



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

Station Information

| | |
|--|--------------------------|
| Station Number: S-451 | River Basin: Saco |
| Waterbody: Thacher Brook - Station 451 | HUC8 Name: Saco |
| Town: Biddeford | Latitude: 43 29 21.14 N |
| Directions: SOUTH ST TO VILLAGE LN TO GLAUDE AVE - WALK DOWN TRAIL TO STREAM - LEFT | Longitude: 70 28 55.19 W |
| | Stream Order: 3 |

Sample Information

| | | |
|-------------------------|--------------------------|---------------------------|
| Log Number: 2391 | Type of Sample: ROCK BAG | Date Deployed: 7/27/2015 |
| Subsample Factor: X1 | Replicates: 3 | Date Retrieved: 8/24/2015 |

Classification Attainment

| | | |
|-------------------------------------|--|----------------|
| Statutory Class: B | Final Determination: NA | Date: 9/7/2016 |
| Model Result with $P \geq 0.6$: NA | Reason for Determination: Model | |
| Date Last Calculated: 9/6/2016 | Comments: | |

Model Probabilities

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

Model Variables

| | | | |
|--|--------|---|-------|
| 01 Total Mean Abundance | 290.67 | 18 Relative Abundance Ephemeroptera | 0.00 |
| 02 Generic Richness | 43.00 | 19 EPT Generic Richness | 9.00 |
| 03 Plecoptera Mean Abundance | 0.00 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 1.37 |
| 04 Ephemeroptera Mean Abundance | 0.33 | 23 Relative Generic Richness- Plecoptera | 0.00 |
| 05 Shannon-Wiener Generic Diversity | 3.08 | 25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 10.49 |
| 06 Hilsenhoff Biotic Index | 5.88 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i> | 0.00 |
| 07 Relative Abundance - Chironomidae | 0.09 | 28 EP Generic Richness/14 | 0.07 |
| 08 Relative Generic Richness Diptera | 0.28 | 30 Presence of Class A Indicator Taxa/7 | 0.00 |
| 09 <i>Hydropsyche</i> Abundance | 2.29 | | |
| 11 <i>Cheumatopsyche</i> Abundance | 8.38 | | |
| 12 EPT Generic Richness/ Diptera Generic Richness | 0.75 | | |
| 13 Relative Abundance - Oligochaeta | 0.00 | | |
| 15 Perlidae Mean Abundance (Family Functional Group) | 0.00 | | |
| 16 Tanypodinae Mean Abundance (Family Functional Group) | 0.00 | | |
| 17 Chironomini Abundance (Family Functional Group) | 10.56 | | |

Five Most Dominant Taxa

| Rank | Taxon Name | Percent |
|------|--------------------|---------|
| 1 | <i>Dubiraphia</i> | 40.25 |
| 2 | <i>Caecidotea</i> | 18.58 |
| 3 | <i>Gammarus</i> | 14.56 |
| 4 | <i>Macronychus</i> | 2.98 |
| 5 | <i>Stenelmis</i> | 2.98 |



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

Station Number: S-451 Town: Biddeford Date Deployed: 7/27/2015
Log Number: 2391 Waterbody: Thacher Brook - Station 451 Date Retrieved: 8/24/2015

Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

Temperature: 20.2 deg C
Dissolved Oxygen: 8.51 mg/l
Dissolved Oxygen Saturation:
Specific Conductance:
Velocity:
pH:
Wetted Width: 2.4 m
Bankfull Width: 3.6 m
Depth: 14 cm

Waterbody Information - Retrieval

Temperature: 20.9 deg C
Dissolved Oxygen: 8.55 mg/l
Dissolved Oxygen Saturation:
Specific Conductance: 736 uS/cm
Velocity:
pH: 7.52
Wetted Width: 3.5 m
Bankfull Width: 4.3 m
Depth: 28 cm

Water Chemistry

Summary of Habitat Characteristics

| | | | |
|---------------------------|---------------------|------------------|------|
| <u>Landuse Name</u> | <u>Canopy Cover</u> | <u>Terrain</u> | |
| Swamp Hardwood | Partly Open | Rolling | |
| Upland Hardwood | | | |
| Urban | | | |
| <u>Potential Stressor</u> | <u>Location</u> | <u>Substrate</u> | |
| Nps Pollution | Below Urban NPS | Boulder | 15 % |
| Urban Runoff | | Detritus | 5 % |
| | | Gravel | 25 % |
| | | Rubble/Cobble | 45 % |
| | | Sand | 10 % |

Landcover Summary - 2004 Data

| | | | | | | | |
|-----------------|------|------------------|------|----------------|------|----------------------|------|
| Total Area (ac) | 4155 | High Int. Dev. % | 10.6 | Water % | 0.0 | Non-vegetated % | 0.1 |
| | | Med Int. Dev. % | 3.6 | Wetland % | 4.9 | Tilled Agriculture % | 0.9 |
| | | Low Int. Dev. % | 8.7 | Upland Woody % | 57.8 | Grassland % | 5.0 |
| | | Development % | 22.9 | Natural % | 63.1 | Human Altered % | 36.9 |
| | | | | | | Impervious % | 17.8 |

Sample Comments

7/27/2015: 93.8% DO.
8/24/2015: 96% DO.



