



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

**Station Information**

|                                           |               |               |
|-------------------------------------------|---------------|---------------|
| <b>Station Number:</b> S-728              | River Basin:  | St. John      |
| Waterbody: Big Brook - Station 728        | HUC8 Name:    | Fish          |
| Town: Madawaska                           | Latitude:     | 47 15 32.88 N |
| Directions: 22M DOWNSTREAM OF LAVERT ROAD | Longitude:    | 68 15 34.61 W |
|                                           | Stream Order: | 3             |

**Sample Information**

|                         |                          |                          |
|-------------------------|--------------------------|--------------------------|
| <b>Log Number:</b> 2746 | Type of Sample: ROCK BAG | Date Deployed: 7/10/2019 |
| Subsample Factor: X1    | Replicates: 3            | Date Retrieved: 8/6/2019 |

**Classification Attainment**

|                                    |                                        |                 |
|------------------------------------|----------------------------------------|-----------------|
| <b>Statutory Class:</b> B          | <b>Final Determination:</b> A          | Date: 3/20/2020 |
| Model Result with $P \geq 0.6$ : A | <b>Reason for Determination:</b> Model |                 |
| Date Last Calculated: 2/21/2020    | Comments:                              |                 |

**Model Probabilities**

| First Stage Model         |      | C or Better Model              |      |
|---------------------------|------|--------------------------------|------|
| Class A                   | 0.63 | Class A, B, or C               | 1.00 |
| Class B                   | 0.35 | Non-Attainment                 | 0.00 |
| B or Better Model         |      | A Model                        |      |
| Class A or B              | 1.00 | Class A                        | 0.99 |
| Class C or Non-Attainment | 0.00 | Class B or C or Non-Attainment | 0.01 |

**Model Variables**

|                                                            |        |                                                                                                                 |       |
|------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------|-------|
| 01 Total Mean Abundance                                    | 288.33 | 18 Relative Abundance Ephemeroptera                                                                             | 0.29  |
| 02 Generic Richness                                        | 43.00  | 19 EPT Generic Richness                                                                                         | 20.00 |
| 03 Plecoptera Mean Abundance                               | 4.33   | 21 Sum of Abundances: <i>Dicrondipetes</i> ,<br><i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00  |
| 04 Ephemeroptera Mean Abundance                            | 84.67  | 23 Relative Generic Richness- Plecoptera                                                                        | 0.05  |
| 05 Shannon-Wiener Generic Diversity                        | 4.56   | 25 Sum of Abundances: <i>Cheumatopsyche</i> ,<br><i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>     | 8.00  |
| 06 Hilsenhoff Biotic Index                                 | 4.51   | 26 Sum of Abundances: <i>Acroneuria</i> ,<br><i>Maccaffertium</i> , <i>Stenonema</i>                            | 5.00  |
| 07 Relative Abundance - Chironomidae                       | 0.17   | 28 EP Generic Richness/14                                                                                       | 0.79  |
| 08 Relative Generic Richness Diptera                       | 0.26   | 30 Presence of Class A Indicator Taxa/7                                                                         | 0.57  |
| 09 <i>Hydropsyche</i> Abundance                            | 16.33  |                                                                                                                 |       |
| 11 <i>Cheumatopsyche</i> Abundance                         | 4.00   |                                                                                                                 |       |
| 12 EPT Generic Richness/ Diptera<br>Generic Richness       | 1.82   |                                                                                                                 |       |
| 13 Relative Abundance - Oligochaeta                        | 0.00   |                                                                                                                 |       |
| 15 Perlidae Mean Abundance (Family<br>Functional Group)    | 4.33   |                                                                                                                 |       |
| 16 Tanypodinae Mean Abundance<br>(Family Functional Group) | 0.00   |                                                                                                                 |       |
| 17 Chironomini Abundance (Family<br>Functional Group)      | 17.33  |                                                                                                                 |       |

| Five Most Dominant Taxa |                    |         |
|-------------------------|--------------------|---------|
| Rank                    | Taxon Name         | Percent |
| 1                       | <i>Psephenus</i>   | 12.37   |
| 2                       | <i>Dubiraphia</i>  | 11.10   |
| 3                       | <i>Baetis</i>      | 9.36    |
| 4                       | <i>Hydropsyche</i> | 5.66    |
| 5                       | <i>Acerpenna</i>   | 5.43    |



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**Station Number: S-728**

Town: Madawaska

Date Deployed: 7/10/2019

**Log Number: 2746**

Waterbody: Big Brook - Station 728

Date Retrieved: 8/6/2019

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: LOTIC INC.

