



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

Station Information

Station Number: S-1147 River Basin: Kennebec
Waterbody: Hall Brook - Station 1147 HUC8 Name: Lower Kennebec
Town: Thorndike Latitude: 44 34 55.67 N
Directions: ABOVE RT. 220 IN THORNDIKE. BELOW GRAVEL Longitude: 69 16 43.72 W
ROAD AND SALT PILE. BELOW MDOT BRIDGE # 2716 Stream Order: 2

Sample Information

Log Number: 2650 Type of Sample: ROCK BAG Date Deployed: 7/11/2018
Subsample Factor: X1 Replicates: 3 Date Retrieved: 8/8/2018

Classification Attainment

Statutory Class: A Final Determination: C Date: 10/24/2018
Model Result with $P \geq 0.6$: C Reason for Determination: Model
Date Last Calculated: 10/23/2018 Comments: Low Flow.

Model Probabilities

| First Stage Model | | C or Better Model | |
|---------------------------|------|--------------------------------|------|
| Class A | 0.07 | Class A, B, or C | 1.00 |
| Class B | 0.10 | Non-Attainment | 0.00 |
| B or Better Model | | A Model | |
| Class A or B | 0.02 | Class A | 0.04 |
| Class C or Non-Attainment | 0.98 | Class B or C or Non-Attainment | 0.96 |

Model Variables

| | | | |
|--|--------|---|-------|
| 01 Total Mean Abundance | 102.67 | 18 Relative Abundance Ephemeroptera | 0.52 |
| 02 Generic Richness | 36.00 | 19 EPT Generic Richness | 11.00 |
| 03 Plecoptera Mean Abundance | 0.00 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 4.73 |
| 04 Ephemeroptera Mean Abundance | 53.00 | 23 Relative Generic Richness- Plecoptera | 0.00 |
| 05 Shannon-Wiener Generic Diversity | 3.86 | 25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 9.09 |
| 06 Hilsenhoff Biotic Index | 3.92 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i> | 2.29 |
| 07 Relative Abundance - Chironomidae | 0.26 | 28 EP Generic Richness/14 | 0.50 |
| 08 Relative Generic Richness Diptera | 0.47 | 30 Presence of Class A Indicator Taxa/7 | 0.14 |
| 09 <i>Hydropsyche</i> Abundance | 0.33 | | |
| 11 <i>Cheumatopsyche</i> Abundance | 1.67 | | |
| 12 EPT Generic Richness/ Diptera Generic Richness | 0.65 | | |
| 13 Relative Abundance - Oligochaeta | 0.00 | | |
| 15 Perlidae Mean Abundance (Family Functional Group) | 0.00 | | |
| 16 Tanypodinae Mean Abundance (Family Functional Group) | 5.74 | | |
| 17 Chironomini Abundance (Family Functional Group) | 10.80 | | |

| Five Most Dominant Taxa | | |
|-------------------------|-------------------------|---------|
| Rank | Taxon Name | Percent |
| 1 | <i>Paraleptophlebia</i> | 29.22 |
| 2 | <i>Eurylophella</i> | 15.91 |
| 3 | <i>Pycnopsyche</i> | 5.84 |
| 4 | <i>Tanytarsus</i> | 5.59 |
| 5 | <i>Dicrotendipes</i> | 4.60 |



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| | | |
|-------------------------------|--------------------------------------|--------------------------|
| Station Number: S-1147 | Town: Thorndike | Date Deployed: 7/11/2018 |
| Log Number: 2650 | Waterbody: Hall Brook - Station 1147 | Date Retrieved: 8/8/2018 |

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL COLE

Waterbody Information - Deployment

| | |
|------------------------------|-------------|
| Temperature: | 19.5 deg C |
| Dissolved Oxygen: | 9.68 mg/l |
| Dissolved Oxygen Saturation: | 104.3 % |
| Specific Conductance: | 131.6 uS/cm |
| Velocity: | |
| pH: | 7.69 |
| Wetted Width: | 4.9 m |
| Bankfull Width: | 6 m |
| Depth: | 40 cm |

