



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

**Station Information**

|  |                                    |
|--|------------------------------------|
| <b>Station Number:</b> S-259                               | River Basin: Saco                  |
| Waterbody: Mousam River - Station 259                      | HUC8 Name: Piscataqua-Salmon Falls |
| Town: Sanford  | Latitude: 43 25 54.21 N            |
| Directions: 20 M ABOVE SCHOOL ST. CROSSING; BELOW LANDFILL | Longitude: 70 45 40.6 W            |
|  | Stream Order: 3                    |

**Sample Information**

|                         |                             |                           |
|-------------------------|-----------------------------|---------------------------|
| <b>Log Number:</b> 2377 | Type of Sample: ROCK BASKET | Date Deployed: 7/21/2015  |
| Subsample Factor: X10   | Replicates: 3               | Date Retrieved: 8/18/2015 |

**Classification Attainment**

|                                    |  |                 |
|------------------------------------|--|-----------------|
| <b>Statutory Class:</b> C          | <b>Final Determination:</b> C  | Date: 4/28/2016 |
| Model Result with $P \geq 0.6$ : C | <b>Reason for Determination: Best Professional Judgement</b>   |                 |
| Date Last Calculated: 4/26/2016    | Comments: Indeterminate for Class B (.53) not raised to Class B based on the percentage of sensitive taxa present. |                 |

**Model Probabilities**

| <u>First Stage Model</u>  |      | <u>C or Better Model</u>       |      |
|---------------------------|------|--------------------------------|------|
| Class A                   | 0.05 | Class A, B, or C               | 1.00 |
| Class B                   | 0.67 | Non-Attainment                 | 0.00 |
|                           |      |                                |      |
| <u>B or Better Model</u>  |      | <u>A Model</u>                 |      |
| Class A or B              | 0.53 | Class A                        | 0.03 |
| Class C or Non-Attainment | 0.47 | Class B or C or Non-Attainment | 0.97 |

**Model Variables**

|  |         |   |         |
|--|---------|---|---------|
| 01 Total Mean Abundance                                    | 5196.67 | 18 Relative Abundance Ephemeroptera   | 0.03    |
| 02 Generic Richness  | 37.00   | 19 EPT Generic Richness   | 13.00   |
| 03 Plecoptera Mean Abundance                               | 3.33    | 21 Sum of Abundances: <i>Dicrotendipes</i> ,<br><i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00    |
| 04 Ephemeroptera Mean Abundance                            | 130.00  | 23 Relative Generic Richness- Plecoptera  | 0.03    |
| 05 Shannon-Wiener Generic Diversity                        | 3.04    | 25 Sum of Abundances: <i>Cheumatopsyche</i> ,<br><i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>     | 1033.35 |
| 06 Hilsenhoff Biotic Index                                 | 3.90    | 26 Sum of Abundances: <i>Acroneuria</i> ,<br><i>Maccaffertium</i> , <i>Stenonema</i>                            | 10.00   |
| 07 Relative Abundance - Chironomidae                       | 0.30    | 28 EP Generic Richness/14   | 0.50    |
| 08 Relative Generic Richness Diptera                       | 0.32    | 30 Presence of Class A Indicator Taxa/7   | 0.29    |
| 09 <i>Hydropsyche</i> Abundance                            | 604.27  |   |         |
| 11 <i>Cheumatopsyche</i> Abundance                         | 244.98  |   |         |
| 12 EPT Generic Richness/ Diptera<br>Generic Richness       | 1.08    |   |         |
| 13 Relative Abundance - Oligochaeta                        | 0.01    |   |         |
| 15 Perlidae Mean Abundance (Family<br>Functional Group)    | 3.33    |   |         |
| 16 Tanypodinae Mean Abundance<br>(Family Functional Group) | 30.07   |   |         |
| 17 Chironomini Abundance (Family<br>Functional Group)      | 100.22  |   |         |

**Five Most Dominant Taxa**

| Rank | Taxon Name            | Percent |
|------|-----------------------|---------|
| 1    | <i>Chimarra</i>       | 41.89   |
| 2    | <i>Cricotopus</i>     | 15.11   |
| 3    | <i>Hydropsyche</i>    | 11.63   |
| 4    | <i>Rheotanytarsus</i> | 5.34    |
| 5    | <i>Cheumatopsyche</i> | 4.71    |