**Waterbody Information - Deployment**

|                              |             |
|------------------------------|-------------|
| Temperature:                 | 18.3 deg C  |
| Dissolved Oxygen:            | 9.81 mg/l   |
| Dissolved Oxygen Saturation: | 104.3 %     |
| Specific Conductance:        | 167.9 uS/cm |
| Velocity:                    | 39 cm/s     |
| pH:                          | 7.8         |
| Wetted Width:                | 4.4 m       |
| Bankfull Width:              | 5.8 m       |
| Depth:                       | 20 cm       |

**Waterbody Information - Retrieval**

|                              |             |
|------------------------------|-------------|
| Temperature:                 | 17.6 deg C  |
| Dissolved Oxygen:            | 10.07 mg/l  |
| Dissolved Oxygen Saturation: | 106.1 %     |
| Specific Conductance:        | 147.9 uS/cm |
| Velocity:                    | 57.9 cm/s   |
| pH:                          | 7.96        |
| Wetted Width:                | 4.3 m       |
| Bankfull Width:              | 5.7 m       |
| Depth:                       | 28 cm       |

**Water Chemistry**

**Summary of Habitat Characteristics**

Landuse Name

Cultivated

Pasture

Upland Hardwood

Potential Stressor

Agricultural Runoff

Nutrients

Sedimentation

Canopy Cover

Open

Location

Below Agriculture NPS

Terrain

Rolling

Substrate

Boulder 20 %

Gravel 20 %

Rubble/Cobble 60 %

**Landcover Summary - 2004 Data**

|                 |      |                  |     |                |      |                      |      |
|-----------------|------|------------------|-----|----------------|------|----------------------|------|
| Total Area (ac) | 7578 | High Int. Dev. % | 0.0 | Water %        | 0.8  | Non-vegetated %      | 0.0  |
|                 |      | Med Int. Dev. %  | 0.2 | Wetland %      | 4.0  | Tilled Agriculture % | 26.5 |
|                 |      | Low Int. Dev. %  | 1.4 | Upland Woody % | 58.5 | Grassland %          | 8.5  |
|                 |      | Development %    | 1.6 | Natural %      | 62.5 | Human Altered %      | 36.6 |
|                 |      |                  |     |                |      | Impervious %         | 1.1  |

**Sample Comments**

EASTERN KINGBIRD & GOLDFINCH PRESENT.