Waterbody Information - Retrieval

| | |
|------------------------------|-------------|
| Temperature: | 21.5 deg C |
| Dissolved Oxygen: | 7.42 mg/l |
| Dissolved Oxygen Saturation: | 83.7 % |
| Specific Conductance: | 284.4 uS/cm |
| Velocity: | |
| pH: | 6.99 |
| Wetted Width: | 4.5 m |
| Bankfull Width: | 6 m |
| Depth: | 36 cm |

Water Chemistry

Summary of Habitat Characteristics

Landuse Name

Cultivated

Pasture

Swamp Hardwood

Upland Hardwood

Canopy Cover

Partly Open

Terrain

Rolling

Potential Stressor

Chloride

Nps Pollution

Location

Above Road Crossing

Substrate

| | |
|---------|------|
| Boulder | 10 % |
|---------|------|

| | |
|--------|-----|
| Gravel | 5 % |
|--------|-----|

| | |
|---------------|------|
| Rubble/Cobble | 45 % |
|---------------|------|

| | |
|------|------|
| Sand | 40 % |
|------|------|

Landcover Summary - 2004 Data

Sample Comments

NO VISIBLE FLOW

VISIBLE FLOW. BELOW GRAVEL ROAD AND SALT PILE.



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Aquatic Life Taxonomic Inventory Report

Station Number: S-1147

Waterbody: Hall Brook - Station 1147

Town: Thorndike

Log Number: 2650

Subsample Factor: X1

Replicates: 3

Calculated: 10/23/2018

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % | |
|---|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-------------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Hyaella</i> | 09010203006 | 1.00 | 1.00 | 8 | CG | 1.0 | 1.0 |
| <i>Aeshna</i> | 09020301001 | 0.33 | 0.33 | 5 | PR | 0.3 | 0.3 |
| <i>Boyeria</i> | 09020301004 | | 1.00 | 2 | PR | | 1.0 |
| <i>Boyeria grafiana</i> | 09020301004011 | 0.33 | | | -- | 0.3 | |
| <i>Boyeria vinosa</i> | 09020301004012 | 0.67 | | | -- | 0.6 | |
| <i>Proclleon</i> | 09020401010 | 1.00 | 1.00 | | CG | 1.0 | 1.0 |
| Heptageniidae | 09020402 | 0.67 | | | -- | 0.6 | |
| <i>Heptagenia</i> | 09020402010 | 0.33 | 0.38 | 2 | SC | 0.3 | 0.4 |
| <i>Stenacron</i> | 09020402014 | 2.33 | 2.67 | 7 | SC | 2.3 | 2.6 |
| <i>Maccaffertium</i> | 09020402015 | 2.00 | 2.29 | 4 | SC | 1.9 | 2.2 |
| <i>Paraleptophlebia</i> | 09020406026 | 30.00 | 30.00 | 1 | CG | 29.2 | 29.2 |
| <i>Ephemerella</i> | 09020410035 | 0.33 | 0.33 | 1 | CG | 0.3 | 0.3 |
| <i>Eurylophella</i> | 09020410036 | 16.33 | 16.33 | 3 | CG | 15.9 | 15.9 |
| <i>Polycentropus</i> | 09020603010 | 4.67 | 4.67 | 6 | PR | 4.5 | 4.5 |
| <i>Cheumatopsyche</i> | 09020604015 | 1.67 | 1.67 | 5 | CF | 1.6 | 1.6 |
| <i>Hydropsyche</i> | 09020604016 | | 0.33 | 4 | CF | | 0.3 |
| <i>Hydropsyche scalaris species group</i> | 09020604016048 | 0.33 | | | -- | 0.3 | |
| Limnephilidae | 09020610 | | | | -- | | |
| <i>Pycnopsyche</i> | 09020610049 | 6.00 | 6.00 | 4 | SH | 5.8 | 5.8 |
| <i>Nigronia</i> | 09020701003 | | 0.33 | 0 | PR | | 0.3 |
| <i>Nigronia serricornis</i> | 09020701003003 | 0.33 | | | -- | 0.3 | |
| Chironomidae | 09021011 | 0.33 | | | -- | 0.3 | |
| <i>Ablabesmyia</i> | 09021011001 | 0.33 | 0.34 | 8 | PR | 0.3 | 0.3 |
| <i>Labrundinia</i> | 09021011008 | 0.33 | 0.34 | 7 | PR | 0.3 | 0.3 |
| <i>Paramerina</i> | 09021011013 | 0.33 | 0.34 | | -- | 0.3 | 0.3 |
| <i>Procladius</i> | 09021011015 | 0.33 | 0.34 | 9 | PR | 0.3 | 0.3 |
| <i>Thienemannimyia</i> | 09021011020 | | 0.68 | 3 | PR | | 0.7 |
| <i>Thienemannimyia group</i> | 09021011020041 | 0.67 | | | -- | 0.6 | |
| <i>Trissopelopia</i> | 09021011021 | 0.67 | 0.68 | | PR | 0.6 | 0.7 |
| <i>Zavrelimyia</i> | 09021011022 | 3.00 | 3.04 | 8 | PR | 2.9 | 3.0 |
| <i>Corynoneura</i> | 09021011036 | 0.33 | 0.34 | 7 | CG | 0.3 | 0.3 |
| <i>Cricotopus</i> | 09021011037 | | 1.35 | 7 | SH | | 1.3 |
| <i>Cricotopus bicinctus</i> | 09021011037057 | 1.33 | | | -- | 1.3 | |
| <i>Thienemanniella</i> | 09021011062 | 0.33 | 0.34 | 6 | CG | 0.3 | 0.3 |
| <i>Paratanytarsus</i> | 09021011071 | 2.00 | 2.03 | 6 | -- | 1.9 | 2.0 |
| <i>Rheotanytarsus</i> | 09021011072 | | 0.34 | 6 | CF | | 0.3 |
| <i>Rheotanytarsus exiguus group</i> | 09021011072127 | 0.33 | | | CF | 0.3 | |