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

Station Number: S-451
Log Number: 2391

Waterbody: Thacher Brook - Station 451
Subsample Factor: X1

Replicates: 3

Town: Biddeford
Calculated: 9/6/2016

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % | |
|--|----------------------|-----------------------------|----------|-------------------------|--------------------------|----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| Rhabditophora | 0301 | 0.67 | 0.67 | | -- | 0.2 | 0.2 |
| <i>Girardia</i> | 03010102002 | | 0.67 | | -- | | 0.2 |
| <i>Girardia tigrina</i> | 03010102002001 | 0.67 | | | -- | 0.2 | |
| <i>Prostoma</i> | 04010101001 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Helobdella</i> | 08030101005 | | 0.67 | | -- | | 0.2 |
| <i>Helobdella modesta</i> | 08030101005004 | 0.67 | | | -- | 0.2 | |
| <i>Caecidotea</i> | 09010101001 | 43.67 | 54.00 | 8 | SH | 15.0 | 18.6 |
| <i>Caecidotea racovitzai racovitzai</i> | 09010101001002 | 10.33 | | | -- | 3.6 | |
| <i>Gammarus</i> | 09010201003 | | 42.33 | 4 | -- | | 14.6 |
| <i>Gammarus fasciatus</i> | 09010201003003 | 42.33 | | | -- | 14.6 | |
| <i>Aeshna</i> | 09020301001 | | 0.67 | 5 | PR | | 0.2 |
| <i>Aeshna umbrosa</i> | 09020301001006 | 0.67 | | | -- | 0.2 | |
| <i>Boyeria</i> | 09020301004 | | 2.33 | 2 | PR | | 0.8 |
| <i>Boyeria vinosa</i> | 09020301004012 | 2.33 | | | -- | 0.8 | |
| Gomphidae | 09020302 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| Calopterygidae | 09020307 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Argia</i> | 09020309048 | 0.33 | 0.33 | 7 | PR | 0.1 | 0.1 |
| Leptophlebiidae | 09020406 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Chimarra</i> | 09020601003 | 0.33 | 0.33 | 2 | CF | 0.1 | 0.1 |
| <i>Lype</i> | 09020602004 | | 0.33 | 2 | SC | | 0.1 |
| <i>Lype diversa</i> | 09020602004005 | 0.33 | | | -- | 0.1 | |
| Polycentropodidae | 09020603 | 0.67 | 0.67 | | -- | 0.2 | 0.2 |
| Hydropsychidae | 09020604 | 1.33 | | | -- | 0.5 | |
| <i>Cheumatopsyche</i> | 09020604015 | 7.33 | 8.38 | 5 | CF | 2.5 | 2.9 |
| <i>Hydropsyche</i> | 09020604016 | 1.33 | 2.29 | 4 | CF | 0.5 | 0.8 |
| <i>Hydropsyche depravata species group</i> | 09020604016041 | 0.67 | | | CF | 0.2 | |
| <i>Ptilostomis</i> | 09020608041 | 0.33 | 0.33 | 5 | SH | 0.1 | 0.1 |
| Limnephilidae | 09020610 | | | | -- | | |
| <i>Pycnopsyche</i> | 09020610049 | 1.00 | 1.00 | 4 | SH | 0.3 | 0.3 |
| <i>Oecetis</i> | 09020618078 | 0.33 | 4.67 | 8 | PR | 0.1 | 1.6 |
| <i>Oecetis inconspicua complex</i> | 09020618078156 | 0.33 | | | -- | 0.1 | |
| <i>Oecetis persimilis</i> | 09020618078157 | 4.00 | | | -- | 1.4 | |
| <i>Nigronia</i> | 09020701003 | | 1.00 | 0 | PR | | 0.3 |
| <i>Nigronia serricornis</i> | 09020701003003 | 1.00 | | | -- | 0.3 | |
| Chironomidae | 09021011 | 1.33 | | | -- | 0.5 | |
| <i>Brillia</i> | 09021011033 | | 0.35 | 5 | SH | | 0.1 |
| <i>Brillia flavifrons</i> | 09021011033049 | 0.33 | | | -- | 0.1 | |



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

Station Number: S-451 Waterbody: Thacher Brook - Station 451 Town: Biddeford
Log Number: 2391 Subsample Factor: X1 Replicates: 3 Calculated: 9/6/2016

