



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

**Station Information**

|   |                            |
|---|----------------------------|
| <b>Station Number:</b> S-813  | River Basin: Penobscot     |
| Waterbody: Cove Brook - Station 813   | HUC8 Name: Lower Penobscot |
| Town: Winterport  | Latitude: 44 41 31.64 N    |
| Directions: PARK ON COVE RD NEAR PIPELINE SWATH<br>(YELLOW MARKER), HIKE DOWN TRAIL ALONG<br>PIPELINE; SAMPLE SITE IS DOWNSTREAM OF | Longitude: 68 51 4.94 W    |
|   | Stream Order: 2            |

**Sample Information**

|                         |                          |                           |
|-------------------------|--------------------------|---------------------------|
| <b>Log Number:</b> 2496 | Type of Sample: ROCK BAG | Date Deployed: 7/21/2016  |
| Subsample Factor: X1    | Replicates: 3            | Date Retrieved: 8/18/2016 |

**Classification Attainment**

|                                    |  |                 |
|------------------------------------|--|-----------------|
| <b>Statutory Class:</b> AA         | <b>Final Determination:</b> B          | Date: 1/30/2017 |
| Model Result with $P \geq 0.6$ : B | <b>Reason for Determination:</b> Model |                 |
| Date Last Calculated: 1/27/2017    | Comments:                              |                 |

**Model Probabilities**

|                           |      |                                |      |
|---------------------------|------|--------------------------------|------|
| <u>First Stage Model</u>  |      | <u>C or Better Model</u>       |      |
| Class A                   | 0.14 | Class A, B, or C               | 1.00 |
| Class B                   | 0.66 | Non-Attainment                 | 0.00 |
| <u>B or Better Model</u>  |      | <u>A Model</u>                 |      |
| Class A or B              | 0.91 | Class A                        | 0.09 |
| Class C or Non-Attainment | 0.09 | Class B or C or Non-Attainment | 0.91 |

**Model Variables**

|  |        |   |       |
|--|--------|---|-------|
| 01 Total Mean Abundance                                    | 489.00 | 18 Relative Abundance Ephemeroptera   | 0.22  |
| 02 Generic Richness  | 20.00  | 19 EPT Generic Richness   | 12.00 |
| 03 Plecoptera Mean Abundance                               | 4.33   | 21 Sum of Abundances: <i>Dicrotendipes</i> ,<br><i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00  |
| 04 Ephemeroptera Mean Abundance                            | 105.67 | 23 Relative Generic Richness- Plecoptera  | 0.05  |
| 05 Shannon-Wiener Generic Diversity                        | 2.78   | 25 Sum of Abundances: <i>Cheumatopsyche</i> ,<br><i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>     | 0.33  |
| 06 Hilsenhoff Biotic Index                                 | 4.56   | 26 Sum of Abundances: <i>Acroneuria</i> ,<br><i>Maccaffertium</i> , <i>Stenonema</i>                            | 57.67 |
| 07 Relative Abundance - Chironomidae                       | 0.06   | 28 EP Generic Richness/14   | 0.43  |
| 08 Relative Generic Richness Diptera                       | 0.15   | 30 Presence of Class A Indicator Taxa/7   | 0.14  |
| 09 <i>Hydropsyche</i> Abundance                            | 217.67 |   |       |
| 11 <i>Cheumatopsyche</i> Abundance                         | 0.00   |   |       |
| 12 EPT Generic Richness/ Diptera<br>Generic Richness       | 4.00   |   |       |
| 13 Relative Abundance - Oligochaeta                        | 0.00   |   |       |
| 15 Perlidae Mean Abundance (Family<br>Functional Group)    | 4.33   |   |       |
| 16 Tanypodinae Mean Abundance<br>(Family Functional Group) | 0.33   |   |       |
| 17 Chironomini Abundance (Family<br>Functional Group)      | 26.33  |   |       |

**Five Most Dominant Taxa**

|      |                      |         |
|------|----------------------|---------|
| Rank | Taxon Name           | Percent |
| 1    | <i>Hydropsyche</i>   | 44.51   |
| 2    | <i>Oecetis</i>       | 12.34   |
| 3    | <i>Maccaffertium</i> | 11.79   |
| 4    | <i>Baetis</i>        | 6.95    |
| 5    | <i>Polypedilum</i>   | 5.39    |