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

**Station Number: S-728**

Waterbody: Big Brook - Station 728

Town: Madawaska

**Log Number: 2746**

Subsample Factor: X1

Replicates: 3

Calculated: 2/21/2020

| Taxon                           | Maine<br>Taxonomic<br>Code | Count<br>(Mean of Samplers) |          | Hilsenhoff<br>Biotic<br>Index | Functional<br>Feeding<br>Group | Relative<br>Abundance % |          |
|---------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-------------------------|----------|
|                                 |                            | Actual                      | Adjusted |                               |                                | Actual                  | Adjusted |
| Glossiphoniidae                 | 08030101                   | 2.00                        | 2.00     |                               | --                             | 0.7                     | 0.7      |
| <i>Erpobdella</i>               | 08030203002                |                             | 1.67     |                               | --                             |                         | 0.6      |
| <i>Erpobdella obscura</i>       | 08030203002006             | 1.67                        |          |                               | --                             | 0.6                     |          |
| <i>Orconectes</i>               | 09010301008                |                             | 2.00     |                               | CG                             |                         | 0.7      |
| <i>Orconectes obscurus</i>      | 09010301008014             | 2.00                        |          |                               | --                             | 0.7                     |          |
| <i>Acroneuria</i>               | 09020209042                |                             | 0.33     | 0                             | PR                             |                         | 0.1      |
| <i>Acroneuria carolinensis</i>  | 09020209042123             | 0.33                        |          |                               | --                             | 0.1                     |          |
| <i>Agneta</i>                   | 09020209050                |                             | 4.00     | 2                             | PR                             |                         | 1.4      |
| <i>Agneta capitata</i>          | 09020209050152             | 4.00                        |          | 2                             | PR                             | 1.4                     |          |
| <i>Boyeria</i>                  | 09020301004                |                             | 0.33     | 2                             | PR                             |                         | 0.1      |
| <i>Boyeria vinosa</i>           | 09020301004012             | 0.33                        |          |                               | --                             | 0.1                     |          |
| <i>Baetis</i>                   | 09020401001                |                             | 27.00    | 4                             | CG                             |                         | 9.4      |
| <i>Baetis brunneicolor</i>      | 09020401001003             | 14.33                       |          |                               | --                             | 5.0                     |          |
| <i>Baetis flavistriga</i>       | 09020401001004             | 10.67                       |          |                               | --                             | 3.7                     |          |
| <i>Baetis intercalaris</i>      | 09020401001008             | 2.00                        |          |                               | --                             | 0.7                     |          |
| <i>Acerpenna</i>                | 09020401007                |                             | 15.67    | 5                             | CG                             |                         | 5.4      |
| <i>Acerpenna macdunnoughi</i>   | 09020401007001             | 15.67                       |          |                               | --                             | 5.4                     |          |
| <i>Plauditus</i>                | 09020401012                | 0.67                        | 0.67     |                               | CG                             | 0.2                     | 0.2      |
| <i>Leucrocota</i>               | 09020402011                | 6.33                        | 6.33     | 1                             | SC                             | 2.2                     | 2.2      |
| <i>Stenacron</i>                | 09020402014                |                             | 7.67     | 7                             | SC                             |                         | 2.7      |
| <i>Stenacron interpunctatum</i> | 09020402014045             | 7.67                        |          |                               | --                             | 2.7                     |          |
| <i>Maccaffertium</i>            | 09020402015                |                             | 4.67     | 4                             | SC                             |                         | 1.6      |
| <i>Maccaffertium vicarium</i>   | 09020402015055             | 4.67                        |          |                               | --                             | 1.6                     |          |
| <i>Eurylophella</i>             | 09020410036                | 9.00                        | 9.00     | 3                             | CG                             | 3.1                     | 3.1      |
| <i>Serratella</i>               | 09020410037                |                             | 1.33     | 2                             | CG                             |                         | 0.5      |
| <i>Serratella frisoni</i>       | 09020410037122             | 1.33                        |          |                               | --                             | 0.5                     |          |
| <i>Tricorythodes</i>            | 09020411038                |                             | 12.33    | 4                             | CG                             |                         | 4.3      |
| <i>Tricorythodes stygiatus</i>  | 09020411038128             | 12.33                       |          |                               | --                             | 4.3                     |          |
| <i>Lype</i>                     | 09020602004                |                             | 0.67     | 2                             | SC                             |                         | 0.2      |
| <i>Lype diversa</i>             | 09020602004005             | 0.67                        |          |                               | --                             | 0.2                     |          |
| <i>Polycentropus</i>            | 09020603010                | 2.00                        | 2.00     | 6                             | PR                             | 0.7                     | 0.7      |
| <i>Cheumatopsyche</i>           | 09020604015                | 4.00                        | 4.00     | 5                             | CF                             | 1.4                     | 1.4      |
| <i>Hydropsyche</i>              | 09020604016                |                             | 16.33    | 4                             | CF                             |                         | 5.7      |
| <i>Hydropsyche slossonae</i>    | 09020604016031             | 13.00                       |          |                               | --                             | 4.5                     |          |
| <i>Hydropsyche sparna</i>       | 09020604016032             | 3.33                        |          |                               | --                             | 1.2                     |          |
| <i>Rhyacophila</i>              | 09020605019                | 4.33                        | 5.67     | 2                             | PR                             | 1.5                     | 2.0      |
| <i>Rhyacophila fuscata</i>      | 09020605019060             | 1.33                        |          |                               | PR                             | 0.5                     |          |



