



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

Station Information

Station Number: S-62
Waterbody: Penobscot River - Station 62
Town: Orono
Directions: 1.2 KM ABOVE CONFLUENCE WITH STILLWATER R.
DEP Drainage: Penobscot
HUC8: 01020005
HUC8 Name: Lower Penobscot
Latitude: 44 53 7.18 N
Longitude: 68 39 26.73 W
Stream Order: 7

Sample Information

Log Number: 2023
Subsample Factor: X4
Type of Sample: ROCK BASKET
Replicates: 3
Date Deployed: 7/8/2011
Date Retrieved: 8/9/2011

Classification Attainment

Statutory Class: B
Model Result with P>.6: A
Date Last Calculated: 2/15/2012
Final Determination: A
Reason for Determination: Model
Date: 2/17/2012
Comments:

Model Probabilities

| First Stage Model | | C or Better Model | |
|---------------------------|------|--------------------------------|------|
| Class A | 0.51 | Class A, B, or C | 1.00 |
| Class B | 0.48 | Non-Attainment | 0.00 |
| Class C | | | |
| | 0.01 | | |
| NA | | | |
| | 0.00 | | |
| B or Better Model | | A Model | |
| Class A or B | 1.00 | Class A | 0.69 |
| Class C or Non-Attainment | 0.00 | Class B or C or Non-Attainment | 0.31 |

Model Variables

| | | | |
|--------------------------------------|--------|---|--------|
| 01 Total Mean Abundance | 902.67 | 18 Relative Abundance Ephemeroptera | 0.29 |
| 02 Generic Richness | 67.00 | 19 EPT Generic Richness | 25.00 |
| 03 Plecoptera Mean Abundance | 10.67 | 21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 9.79 |
| 04 Ephemeroptera Mean Abundance | 265.33 | 23 Relative Generic Richness- Plecoptera | 0.03 |
| 05 Shannon-Wiener Generic Diversity | 4.45 | 25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i> | 158.56 |
| 06 Hilsenhoff Biotic Index | 5.28 | 26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i> | 141.18 |
| 07 Relative Abundance - Chironomidae | 0.29 | 28 EP Generic Richness/14 | 0.79 |
| 08 Relative Generic Richness Diptera | 0.31 | 30 Presence of Class A Indicator Taxa/7 | 0.29 |
| 09 <i>Hydropsyche</i> Abundance | 2.71 | | |
| 11 <i>Cheumatopsyche</i> Abundance | 66.28 | | |
| 12 EPT Generic Richness/ Diptera | 1.19 | | |
| Generic Richness | | | |
| 13 Relative Abundance - Oligochaeta | 0.01 | | |
| 15 Perlidae Mean Abundance | 10.67 | | |
| (Family Functional Group) | | | |
| 16 Tanypodinae Mean Abundance | 40.55 | | |
| (Family Functional Group) | | | |
| 17 Chironomini Abundance (Family | 130.03 | | |
| Functional Group) | | | |

Five Most Dominant Taxa

| Rank | Taxon Name | Percent |
|------|----------------------|---------|
| 1 | <i>Maccaffertium</i> | 14.61 |
| 2 | <i>Microtendipes</i> | 12.24 |
| 3 | <i>Neureclipsis</i> | 9.93 |
| 4 | <i>Acerpenna</i> | 7.75 |
| 5 | <i>Tanytarsus</i> | 7.74 |



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| | | |
|-----------------------------|---|--------------------------|
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Sample Collection and Processing Information

Sampling Organization: BIOMONITORING UNIT

Taxonomist: MICHAEL WINNELL

Waterbody Information - Deployment

| | |
|-----------------------|------------|
| Temperature: | 25.3 deg C |
| Dissolved Oxygen: | 8.5 mg/l |
| Specific Conductance: | 50 uS/cm |
| Velocity: | 21 cm/s |
| pH: | 7.13 |
| Wetted Width: | 151 m |
| Bankfull Width: | 152 m |
| Depth: | 70 cm |

Waterbody Information - Retrieval

| | |
|-----------------------|------------|
| Temperature: | 24.6 deg C |
| Dissolved Oxygen: | 8.2 mg/l |
| Specific Conductance: | 53 uS/cm |
| Velocity: | 23 cm/s |
| pH: | |
| Wetted Width: | 151 m |
| Bankfull Width: | 152 m |
| Depth: | 50 cm |

Water Chemistry - 8/9/2011

| | | | |
|--------------------------|-----------|-----------------------------|------------|
| Ammonia As Nitrogen | 0.03 mg/l | Soluble Reactive Phosphorus | 10 ug/l |
| Nitrate+nitrite As N | 0.03 mg/l | Total Phosphorus | 0.028 mg/l |
| Total Kjeldahl Nitrogen | 0.4 mg/l | Total Suspended Solids | <2 mg/l |
| Dissolved Organic Carbon | 5.1 mg/l | Total Dissolved Solids | 50 mg/l |