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**Station Number: S-259**      Town: Sanford      Date Deployed: 7/21/2015  
**Log Number: 2377**      Waterbody: Mousam River - Station 259      Date Retrieved: 8/18/2015

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 27 deg C  
 Dissolved Oxygen: 8.33 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance: 146.4 uS/cm  
 Velocity: 64 cm/s  
 pH: 7.22  
 Wetted Width: 11.4 m  
 Bankfull Width: 11.7 m  
 Depth: 31.5 cm

**Waterbody Information - Retrieval**

Temperature: 27 deg C  
 Dissolved Oxygen: 8.25 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance: 131.6 uS/cm  
 Velocity: 51.8 cm/s  
 pH: 7.05  
 Wetted Width: 9.5 m  
 Bankfull Width: 11.7 m  
 Depth: 21 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

| <u>Landuse Name</u>       | <u>Canopy Cover</u> | <u>Terrain</u>     |
|---------------------------|---------------------|--------------------|
| Upland Hardwood           | Open                | Flat               |
| Urban                     |                     |                    |
| <u>Potential Stressor</u> | <u>Location</u>     | <u>Substrate</u>   |
|                           | Above Road Crossing | Gravel 15 %        |
|                           | Below Landfill      | Rubble/Cobble 70 % |
|                           |                     | Sand 15 %          |

**Landcover Summary - 2004 Data**

|                 |       |                  |     |                |      |                      |      |
|-----------------|-------|------------------|-----|----------------|------|----------------------|------|
| Total Area (ac) | 27754 | High Int. Dev. % | 1.6 | Water %        | 7.2  | Non-vegetated %      | 0.0  |
|                 |       | Med Int. Dev. %  | 1.7 | Wetland %      | 3.5  | Tilled Agriculture % | 0.5  |
|                 |       | Low Int. Dev. %  | 3.4 | Upland Woody % | 75.1 | Grassland %          | 5.5  |
|                 |       | Development %    | 6.7 | Natural %      | 78.6 | Human Altered %      | 14.2 |
|                 |       |                  |     |                |      | Impervious %         | 5.3  |

**Sample Comments**

7/21/2015: 106.5% DO. ALGAE, MACROPHYTES AND FISH PRESENT.

8/18/2015: 103.4% DO. MUSKRAT PRESENT.



**Maine Department of Environmental Protection  
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Aquatic Life Taxonomic Inventory Report**

|                              |                                       |                       |
|------------------------------|---------------------------------------|-----------------------|
| <b>Station Number: S-259</b> | Waterbody: Mousam River - Station 259 | Town: Sanford         |
| <b>Log Number: 2377</b>      | Subsample Factor: X10                 | Replicates: 3         |
|                              |                                       | Calculated: 4/26/2016 |