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**Log Number: 2496**      Waterbody: Cove Brook - Station 813      Date Retrieved: 8/18/2016

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT      Taxonomist: ECOANALYSTS IDAHO

**Waterbody Information - Deployment**

Temperature: 19.7 deg C  
Dissolved Oxygen: 10.8 mg/l  
Dissolved Oxygen Saturation: 117.7 %  
Specific Conductance: 230.1 uS/cm  
Velocity: 6.1 cm/s  
pH: 8.48  
Wetted Width: 5 m  
Bankfull Width: 8 m  
Depth: 33 cm

**Waterbody Information - Retrieval**

Temperature: 19.4 deg C  
Dissolved Oxygen: 10.77 mg/l  
Dissolved Oxygen Saturation: 117.3 %  
Specific Conductance: 240.3 uS/cm  
Velocity: 12.2 cm/s  
pH: 8.35  
Wetted Width: 4.3 m  
Bankfull Width: 8 m  
Depth: 29 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

|                           |                     |                         |
|---------------------------|---------------------|-------------------------|
| <u>Landuse Name</u>       | <u>Canopy Cover</u> | <u>Terrain</u>          |
| Swamp Hardwood            | Partly Open         | Rolling                 |
| Upland Conifer            |                     |                         |
| Upland Hardwood           |                     |                         |
| <u>Potential Stressor</u> | <u>Location</u>     | <u>Substrate</u>        |
|                           | Above Road Crossing | Boulder      70 %       |
|                           |                     | Gravel      5 %         |
|                           |                     | Rubble/Cobble      20 % |
|                           |                     | Sand      5 %           |

**Landcover Summary - 2004 Data**

|                 |      |                  |     |                |      |                      |      |
|-----------------|------|------------------|-----|----------------|------|----------------------|------|
| Total Area (ac) | 6558 | High Int. Dev. % | 0.1 | Water %        | 0.2  | Non-vegetated %      | 6.8  |
|                 |      | Med Int. Dev. %  | 0.3 | Wetland %      | 2.8  | Tilled Agriculture % | 4.2  |
|                 |      | Low Int. Dev. %  | 4.2 | Upland Woody % | 73.9 | Grassland %          | 7.4  |
|                 |      | Development %    | 4.6 | Natural %      | 76.6 | Human Altered %      | 23.2 |
|                 |      |                  |     |                |      | Impervious %         | 3.4  |

**Sample Comments**

7/21/2016: SILTY; FISH AND FROGS PRESENT.  
8/18/2016: SILTY; FISH PRESENT.