Summary of Habitat Characteristics

| | | | |
|---------------------------|---------------------|------------------|------|
| <u>Landuse Name</u> | <u>Canopy Cover</u> | <u>Terrain</u> | |
| Upland Hardwood | Open | Rolling | |
| <u>Potential Stressor</u> | <u>Location</u> | <u>Substrate</u> | |
| BOD (Low DO) | Above Confluence | Boulder | 20 % |
| Inorganic Solids | Above Town | Gravel | 5 % |
| Nutrients | Below Point Source | Rubble/Cobble | 75 % |
| | Main Stem | | |

Landcover Summary - 2004 Data

Sample Comments

MULTI-METER WOULD NOT MEASURE PH AT RETRIEVAL. 8/9/11: FISH AND LONG STRANDS OF ALGAE OBSERVED.

7/8/11: ALGAE AND MANY SMALL FISH OBSERVED. LOCATION: ABOVE ORONO, BELOW POINT SOURCE OF OLD MILL, ABOVE CONFLUENCE WITH STILLWATER R.



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|-------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Chaetogaster</i> | 08020202002 | | 4.00 | | -- | | 0.4 |
| <i>Chaetogaster diastrophus</i> | 08020202002002 | 4.00 | | | -- | 0.4 | |
| <i>Stylaria</i> | 08020202014 | | 4.00 | | CG | | 0.4 |
| <i>Stylaria lacustris</i> | 08020202014002 | 4.00 | | | -- | 0.4 | |
| <i>Vejdovskyella</i> | 08020202015 | | 1.33 | | -- | | 0.1 |
| <i>Vejdovskyella comata</i> | 08020202015001 | 1.33 | | | -- | 0.1 | |
| <i>Hyaella</i> | 09010203006 | | 1.33 | 8 | CG | | 0.1 |
| <i>Hyaella azteca</i> | 09010203006011 | 1.33 | | | -- | 0.1 | |
| Entomobryidae | 09020103 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |
| Perlidae | 09020209 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |
| <i>Acroneuria</i> | 09020209042 | 5.33 | 9.33 | 0 | PR | 0.6 | 1.0 |
| <i>Acroneuria lycorias</i> | 09020209042125 | 4.00 | | | -- | 0.4 | |
| <i>Boyeria</i> | 09020301004 | | 1.33 | 2 | PR | | 0.1 |
| <i>Boyeria vinosa</i> | 09020301004012 | 1.33 | | | -- | 0.1 | |
| Corduliidae | 09020305 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |
| Coenagrionidae | 09020309 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |
| <i>Argia</i> | 09020309048 | 1.33 | 2.67 | 7 | PR | 0.1 | 0.3 |
| <i>Argia moesta</i> | 09020309048096 | 1.33 | | | -- | 0.1 | |
| Baetidae | 09020401 | 4.00 | | | -- | 0.4 | |
| <i>Baetis</i> | 09020401001 | 2.67 | 8.39 | 4 | CG | 0.3 | 0.9 |
| <i>Baetis flavistriga</i> | 09020401001004 | 1.33 | | | -- | 0.1 | |
| <i>Baetis intercalaris</i> | 09020401001008 | 4.00 | | | -- | 0.4 | |
| <i>Acerpenna</i> | 09020401007 | 25.33 | 69.95 | 5 | CG | 2.8 | 7.7 |
| <i>Acerpenna pygmaea</i> | 09020401007011 | 41.33 | | | -- | 4.6 | |
| <i>Procloeon</i> | 09020401010 | 6.67 | 6.99 | | CG | 0.7 | 0.8 |
| Heptageniidae | 09020402 | 62.67 | | | -- | 6.9 | |
| <i>Leucrocota</i> | 09020402011 | 13.33 | 21.27 | 1 | SC | 1.5 | 2.4 |
| <i>Stenacron</i> | 09020402014 | 9.33 | 14.89 | 7 | SC | 1.0 | 1.6 |
| <i>Maccaffertium</i> | 09020402015 | 66.67 | 131.85 | 4 | SC | 7.4 | 14.6 |
| <i>Maccaffertium luteum</i> | 09020402015049 | 4.00 | | | -- | 0.4 | |
| <i>Maccaffertium mediopunctatum</i> | 09020402015050 | 1.33 | | | -- | 0.1 | |
| <i>Maccaffertium modestum</i> | 09020402015051 | 10.67 | | | -- | 1.2 | |
| <i>Isonychia</i> | 09020404018 | 4.00 | 4.00 | 2 | CF | 0.4 | 0.4 |
| Leptophlebiidae | 09020406 | 2.67 | 2.67 | | -- | 0.3 | 0.3 |
| <i>Tricorythodes</i> | 09020411038 | 5.33 | 5.33 | 4 | CG | 0.6 | 0.6 |
| <i>Chimarra</i> | 09020601003 | | 2.67 | 2 | CF | | 0.3 |
| <i>Chimarra obscura</i> | 09020601003003 | 1.33 | | | -- | 0.1 | |
| <i>Chimarra socia</i> | 09020601003004 | 1.33 | | | -- | 0.1 | |