| Taxon                                      | Maine Taxonomic Code | Count<br>(Mean of Samplers) |          | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % |          |
|--|----------------------|-----------------------------|----------|-------------------------|--------------------------|----------------------|----------|
|  |                      | Actual                      | Adjusted |                         |                          | Actual               | Adjusted |
| <i>Girardia</i>                            | 03010102002          |                             | 93.33    |                         | --                       |                      | 1.8      |
| <i>Girardia tigrina</i>                    | 03010102002001       | 93.33                       |          |                         | --                       | 1.8                  |          |
| <i>Prostoma</i>                            | 04010101001          | 6.67                        | 6.67     |                         | --                       | 0.1                  | 0.1      |
| <i>Nais</i>                                | 08020202009          |                             | 30.00    |                         | CG                       |                      | 0.6      |
| <i>Nais behningi</i>                       | 08020202009003       | 10.00                       |          |                         | --                       | 0.2                  |          |
| <i>Nais communis</i>                       | 08020202009005       | 13.33                       |          |                         | --                       | 0.3                  |          |
| <i>Nais variabilis</i>                     | 08020202009009       | 6.67                        |          |                         | --                       | 0.1                  |          |
| <i>Gammarus</i>                            | 09010201003          | 3.33                        | 26.67    | 4                       | --                       | 0.1                  | 0.5      |
| <i>Gammarus fasciatus</i>                  | 09010201003003       | 23.33                       |          |                         | --                       | 0.4                  |          |
| <i>Paragnetina</i>                         | 09020209049          | 3.33                        | 3.33     | 1                       | PR                       | 0.1                  | 0.1      |
| <i>Boyeria</i>                             | 09020301004          |                             | 6.67     | 2                       | PR                       |                      | 0.1      |
| <i>Boyeria vinosa</i>                      | 09020301004012       | 6.67                        |          |                         | --                       | 0.1                  |          |
| Baetidae                                   | 09020401             | 20.00                       |          |                         | --                       | 0.4                  |          |
| <i>Baetis</i>                              | 09020401001          | 30.00                       | 84.00    | 4                       | CG                       | 0.6                  | 1.6      |
| <i>Baetis flavistriga</i>                  | 09020401001004       | 13.33                       |          |                         | --                       | 0.3                  |          |
| <i>Baetis pluto</i>                        | 09020401001009       | 26.67                       |          |                         | --                       | 0.5                  |          |
| <i>Heterocloeon</i>                        | 09020401005          | 16.67                       | 20.00    | 2                       | SC                       | 0.3                  | 0.4      |
| <i>Acerpenna</i>                           | 09020401007          | 3.33                        | 4.00     | 5                       | CG                       | 0.1                  | 0.1      |
| <i>Labiobaetis</i>                         | 09020401009          |                             | 8.00     |                         | --                       |                      | 0.2      |
| <i>Labiobaetis propinquus</i>              | 09020401009010       | 6.67                        |          |                         | --                       | 0.1                  |          |
| <i>Iswaeon</i>                             | 09020401015          | 3.33                        | 4.00     |                         | --                       | 0.1                  | 0.1      |
| <i>Maccaffertium</i>                       | 09020402015          | 3.33                        | 10.00    | 4                       | SC                       | 0.1                  | 0.2      |
| <i>Maccaffertium modestum</i>              | 09020402015051       | 6.67                        |          |                         | --                       | 0.1                  |          |
| Philopotamidae                             | 09020601             | 110.00                      | 110.00   |                         | --                       | 2.1                  | 2.1      |
| <i>Chimarra</i>                            | 09020601003          | 173.33                      | 2176.67  | 2                       | CF                       | 3.3                  | 41.9     |
| <i>Chimarra aterrima</i>                   | 09020601003002       | 453.33                      |          |                         | --                       | 8.7                  |          |
| <i>Chimarra obscura</i>                    | 09020601003003       | 1550.00                     |          |                         | --                       | 29.8                 |          |
| Hydropsychidae                             | 09020604             | 156.67                      |          |                         | --                       | 3.0                  |          |
| <i>Cheumatopsyche</i>                      | 09020604015          | 200.00                      | 244.98   | 5                       | CF                       | 3.8                  | 4.7      |
| <i>Hydropsyche</i>                         | 09020604016          | 240.00                      | 604.27   | 4                       | CF                       | 4.6                  | 11.6     |
| <i>Hydropsyche sparna</i>                  | 09020604016032       | 170.00                      |          |                         | --                       | 3.3                  |          |
| <i>Hydropsyche depravata species group</i> | 09020604016041       | 83.33                       |          |                         | CF                       | 1.6                  |          |
| <i>Macrostemum</i>                         | 09020604018          |                             | 4.08     | 3                       | CF                       |                      | 0.1      |
| <i>Macrostemum zebratum</i>                | 09020604018054       | 3.33                        |          |                         | --                       | 0.1                  |          |
| <i>Brachycentrus</i>                       | 09020609043          |                             | 6.67     | 0                       | CF                       |                      | 0.1      |
| <i>Brachycentrus numerosus</i>             | 09020609043098       | 6.67                        |          |                         | --                       | 0.1                  |          |
| <i>Corydalus</i>                           | 09020701002          |                             | 3.33     | 6                       | PR                       |                      | 0.1      |



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**Log Number: 2377**      Subsample Factor: X10      Replicates: 3      Calculated: 4/26/2016

