



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

**Station Information**

|  |                                    |
|--|------------------------------------|
| <b>Station Number:</b> S-106                 | River Basin: Saco                  |
| Waterbody: Branch Brook - Station 106        | HUC8 Name: Piscataqua-Salmon Falls |
| Town: Sanford                                | Latitude: 43 23 0.49 N             |
| Directions: RT 109 CROSSING AT SAM ALLEN RD. | Longitude: 70 41 22.33 W           |
|  | Stream Order: 1                    |

**Sample Information**

|                         |                          |                           |
|-------------------------|--------------------------|---------------------------|
| <b>Log Number:</b> 2374 | Type of Sample: ROCK BAG | Date Deployed: 7/21/2015  |
| Subsample Factor: X1    | Replicates: 3            | Date Retrieved: 8/18/2015 |

**Classification Attainment**

|                                    |  |                 |
|------------------------------------|--|-----------------|
| <b>Statutory Class:</b> A          | <b>Final Determination:</b> A          | Date: 4/28/2016 |
| Model Result with $P \geq 0.6$ : A | <b>Reason for Determination:</b> Model |                 |
| Date Last Calculated: 4/26/2016    | Comments:                              |                 |

**Model Probabilities**

|                           |      |                                |      |
|---------------------------|------|--------------------------------|------|
| <u>First Stage Model</u>  |      | <u>C or Better Model</u>       |      |
| Class A                   | 0.52 | Class C                        | 0.05 |
| Class B                   | 0.44 | NA                             | 0.00 |
| <u>B or Better Model</u>  |      | <u>A Model</u>                 |      |
| Class A or B              | 0.96 | Class A                        | 0.84 |
| Class C or Non-Attainment | 0.04 | Class B or C or Non-Attainment | 0.16 |

**Model Variables**

|  |       |   |       |
|--|-------|---|-------|
| 01 Total Mean Abundance                                    | 89.00 | 18 Relative Abundance Ephemeroptera   | 0.04  |
| 02 Generic Richness  | 34.00 | 19 EPT Generic Richness   | 13.00 |
| 03 Plecoptera Mean Abundance                               | 9.67  | 21 Sum of Abundances: <i>Dicrotendipes</i> ,<br><i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 7.45  |
| 04 Ephemeroptera Mean Abundance                            | 3.33  | 23 Relative Generic Richness- Plecoptera  | 0.09  |
| 05 Shannon-Wiener Generic Diversity                        | 3.36  | 25 Sum of Abundances: <i>Cheumatopsyche</i> ,<br><i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>     | 2.71  |
| 06 Hilsenhoff Biotic Index                                 | 4.88  | 26 Sum of Abundances: <i>Acroneuria</i> ,<br><i>Maccaffertium</i> , <i>Stenonema</i>                            | 0.00  |
| 07 Relative Abundance - Chironomidae                       | 0.73  | 28 EP Generic Richness/14   | 0.50  |
| 08 Relative Generic Richness Diptera                       | 0.53  | 30 Presence of Class A Indicator Taxa/7   | 0.29  |
| 09 <i>Hydropsyche</i> Abundance                            | 0.00  |   |       |
| 11 <i>Cheumatopsyche</i> Abundance                         | 0.00  |   |       |
| 12 EPT Generic Richness/ Diptera<br>Generic Richness       | 0.72  |   |       |
| 13 Relative Abundance - Oligochaeta                        | 0.00  |   |       |
| 15 Perlidae Mean Abundance (Family<br>Functional Group)    | 0.00  |   |       |
| 16 Tanypodinae Mean Abundance<br>(Family Functional Group) | 5.08  |   |       |
| 17 Chironomini Abundance (Family<br>Functional Group)      | 45.03 |   |       |

**Five Most Dominant Taxa**

| Rank | Taxon Name           | Percent |
|------|----------------------|---------|
| 1    | <i>Microtendipes</i> | 43.36   |
| 2    | <i>Leuctra</i>       | 9.74    |
| 3    | <i>Micropsectra</i>  | 8.37    |
| 4    | <i>Polypedilum</i>   | 7.23    |
| 5    | <i>Tanytarsus</i>    | 3.04    |



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**Station Number: S-106**      Town: Sanford      Date Deployed: 7/21/2015  
**Log Number: 2374**      Waterbody: Branch Brook - Station 106      Date Retrieved: 8/18/2015

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

**Waterbody Information - Deployment**

Temperature: 17.1 deg C  
 Dissolved Oxygen: 8.64 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance: 82.2 uS/cm  
 Velocity: 12.2 cm/s  
 pH: 6.98  
 Wetted Width:  
 Bankfull Width:  
 Depth: 28 cm