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|                              |                                    |                       |
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| <b>Log Number: 2746</b>      | Subsample Factor: X1               | Replicates: 3         |
|                              |                                    | Calculated: 2/21/2020 |

| Taxon                               | Maine<br>Taxonomic<br>Code | Count<br>(Mean of Samplers) |          | Hilsenhoff<br>Biotic<br>Index | Functional<br>Feeding<br>Group | Relative<br>Abundance % |          |
|-------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-------------------------|----------|
|                                     |                            | Actual                      | Adjusted |                               |                                | Actual                  | Adjusted |
| <i>Glossosoma</i>                   | 09020606020                | 1.67                        | 1.67     | 0                             | SC                             | 0.6                     | 0.6      |
| <i>Hydroptila</i>                   | 09020607026                | 3.67                        | 3.67     | 6                             | P                              | 1.3                     | 1.3      |
| <i>Hydatophylax</i>                 | 09020610048                | 4.00                        | 4.00     | 2                             | SH                             | 1.4                     | 1.4      |
| <i>Oecetis</i>                      | 09020618078                | 1.00                        | 1.00     | 8                             | PR                             | 0.3                     | 0.3      |
| Lepidoptera                         | 090209                     | 1.00                        | 1.00     |                               | --                             | 0.3                     | 0.3      |
| Chironomidae                        | 09021011                   |                             |          |                               | --                             |                         |          |
| <i>Pagastia</i>                     | 09021011025                | 1.33                        | 1.33     | 1                             | --                             | 0.5                     | 0.5      |
| <i>Cricotopus</i>                   | 09021011037                |                             | 1.33     | 7                             | SH                             |                         | 0.5      |
| <i>Cricotopus bicinctus</i>         | 09021011037057             | 1.33                        |          |                               | --                             | 0.5                     |          |
| <i>Orthocladus</i>                  | 09021011050                | 13.00                       | 13.00    | 6                             | CG                             | 4.5                     | 4.5      |
| <i>Parametriocnemus</i>             | 09021011053                | 6.67                        | 6.67     | 5                             | CG                             | 2.3                     | 2.3      |
| <i>Thienemanniella</i>              | 09021011062                | 0.33                        | 0.33     | 6                             | CG                             | 0.1                     | 0.1      |
| <i>Rheotanytarsus</i>               | 09021011072                | 6.00                        | 6.00     | 6                             | CF                             | 2.1                     | 2.1      |
| <i>Tanytarsus</i>                   | 09021011076                | 2.67                        | 2.67     | 6                             | CF                             | 0.9                     | 0.9      |
| <i>Microtendipes</i>                | 09021011094                |                             | 0.67     | 6                             | CF                             |                         | 0.2      |
| <i>Microtendipes pedellus group</i> | 09021011094166             | 0.67                        |          |                               | --                             | 0.2                     |          |
| <i>Polypedilum</i>                  | 09021011102                |                             | 11.67    | 6                             | SH                             |                         | 4.0      |
| <i>Polypedilum aviceps</i>          | 09021011102181             | 11.67                       |          |                               | --                             | 4.0                     |          |
| <i>Tribelos</i>                     | 09021011107                | 5.00                        | 5.00     | 5                             | CG                             | 1.7                     | 1.7      |
| <i>Chrysops</i>                     | 09021014052                | 0.33                        | 0.33     | 6                             | CG                             | 0.1                     | 0.1      |
| <i>Psephenus</i>                    | 09021108058                |                             | 35.67    | 4                             | SC                             |                         | 12.4     |
| <i>Psephenus herricki</i>           | 09021108058028             | 35.67                       |          |                               | --                             | 12.4                    |          |
| <i>Dubiraphia</i>                   | 09021113064                | 32.00                       | 32.00    | 6                             | --                             | 11.1                    | 11.1     |
| <i>Optioservus</i>                  | 09021113067                | 11.00                       | 11.00    | 3                             | SC                             | 3.8                     | 3.8      |
| <i>Promoresia</i>                   | 09021113069                |                             | 13.67    |                               | --                             |                         | 4.7      |
| <i>Promoresia elegans</i>           | 09021113069051             | 13.67                       |          |                               | --                             | 4.7                     |          |
| <i>Stenelmis</i>                    | 09021113070                | 11.33                       | 11.33    | 5                             | SC                             | 3.9                     | 3.9      |
| <i>Lymnaea</i>                      | 10010201022                |                             | 0.33     |                               | SC                             |                         | 0.1      |
| <i>Lymnaea columella</i>            | 10010201022038             | 0.33                        |          |                               | --                             | 0.1                     |          |
| <i>Gyraulus</i>                     | 10010203029                | 0.33                        | 0.33     |                               | SC                             | 0.1                     | 0.1      |