



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

Station Information

Station Number: S-159
Waterbody: Tunk Stream - Station 159
Town: T10 Sd
Directions: TUNK LAKE OUTLET: 10 M BELOW RT. 182 CROSSING
DEP Drainage: St. Croix - Coastal
HUC8: 01050002
HUC8 Name: Maine Coastal
Latitude: 44 36 35.37 N
Longitude: 68 3 22.84 W
Stream Order: 1

Sample Information

Log Number: 2030 Type of Sample: ROCK BAG Date Deployed: 7/11/2011
Subsample Factor: X1 Replicates: 3 Date Retrieved: 8/10/2011

Classification Attainment

Statutory Class: B **Final Determination: B** Date: 1/25/2012
Model Result with P>.6: B **Reason for Determination: Model**
Date Last Calculated: 1/17/2012 Comments:

Model Probabilities

| First Stage Model | | C or Better Model | |
|---------------------------|------|--------------------------------|------|
| Class A | 0.58 | Class A, B, or C | 1.00 |
| Class B | 0.40 | Non-Attainment | 0.00 |
| B or Better Model | | A Model | |
| Class A or B | 0.99 | Class A | 0.35 |
| Class C or Non-Attainment | 0.01 | Class B or C or Non-Attainment | 0.65 |

Model Variables

| | | | |
|--|--------|---|-------|
| 01 Total Mean Abundance | 243.33 | 18 Relative Abundance Ephemeroptera | 0.05 |
| 02 Generic Richness | 30.00 | 19 EPT Generic Richness | 13.00 |
| 03 Plecoptera Mean Abundance | 7.67 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00 |
| 04 Ephemeroptera Mean Abundance | 12.67 | 23 Relative Generic Richness- Plecoptera | 0.07 |
| 05 Shannon-Wiener Generic Diversity | 2.58 | 25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 1.20 |
| 06 Hilsenhoff Biotic Index | 4.02 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i> | 17.75 |
| 07 Relative Abundance - Chironomidae | 0.03 | 28 EP Generic Richness/14 | 0.36 |
| 08 Relative Generic Richness Diptera | 0.27 | 30 Presence of Class A Indicator Taxa/7 | 0.00 |
| 09 <i>Hydropsyche</i> Abundance | 119.51 | | |
| 11 <i>Cheumatopsyche</i> Abundance | 1.20 | | |
| 12 EPT Generic Richness/ Diptera Generic Richness | 1.63 | | |
| 13 Relative Abundance - Oligochaeta | 0.00 | | |
| 15 Perlidae Mean Abundance (Family Functional Group) | 7.67 | | |
| 16 Tanypodinae Mean Abundance (Family Functional Group) | 0.35 | | |
| 17 Chironomini Abundance (Family Functional Group) | 0.00 | | |

| Five Most Dominant Taxa | | |
|-------------------------|----------------------|---------|
| Rank | Taxon Name | Percent |
| 1 | <i>Hydropsyche</i> | 49.11 |
| 2 | <i>Macrostemum</i> | 20.53 |
| 3 | <i>Neureclipsis</i> | 8.08 |
| 4 | <i>Maccaffertium</i> | 4.93 |
| 5 | <i>Stenelmis</i> | 3.84 |



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Date Retrieved: 8/10/2011

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 24.8 deg C
Dissolved Oxygen: 8.6 mg/l
Specific Conductance: 11 uS/cm
Velocity: 17 cm/s
pH: 5.3
Wetted Width: 4.3 m
Bankfull Width: 4.5 m
Depth: 55 cm

Waterbody Information - Retrieval

Temperature: 21.8 deg C
Dissolved Oxygen: 8 mg/l
Specific Conductance: 16 uS/cm
Velocity: 23 cm/s
pH: 6.21
Wetted Width: 4.3 m
Bankfull Width: 4.5 m
Depth: 56 cm

Water Chemistry

Summary of Habitat Characteristics

| | | |
|---------------------------|---------------------|--------------------|
| <u>Landuse Name</u> | <u>Canopy Cover</u> | <u>Terrain</u> |
| Upland Hardwood | Dense | Rolling |
| <u>Potential Stressor</u> | <u>Location</u> | <u>Substrate</u> |
| Lake Outlet | Below Road Crossing | Boulder 60 % |
| | Lake Outlet | Gravel 5 % |
| | | Rubble/Cobble 15 % |
| | | Sand 20 % |

Landcover Summary - 2004 Data

Sample Comments

CANOPY COVER: APPROXIMATELY 75% SHADED.



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Aquatic Life Taxonomic Inventory Report**