**Waterbody Information - Retrieval**

Temperature: 17.7 deg C  
 Dissolved Oxygen: 8.86 mg/l  
 Dissolved Oxygen Saturation:  
 Specific Conductance: 45.4 uS/cm  
 Velocity:  
 pH: 7.17  
 Wetted Width: 2.64 m  
 Bankfull Width: 3.74 m  
 Depth: 33 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

|                           |                     |                   |
|---------------------------|---------------------|-------------------|
| <u>Landuse Name</u>       | <u>Canopy Cover</u> | <u>Terrain</u>    |
| Upland Conifer            | Dense               | Rolling           |
| Upland Hardwood           |                     |                   |
| <u>Potential Stressor</u> | <u>Location</u>     | <u>Substrate</u>  |
|                           | Above Road Crossing | Detritus 5 %      |
|                           | Below Airport       | Gravel 35 %       |
|                           |                     | Rubble/Cobble 5 % |
|                           |                     | Sand 55 %         |

**Landcover Summary - 2004 Data**

|                 |      |                  |      |                |      |                      |      |
|-----------------|------|------------------|------|----------------|------|----------------------|------|
| Total Area (ac) | 1078 | High Int. Dev. % | 8.2  | Water %        | 0.0  | Non-vegetated %      | 0.6  |
|                 |      | Med Int. Dev. %  | 2.2  | Wetland %      | 25.7 | Tilled Agriculture % | 0.3  |
|                 |      | Low Int. Dev. %  | 9.1  | Upland Woody % | 26.2 | Grassland %          | 1.0  |
|                 |      | Development %    | 19.5 | Natural %      | 52.3 | Human Altered %      | 47.7 |
|                 |      |                  |      |                |      | Impervious %         | 17.2 |

**Sample Comments**

7/21/2015: 91% DO. UNDERCUT BANKS.  
 8/18/2015: 93.3% DO.