| Taxon                                       | Maine Taxonomic Code | Count (Mean of Samplers) |          | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % |          |
|---|----------------------|--------------------------|----------|-------------------------|--------------------------|----------------------|----------|
|   |                      | Actual                   | Adjusted |                         |                          | Actual               | Adjusted |
| <i>Corydalis cornutus</i>                   | 09020701002002       | 3.33                     |          |                         | --                       | 0.1                  |          |
| <i>Nigronia</i>                             | 09020701003          | 3.33                     | 3.33     | 0                       | PR                       | 0.1                  | 0.1      |
| <i>Parapoynx</i>                            | 09020901002          | 6.67                     | 6.67     | 5                       | SH                       | 0.1                  | 0.1      |
| <i>Petrophila</i>                           | 09020901004          | 3.33                     | 3.33     | 5                       | SC                       | 0.1                  | 0.1      |
| Chironomidae                                | 09021011             | 3.33                     |          |                         | --                       | 0.1                  |          |
| <i>Pentaneura</i>                           | 09021011014          |                          | 30.07    | 6                       | PR                       |                      | 0.6      |
| <i>Pentaneura inconspicua</i>               | 09021011014028       | 30.00                    |          |                         | --                       | 0.6                  |          |
| <i>Corynoneura</i>                          | 09021011036          | 16.67                    | 16.70    | 7                       | CG                       | 0.3                  | 0.3      |
| <i>Cricotopus</i>                           | 09021011037          |                          | 785.03   | 7                       | SH                       |                      | 15.1     |
| <i>Cricotopus bicinctus</i>                 | 09021011037057       | 783.33                   |          |                         | --                       | 15.1                 |          |
| <i>Orthocladus</i>                          | 09021011050          |                          | 56.79    | 6                       | CG                       |                      | 1.1      |
| <i>Orthocladus carlatus</i>                 | 09021011050093       | 56.67                    |          |                         | --                       | 1.1                  |          |
| <i>Orthocladus mallochi</i>                 | 09021011050102       |                          |          |                         | --                       |                      |          |
| <i>Rheocricotopus</i>                       | 09021011057          |                          | 43.43    | 6                       | CG                       |                      | 0.8      |
| <i>Rheocricotopus robacki</i>               | 09021011057105       | 43.33                    |          |                         | --                       | 0.8                  |          |
| <i>Thienemanniella</i>                      | 09021011062          |                          | 53.45    | 6                       | CG                       |                      | 1.0      |
| <i>Thienemanniella xena</i>                 | 09021011062110       | 53.33                    |          |                         | --                       | 1.0                  |          |
| <i>Tvetenia</i>                             | 09021011065          |                          | 173.71   | 5                       | CG                       |                      | 3.3      |
| <i>Tvetenia vitracies</i>                   | 09021011065113       | 173.33                   |          |                         | --                       | 3.3                  |          |
| <i>Rheotanytarsus</i>                       | 09021011072          |                          | 277.27   | 6                       | CF                       |                      | 5.3      |
| <i>Rheotanytarsus exiguus group</i>         | 09021011072127       | 276.67                   |          |                         | CF                       | 5.3                  |          |
| <i>Tanytarsus</i>                           | 09021011076          | 3.33                     | 3.34     | 6                       | CF                       | 0.1                  | 0.1      |
| <i>Microtendipes</i>                        | 09021011094          |                          | 3.34     | 6                       | CF                       |                      | 0.1      |
| <i>Microtendipes rydalensis group</i>       | 09021011094168       | 3.33                     |          |                         | --                       | 0.1                  |          |
| <i>Polypedilum</i>                          | 09021011102          |                          | 96.88    | 6                       | SH                       |                      | 1.9      |
| <i>Polypedilum flavum</i>                   | 09021011102182       | 56.67                    |          |                         | --                       | 1.1                  |          |
| <i>Polypedilum illinoense</i>               | 09021011102204       | 40.00                    |          |                         | --                       | 0.8                  |          |
| <i>Simulium</i>                             | 09021012047          | 100.00                   | 186.67   | 4                       | CF                       | 1.9                  | 3.6      |
| <i>Simulium jenningsi</i>                   | 09021012047060       |                          |          |                         | --                       |                      |          |
| <i>Simulium jenningsi species group</i>     | 09021012047070       | 43.33                    |          |                         | CF                       | 0.8                  |          |
| <i>Simulium venustum/verecundum complex</i> | 09021012047072       | 43.33                    |          |                         | CF                       | 0.8                  |          |
| <i>Macronychus</i>                          | 09021113065          |                          | 3.33     | 4                       | --                       |                      | 0.1      |
| <i>Macronychus glabratus</i>                | 09021113065040       | 3.33                     |          |                         | --                       | 0.1                  |          |
| <i>Promoresia</i>                           | 09021113069          |                          | 3.33     |                         | --                       |                      | 0.1      |
| <i>Promoresia elegans</i>                   | 09021113069051       | 3.33                     |          |                         | --                       | 0.1                  |          |
| Basommatophora                              | 100102               | 3.33                     | 3.33     |                         | --                       | 0.1                  | 0.1      |