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Log Number: 2030

Subsample Factor: X1

Replicates: 3

Calculated: 1/17/2012

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance | |
|--------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Cura</i> | 03010102001 | 4.33 | 4.33 | | -- | 1.8 | 1.8 |
| Perlidae | 09020209 | 1.00 | | | -- | 0.4 | |
| <i>Acroneuria</i> | 09020209042 | 2.33 | 5.75 | 0 | PR | 1.0 | 2.4 |
| <i>Acroneuria abnormis</i> | 09020209042121 | 1.67 | | 0 | PR | 0.7 | |
| <i>Acroneuria lycorias</i> | 09020209042125 | 1.00 | | | -- | 0.4 | |
| <i>Perlesta</i> | 09020209046 | 1.67 | 1.92 | 5 | PR | 0.7 | 0.8 |
| Gomphidae | 09020302 | 0.67 | 0.67 | | -- | 0.3 | 0.3 |
| Calopterygidae | 09020307 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Argia</i> | 09020309048 | | 0.67 | 7 | PR | | 0.3 |
| <i>Argia moesta</i> | 09020309048096 | 0.67 | | | -- | 0.3 | |
| <i>Baetis</i> | 09020401001 | | 0.33 | 4 | CG | | 0.1 |
| <i>Baetis brunneicolor</i> | 09020401001003 | 0.33 | | | -- | 0.1 | |
| <i>Stenacron</i> | 09020402014 | | 0.33 | 7 | SC | | 0.1 |
| <i>Stenacron interpunctatum</i> | 09020402014045 | 0.33 | | | -- | 0.1 | |
| <i>Maccaffertium</i> | 09020402015 | 7.33 | 12.00 | 4 | SC | 3.0 | 4.9 |
| <i>Maccaffertium modestum</i> | 09020402015051 | 4.67 | | | -- | 1.9 | |
| <i>Chimarra</i> | 09020601003 | | 0.67 | 2 | CF | | 0.3 |
| <i>Chimarra socia</i> | 09020601003004 | 0.67 | | | -- | 0.3 | |
| <i>Neureclipsis</i> | 09020603008 | 19.67 | 19.67 | 7 | CF | 8.1 | 8.1 |
| Hydropsychidae | 09020604 | 28.33 | | | -- | 11.6 | |
| <i>Cheumatopsyche</i> | 09020604015 | 1.00 | 1.20 | 5 | CF | 0.4 | 0.5 |
| <i>Hydropsyche</i> | 09020604016 | 78.33 | 119.51 | 4 | CF | 32.2 | 49.1 |
| <i>Hydropsyche sparna</i> | 09020604016032 | 16.00 | | | -- | 6.6 | |
| <i>Hydropsyche depravata complex</i> | 09020604016041 | 5.33 | | | CF | 2.2 | |
| <i>Macrostemum</i> | 09020604018 | | 49.96 | 3 | CF | | 20.5 |
| <i>Macrostemum zebratum</i> | 09020604018054 | 41.67 | | | -- | 17.1 | |
| <i>Ceraclea</i> | 09020618072 | 1.33 | 1.33 | 3 | CG | 0.5 | 0.5 |
| <i>Mystacides</i> | 09020618075 | | 0.67 | 4 | CG | | 0.3 |
| <i>Mystacides sepulchralis</i> | 09020618075147 | 0.67 | | | -- | 0.3 | |
| <i>Oecetis</i> | 09020618078 | 0.67 | 1.00 | 8 | PR | 0.3 | 0.4 |
| <i>Oecetis persimilis</i> | 09020618078157 | 0.33 | | | -- | 0.1 | |
| Corydalidae | 09020701 | 1.00 | 1.00 | | -- | 0.4 | 0.4 |
| Chironomidae | 09021011 | 0.33 | | | -- | 0.1 | |
| <i>Rheopelopia</i> | 09021011017 | | 0.35 | | PR | | 0.1 |
| <i>Rheopelopia acra group</i> | 09021011017036 | 0.33 | | | -- | 0.1 | |
| <i>Nanocladius</i> | 09021011049 | 0.33 | 0.35 | 3 | CG | 0.1 | 0.1 |
| <i>Tvetenia</i> | 09021011065 | | 5.60 | 5 | CG | | 2.3 |
| <i>Tvetenia paucunca</i> | 09021011065114 | 5.33 | | | -- | 2.2 | |



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| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Rheotanytarsus</i> | 09021011072 | 0.33 | 0.35 | 6 | CF | 0.1 | 0.1 |
| <i>Helopelopia</i> | 09021011114 | 0.33 | 0.35 | 6 | PR | 0.1 | 0.1 |
| <i>Simulium</i> | 09021012047 | 1.33 | 2.67 | 4 | CF | 0.5 | 1.1 |
| <i>Simulium tuberosum</i> | 09021012047067 | 0.67 | | | -- | 0.3 | |
| <i>Simulium venustum/verecundum</i> <i>complex</i> | 09021012047072 | 0.67 | | | CF | 0.3 | |
| <i>Atherix</i> | 09021015055 | 0.67 | 0.67 | 2 | PR | 0.3 | 0.3 |
| <i>Hemerodromia</i> | 09021016057 | 1.00 | 1.00 | 3 | PR | 0.4 | 0.4 |
| <i>Dineutus</i> | 09021104032 | 0.67 | 0.67 | 2 | -- | 0.3 | 0.3 |
| <i>Gyrinus</i> | 09021104033 | 0.33 | 0.33 | 2 | PR | 0.1 | 0.1 |
| <i>Stenelmis</i> | 09021113070 | 3.67 | 9.33 | 5 | SC | 1.5 | 3.8 |
| <i>Stenelmis concinna</i> | 09021113070054 | 2.67 | | | -- | 1.1 | |
| <i>Stenelmis crenata</i> | 09021113070055 | 3.00 | | | -- | 1.2 | |
| <i>Pisidium</i> | 10020201002 | | 0.33 | | CF | | 0.1 |
| <i>Pisidium casertanum</i> | 10020201002006 | 0.33 | | | CF | 0.1 | |