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

**Station Number: S-106**

Waterbody: Branch Brook - Station 106

Town: Sanford

**Log Number: 2374**

Subsample Factor: X1

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 |
| Glossiphoniidae                      | 08030101             | 0.67                        | 0.67     |                         | --                       | 0.7                  | 0.7      |
| Leuctridae                           | 09020204             | 0.33                        | 0.33     |                         | --                       | 0.4                  | 0.4      |
| <i>Leuctra</i>                       | 09020204020          |                             | 8.67     | 0                       | SH                       |                      | 9.7      |
| <i>Leuctra ferruginea</i>            | 09020204020050       | 8.67                        |          |                         | --                       | 9.7                  |          |
| <i>Sweltsa</i>                       | 09020208040          | 0.67                        | 0.67     |                         | PR                       | 0.7                  | 0.7      |
| <i>Boyeria</i>                       | 09020301004          | 1.33                        | 1.33     | 2                       | PR                       | 1.5                  | 1.5      |
| <i>Labiobaetis</i>                   | 09020401009          |                             | 0.33     |                         | --                       |                      | 0.4      |
| <i>Labiobaetis frondalis</i>         | 09020401009005       | 0.33                        |          |                         | --                       | 0.4                  |          |
| Leptophlebiidae                      | 09020406             | 0.33                        | 0.33     |                         | --                       | 0.4                  | 0.4      |
| <i>Paraleptophlebia</i>              | 09020406026          | 0.67                        | 0.67     | 1                       | CG                       | 0.7                  | 0.7      |
| <i>Eurylophella</i>                  | 09020410036          | 2.00                        | 2.00     | 3                       | CG                       | 2.2                  | 2.2      |
| <i>Cernotina</i>                     | 09020603006          | 1.33                        | 1.33     |                         | PR                       | 1.5                  | 1.5      |
| <i>Oligostomis</i>                   | 09020608039          | 2.00                        | 2.00     | 2                       | PR                       | 2.2                  | 2.2      |
| Limnephilidae                        | 09020610             | 0.33                        | 0.33     |                         | --                       | 0.4                  | 0.4      |
| <i>Pycnopsyche</i>                   | 09020610049          | 0.33                        | 0.33     | 4                       | SH                       | 0.4                  | 0.4      |
| <i>Psilotreta</i>                    | 09020614068          | 0.33                        | 2.67     | 0                       | SC                       | 0.4                  | 3.0      |
| <i>Psilotreta frontalis</i>          | 09020614068134       | 2.33                        |          |                         | --                       | 2.6                  |          |
| <i>Molanna</i>                       | 09020615069          |                             | 0.33     | 6                       | SC                       |                      | 0.4      |
| <i>Molanna blenda</i>                | 09020615069133       | 0.33                        |          |                         | --                       | 0.4                  |          |
| <i>Antocha</i>                       | 09021001004          | 0.33                        | 0.33     | 3                       | CG                       | 0.4                  | 0.4      |
| <i>Dicranota</i>                     | 09021001005          | 0.33                        | 0.33     | 3                       | PR                       | 0.4                  | 0.4      |
| Chironomidae                         | 09021011             | 1.00                        |          |                         | --                       | 1.1                  |          |
| <i>Conchapelopia</i>                 | 09021011004          | 1.00                        | 1.02     | 6                       | PR                       | 1.1                  | 1.1      |
| <i>Labrundinia</i>                   | 09021011008          |                             | 1.02     | 7                       | PR                       |                      | 1.1      |
| <i>Labrundinia pilosella</i>         | 09021011008022       | 1.00                        |          |                         | --                       | 1.1                  |          |
| <i>Meropelopia</i>                   | 09021011010          | 0.67                        | 0.68     |                         | --                       | 0.7                  | 0.8      |
| <i>Natarsia</i>                      | 09021011011          | 0.33                        | 0.34     | 8                       | PR                       | 0.4                  | 0.4      |
| <i>Trissopelopia</i>                 | 09021011021          |                             | 2.03     |                         | PR                       |                      | 2.3      |
| <i>Trissopelopia ogemawi</i>         | 09021011021042       | 2.00                        |          |                         | --                       | 2.2                  |          |
| <i>Parametriocnemus</i>              | 09021011053          | 0.33                        | 0.34     | 5                       | CG                       | 0.4                  | 0.4      |
| <i>Tvetenia</i>                      | 09021011065          | 0.67                        | 0.68     | 5                       | CG                       | 0.7                  | 0.8      |
| <i>Micropsectra</i>                  | 09021011070          | 7.33                        | 7.45     | 7                       | CG                       | 8.2                  | 8.4      |
| <i>Rheotanytarsus</i>                | 09021011072          |                             | 2.03     | 6                       | CF                       |                      | 2.3      |
| <i>Rheotanytarsus exiguus group</i>  | 09021011072127       | 0.67                        |          |                         | CF                       | 0.7                  |          |
| <i>Rheotanytarsus pellucidus</i>     | 09021011072128       | 1.33                        |          |                         | CF                       | 1.5                  |          |
| <i>Stempellinella</i>                | 09021011074          |                             | 1.02     | 2                       | --                       |                      | 1.1      |
| <i>Stempellinella leptocelloides</i> | 09021011074001       | 0.33                        |          |                         | --                       | 0.4                  |          |



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**Station Number: S-106**      Waterbody: Branch Brook - Station 106      Town: Sanford  
**Log Number: 2374**      Subsample Factor: X1      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>Stempellinella fimbriata</i>       | 09021011074002       | 0.67                        |          |                         | --                       | 0.7                  |          |
| <i>Tanytarsus</i>                     | 09021011076          | 2.67                        | 2.71     | 6                       | CF                       | 3.0                  | 3.0      |
| <i>Microtendipes</i>                  | 09021011094          |                             | 38.59    | 6                       | CF                       |                      | 43.4     |
| <i>Microtendipes rydalensis group</i> | 09021011094168       | 38.00                       |          |                         | --                       | 42.7                 |          |
| <i>Polypedilum</i>                    | 09021011102          |                             | 6.43     | 6                       | SH                       |                      | 7.2      |
| <i>Polypedilum aviceps</i>            | 09021011102181       | 4.33                        |          |                         | --                       | 4.9                  |          |
| <i>Polypedilum illinoense</i>         | 09021011102204       | 2.00                        |          |                         | --                       | 2.2                  |          |
| <i>Apsectrotanypus</i>                | 09021011109          |                             | 0.34     |                         | --                       |                      | 0.4      |
| <i>Apsectrotanypus johnsoni</i>       | 09021011109001       | 0.33                        |          |                         | --                       | 0.4                  |          |
| <i>Brundiniella</i>                   | 09021011115          |                             | 0.34     |                         | --                       |                      | 0.4      |
| <i>Brundiniella eumorpha</i>          | 09021011115001       | 0.33                        |          |                         | --                       | 0.4                  |          |
| <i>Simulium</i>                       | 09021012047          | 0.33                        | 0.33     | 4                       | CF                       | 0.4                  | 0.4      |
| <i>Oulimnius</i>                      | 09021113068          |                             | 1.00     |                         | --                       |                      | 1.1      |
| <i>Oulimnius latiusculus</i>          | 09021113068049       | 1.00                        |          |                         | --                       | 1.1                  |          |