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % | |
|---------------------------------------|----------------------|--------------------------|----------|-------------------------|--------------------------|----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Cricotopus</i> | 09021011037 | | 0.70 | 7 | SH | | 0.2 |
| <i>Cricotopus bicinctus</i> | 09021011037057 | 0.67 | | | -- | 0.2 | |
| <i>Parametriocnemus</i> | 09021011053 | 1.33 | 1.41 | 5 | CG | 0.5 | 0.5 |
| <i>Paraphaenocladus</i> | 09021011054 | 0.33 | 0.35 | 4 | CG | 0.1 | 0.1 |
| <i>Thienemanniella</i> | 09021011062 | | 0.35 | 6 | CG | | 0.1 |
| <i>Thienemanniella xena</i> | 09021011062110 | 0.33 | | | -- | 0.1 | |
| <i>Micropsectra</i> | 09021011070 | 0.67 | 0.70 | 7 | CG | 0.2 | 0.2 |
| <i>Paratanytarsus</i> | 09021011071 | | 7.74 | 6 | -- | | 2.7 |
| <i>Paratanytarsus dissimilis</i> | 09021011071125 | 7.33 | | | -- | 2.5 | |
| <i>Rheotanytarsus</i> | 09021011072 | | 1.41 | 6 | CF | | 0.5 |
| <i>Rheotanytarsus exiguus group</i> | 09021011072127 | 0.33 | | | CF | 0.1 | |
| <i>Rheotanytarsus pellucidus</i> | 09021011072128 | 1.00 | | | CF | 0.3 | |
| <i>Stempellinella</i> | 09021011074 | | 0.35 | 2 | -- | | 0.1 |
| <i>Stempellinella leptocelloides</i> | 09021011074001 | 0.33 | | | -- | 0.1 | |
| <i>Tanytarsus</i> | 09021011076 | 1.00 | 1.41 | 6 | CF | 0.3 | 0.5 |
| <i>Tanytarsus buckleyi</i> | 09021011076139 | 0.33 | | | CF | 0.1 | |
| <i>Microtendipes</i> | 09021011094 | | 4.93 | 6 | CF | | 1.7 |
| <i>Microtendipes pedellus group</i> | 09021011094166 | 0.33 | | | -- | 0.1 | |
| <i>Microtendipes rydalensis group</i> | 09021011094168 | 4.33 | | | -- | 1.5 | |
| <i>Polypedilum</i> | 09021011102 | | 5.63 | 6 | SH | | 1.9 |
| <i>Polypedilum aviceps</i> | 09021011102181 | 2.33 | | | -- | 0.8 | |
| <i>Polypedilum flavum</i> | 09021011102182 | 2.67 | | | -- | 0.9 | |
| <i>Polypedilum illinoense</i> | 09021011102204 | 0.33 | | | -- | 0.1 | |
| <i>Anchytarsus</i> | 09021110060 | 0.33 | 0.33 | | -- | 0.1 | 0.1 |
| <i>Dubiraphia</i> | 09021113064 | 5.33 | 117.00 | 6 | -- | 1.8 | 40.3 |
| <i>Dubiraphia minima</i> | 09021113064036 | 21.00 | | | -- | 7.2 | |
| <i>Dubiraphia quadrinotata</i> | 09021113064037 | 90.67 | | | -- | 31.2 | |
| <i>Macronychus</i> | 09021113065 | | 8.67 | 4 | -- | | 3.0 |
| <i>Macronychus glabratus</i> | 09021113065040 | 8.67 | | | -- | 3.0 | |
| <i>Microcylloepus</i> | 09021113066 | 1.00 | 1.00 | 3 | -- | 0.3 | 0.3 |
| <i>Optioservus</i> | 09021113067 | 0.33 | 0.33 | 3 | SC | 0.1 | 0.1 |
| <i>Promoesia</i> | 09021113069 | | 1.00 | | -- | | 0.3 |
| <i>Promoesia tardella</i> | 09021113069052 | 1.00 | | | -- | 0.3 | |
| <i>Stenelmis</i> | 09021113070 | 1.67 | 8.67 | 5 | SC | 0.6 | 3.0 |
| <i>Stenelmis crenata</i> | 09021113070055 | 7.00 | | | -- | 2.4 | |
| <i>Campeloma</i> | 10010102004 | | 0.33 | | SC | | 0.1 |
| <i>Campeloma decisum</i> | 10010102004009 | 0.33 | | | -- | 0.1 | |
| Basommatophora | 100102 | 0.67 | 0.67 | | -- | 0.2 | 0.2 |



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

Station Number: S-451
Log Number: 2391

Waterbody: Thacher Brook - Station 451

Town: Biddeford

Subsample Factor: X1

Replicates: 3

Calculated: 9/6/2016

| Taxon | Maine Taxonomic Code | Count (Mean of Samplers) | | Hilsenhoff Biotic Index | Functional Feeding Group | Relative Abundance % | |
|--------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-------------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Physa</i> | 10010202027 | 3.00 | 3.00 | | SC | 1.0 | 1.0 |
| <i>Menetus</i> | 10010203031 | 0.67 | 1.67 | | -- | 0.2 | 0.6 |
| <i>Menetus dilatatus</i> | 10010203031059 | 1.00 | | | -- | 0.3 | |
| <i>Pisidium</i> | 10020201002 | 0.67 | 0.67 | | CF | 0.2 | 0.2 |