | PR | | 0.3 |
| <i>Nilotanyus fimbriatus</i> | 09021011012027 | 8.00 | | | -- | 0.3 | |
| <i>Pentaneura</i> | 09021011014 | | 8.01 | 6 | PR | | 0.3 |
| <i>Pentaneura inconspicua</i> | 09021011014028 | 8.00 | | | -- | 0.3 | |
| <i>Rheopelopia</i> | 09021011017 | 4.00 | 8.01 | | PR | 0.1 | 0.3 |
| <i>Rheopelopia acra group</i> | 09021011017036 | 4.00 | | | -- | 0.1 | |
| <i>Cricotopus</i> | 09021011037 | | 1.33 | 7 | SH | | 0.0 |
| <i>Cricotopus triannulatus/infuscatus</i> | 09021011037078 | 1.33 | | | SH | 0.0 | |
| <i>Nanocladius</i> | 09021011049 | | 1.33 | 3 | CG | | 0.0 |



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|---------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Nanocladius spinipennis</i> | 09021011049090 | 1.33 | | | -- | 0.0 | |
| <i>Rheocricotopus</i> | 09021011057 | | 42.72 | 6 | CG | | 1.5 |
| <i>Rheocricotopus robacki</i> | 09021011057105 | 42.67 | | | -- | 1.5 | |
| <i>Synorthocladius</i> | 09021011061 | 5.33 | 5.34 | 2 | CG | 0.2 | 0.2 |
| <i>Tvetenia</i> | 09021011065 | | 33.37 | 5 | CG | | 1.2 |
| <i>Tvetenia vitracies</i> | 09021011065113 | 28.00 | | | -- | 1.0 | |
| <i>Tvetenia paucunca</i> | 09021011065114 | 5.33 | | | -- | 0.2 | |
| <i>Rheotanytarsus</i> | 09021011072 | 768.00 | 768.94 | 6 | CF | 26.6 | 26.7 |
| <i>Tanytarsus</i> | 09021011076 | 1.33 | 1.33 | 6 | CF | 0.0 | 0.0 |
| <i>Microtendipes</i> | 09021011094 | | 178.88 | 6 | CF | | 6.2 |
| <i>Microtendipes pedellus group</i> | 09021011094166 | 5.33 | | | -- | 0.2 | |
| <i>Microtendipes rydalensis group</i> | 09021011094168 | 173.33 | | | -- | 6.0 | |
| <i>Nilothauma</i> | 09021011095 | 4.00 | 4.00 | 2 | -- | 0.1 | 0.1 |
| <i>Polypedilum</i> | 09021011102 | | 34.71 | 6 | SH | | 1.2 |
| <i>Polypedilum flavum</i> | 09021011102182 | 34.67 | | | -- | 1.2 | |
| <i>Simulium</i> | 09021012047 | 1.33 | 9.33 | 4 | CF | 0.0 | 0.3 |
| <i>Simulium tuberosum</i> | 09021012047067 | | | | -- | | |
| <i>Simulium jenningsi complex</i> | 09021012047070 | 8.00 | | | CF | 0.3 | |
| <i>Atherix</i> | 09021015055 | 1.33 | 1.33 | 2 | PR | 0.0 | 0.0 |
| <i>Hemerodromia</i> | 09021016057 | 1.33 | 1.33 | 3 | PR | 0.0 | 0.0 |
| <i>Dineutus</i> | 09021104032 | 2.67 | 2.67 | 2 | -- | 0.1 | 0.1 |
| <i>Psephenus</i> | 09021108058 | | 6.67 | 4 | SC | | 0.2 |
| <i>Psephenus herricki</i> | 09021108058028 | 6.67 | | | -- | 0.2 | |
| <i>Microcylloepus</i> | 09021113066 | 12.00 | 12.00 | 3 | -- | 0.4 | 0.4 |
| <i>Promoresia</i> | 09021113069 | | 44.00 | | -- | | 1.5 |
| <i>Promoresia elegans</i> | 09021113069051 | 44.00 | | | -- | 1.5 | |
| <i>Stenelmis</i> | 09021113070 | 6.67 | 8.00 | 5 | SC | 0.2 | 0.3 |
| <i>Stenelmis crenata</i> | 09021113070055 | 1.33 | | | -- | 0.0 | |
| <i>Sperchonopsis</i> | 09030107002 | 1.33 | 1.33 | | -- | 0.0 | 0.0 |
| Aturidae | 09030120 | 1.33 | 1.33 | | -- | 0.0 | 0.0 |