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|---------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-------------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Tanytarsus</i> | 09021011076 | 5.67 | 5.74 | 6 | CF | 5.5 | 5.6 |
| <i>Dicrotendipes</i> | 09021011085 | 4.67 | 4.73 | 8 | CG | 4.5 | 4.6 |
| <i>Microtendipes</i> | 09021011094 | | 3.71 | 6 | CF | | 3.6 |
| <i>Microtendipes pedellus group</i> | 09021011094166 | 3.33 | | | -- | 3.2 | |
| <i>Microtendipes rydalensis group</i> | 09021011094168 | 0.33 | | | -- | 0.3 | |
| <i>Paratendipes</i> | 09021011100 | 1.33 | 1.35 | 8 | CG | 1.3 | 1.3 |
| <i>Polypedilum</i> | 09021011102 | | 1.01 | 6 | SH | | 1.0 |
| <i>Polypedilum flavum</i> | 09021011102182 | 0.33 | | | -- | 0.3 | |
| <i>Polypedilum scalaenum group</i> | 09021011102189 | 0.67 | | | -- | 0.6 | |
| <i>Psephenus</i> | 09021108058 | | 1.33 | 4 | SC | | 1.3 |
| <i>Psephenus herricki</i> | 09021108058028 | 1.33 | | | -- | 1.3 | |
| <i>Dubiraphia</i> | 09021113064 | 4.33 | 4.33 | 6 | -- | 4.2 | 4.2 |
| <i>Promoresia</i> | 09021113069 | | 0.33 | | -- | | 0.3 |
| <i>Promoresia tardella</i> | 09021113069052 | 0.33 | | | -- | 0.3 | |
| <i>Ferrissia</i> | 10010204035 | 1.67 | 1.67 | | SC | 1.6 | 1.6 |