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**Log Number: 2496**

Waterbody: Cove Brook - Station 813  
Subsample Factor: X1

Town: Winterport

Replicates: 3

Calculated: 1/27/2017

| Taxon  | Maine Taxonomic Code | Count<br>(Mean of Samplers) |          | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % |          |
|--|----------------------|-----------------------------|----------|-------------------------|--------------------------|----------------------|----------|
|  |                      | Actual                      | Adjusted |                         |                          | Actual               | Adjusted |
| <i>Agnatina</i>                                      | 09020209050          |                             | 4.33     | 2                       | PR                       |                      | 0.9      |
| <i>Agnatina capitata</i>                             | 09020209050152       | 4.33                        |          | 2                       | PR                       | 0.9                  |          |
| <i>Boyeria</i>                                       | 09020301004          |                             | 0.33     | 2                       | PR                       |                      | 0.1      |
| <i>Boyeria vinosa</i>                                | 09020301004012       | 0.33                        |          | --                      | --                       | 0.1                  |          |
| <i>Baetis</i>  | 09020401001          |                             | 34.00    | 4                       | CG                       |                      | 7.0      |
| <i>Baetis flavistriga</i>                            | 09020401001004       | 34.00                       |          | --                      | --                       | 7.0                  |          |
| <i>Acerpenna</i>                                     | 09020401007          |                             | 11.00    | 5                       | CG                       |                      | 2.2      |
| <i>Acerpenna pygmaea</i>                             | 09020401007011       | 11.00                       |          | --                      | --                       | 2.2                  |          |
| <i>Maccaffertium</i>                                 | 09020402015          |                             | 57.67    | 4                       | SC                       |                      | 11.8     |
| <i>Maccaffertium vicarium</i>                        | 09020402015055       | 57.67                       |          | --                      | --                       | 11.8                 |          |
| Leptophlebiidae                                      | 09020406             | 0.67                        | 0.67     | --                      | --                       | 0.1                  | 0.1      |
| <i>Serratella</i>                                    | 09020410037          |                             | 2.33     | 2                       | CG                       |                      | 0.5      |
| <i>Serratella deficiens (Teloganopsis deficiens)</i> | 09020410037121       | 0.33                        |          | --                      | --                       | 0.1                  |          |
| <i>Serratella serratoides</i>                        | 09020410037124       | 2.00                        |          | --                      | --                       | 0.4                  |          |
| <i>Hydropsyche</i>                                   | 09020604016          |                             | 217.67   | 4                       | CF                       |                      | 44.5     |
| <i>Hydropsyche slossonae</i>                         | 09020604016031       | 181.33                      |          | --                      | --                       | 37.1                 |          |
| <i>Hydropsyche sparna</i>                            | 09020604016032       | 36.33                       |          | --                      | --                       | 7.4                  |          |
| <i>Rhyacophila</i>                                   | 09020605019          |                             | 10.00    | 2                       | PR                       |                      | 2.0      |
| <i>Rhyacophila fuscula</i>                           | 09020605019060       | 10.00                       |          |                         | PR                       | 2.0                  |          |
| Hydroptilidae  | 09020607             |                             |          | --                      | --                       |                      |          |
| Brachycentridae                                      | 09020609             | 0.33                        | 0.33     | --                      | --                       | 0.1                  | 0.1      |
| <i>Helicopsyche</i>                                  | 09020616070          |                             | 17.00    | 3                       | SC                       |                      | 3.5      |
| <i>Helicopsyche borealis</i>                         | 09020616070137       | 17.00                       |          | --                      | --                       | 3.5                  |          |
| <i>Mystacides</i>                                    | 09020618075          |                             | 0.33     | 4                       | CG                       |                      | 0.1      |
| <i>Mystacides sepulchralis</i>                       | 09020618075147       | 0.33                        |          | --                      | --                       | 0.1                  |          |
| <i>Oecetis</i>                                       | 09020618078          |                             | 60.33    | 8                       | PR                       |                      | 12.3     |
| <i>Oecetis persimilis</i>                            | 09020618078157       | 60.33                       |          | --                      | --                       | 12.3                 |          |
| <i>Ablabesmyia</i>                                   | 09021011001          |                             | 0.33     | 8                       | PR                       |                      | 0.1      |
| <i>Ablabesmyia mallochii</i>                         | 09021011001004       | 0.33                        |          | --                      | --                       | 0.1                  |          |
| <i>Orthocladius</i>                                  | 09021011050          | 2.67                        | 2.67     | 6                       | CG                       | 0.5                  | 0.5      |
| <i>Polypedilum</i>                                   | 09021011102          |                             | 26.33    | 6                       | SH                       |                      | 5.4      |
| <i>Polypedilum aviceps</i>                           | 09021011102181       | 26.33                       |          | --                      | --                       | 5.4                  |          |
| <i>Psephenus</i>                                     | 09021108058          |                             | 18.00    | 4                       | SC                       |                      | 3.7      |
| <i>Psephenus herricki</i>                            | 09021108058028       | 18.00                       |          | --                      | --                       | 3.7                  |          |
| <i>Macronychus</i>                                   | 09021113065          |                             | 0.33     | 4                       | --                       |                      | 0.1      |
| <i>Macronychus glabratus</i>                         | 09021113065040       | 0.33                        |          | --                      | --                       | 0.1                  |          |
| <i>Promoresia</i>                                    | 09021113069          |                             | 20.33    | --                      | --                       |                      | 4.2      |



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Town: Winterport

Subsample Factor: X1

Replicates: 3

Calculated: 1/27/2017

| 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>Promoresia tardella</i> | 09021113069052             | 20.33                       |          |                               | --                             | 4.2                     |          |
| Acariformes                | 090301                     | 5.00                        | 5.00     |                               | --                             | 1.0                     | 1.0      |