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| | | Actual | Adjusted | | | Actual | Adjusted |
| Polycentropodidae | 09020603 | 9.33 | | | -- | 1.0 | |
| <i>Cernotina</i> | 09020603006 | 48.00 | 50.40 | | PR | 5.3 | 5.6 |
| <i>Neureclipsis</i> | 09020603008 | 85.33 | 89.60 | 7 | CF | 9.5 | 9.9 |
| <i>Nyctiophylax</i> | 09020603009 | | 1.40 | 5 | PR | | 0.2 |
| <i>Nyctiophylax moestus</i> | 09020603009013 | 1.33 | | | -- | 0.1 | |
| <i>Polycentropus</i> | 09020603010 | 52.00 | 54.60 | 6 | PR | 5.8 | 6.0 |
| Hydropsychidae | 09020604 | 1.33 | | | -- | 0.1 | |
| <i>Cheumatopsyche</i> | 09020604015 | 65.33 | 66.28 | 5 | CF | 7.2 | 7.3 |
| <i>Hydropsyche</i> | 09020604016 | 1.33 | 2.71 | 4 | CF | 0.1 | 0.3 |
| <i>Hydropsyche sparna</i> | 09020604016032 | 1.33 | | | -- | 0.1 | |
| <i>Macrostemum</i> | 09020604018 | | 24.35 | 3 | CF | | 2.7 |
| <i>Macrostemum zebratum</i> | 09020604018054 | 24.00 | | | -- | 2.7 | |
| <i>Hydroptila</i> | 09020607026 | 1.33 | 1.33 | 6 | P | 0.1 | 0.1 |
| <i>Neotrichia</i> | 09020607034 | 1.33 | 1.33 | 2 | SC | 0.1 | 0.1 |
| <i>Brachycentrus</i> | 09020609043 | | 1.33 | 0 | CF | | 0.1 |
| <i>Brachycentrus numerosus</i> | 09020609043098 | 1.33 | | | -- | 0.1 | |
| <i>Helicopsyche</i> | 09020616070 | | 1.33 | 3 | SC | | 0.1 |
| <i>Helicopsyche borealis</i> | 09020616070137 | 1.33 | | | -- | 0.1 | |
| <i>Ceraclea</i> | 09020618072 | 1.33 | 1.33 | 3 | CG | 0.1 | 0.1 |
| <i>Oecetis</i> | 09020618078 | | 5.33 | 8 | PR | | 0.6 |
| <i>Oecetis persimilis</i> | 09020618078157 | 5.33 | | | -- | 0.6 | |
| <i>Nigronia</i> | 09020701003 | | 1.33 | 0 | PR | | 0.1 |
| <i>Nigronia serricornis</i> | 09020701003003 | 1.33 | | | -- | 0.1 | |
| Chironomidae | 09021011 | 12.00 | | | -- | 1.3 | |
| <i>Ablabesmyia</i> | 09021011001 | | 19.57 | 8 | PR | | 2.2 |
| <i>Ablabesmyia mallochii</i> | 09021011001004 | 16.00 | | | -- | 1.8 | |
| <i>Ablabesmyia monilis</i> | 09021011001009 | 2.67 | | | -- | 0.3 | |
| <i>Labrundinia</i> | 09021011008 | | 1.40 | 7 | PR | | 0.2 |
| <i>Labrundinia pilosella</i> | 09021011008022 | 1.33 | | | -- | 0.1 | |
| <i>Nilotanyus</i> | 09021011012 | | 9.79 | 6 | PR | | 1.1 |
| <i>Nilotanyus fimbriatus</i> | 09021011012027 | 9.33 | | | -- | 1.0 | |
| <i>Paramerina</i> | 09021011013 | 1.33 | 1.40 | | -- | 0.1 | 0.2 |
| <i>Pentaneura</i> | 09021011014 | | 8.39 | 6 | PR | | 0.9 |
| <i>Pentaneura inconspicua</i> | 09021011014028 | 8.00 | | | -- | 0.9 | |
| <i>Cricotopus</i> | 09021011037 | | 2.80 | 7 | SH | | 0.3 |
| <i>Cricotopus bicinctus</i> | 09021011037057 | 2.67 | | | -- | 0.3 | |
| <i>Eukiefferiella</i> | 09021011041 | | 1.40 | 8 | CG | | 0.2 |
| <i>Eukiefferiella brehmi group</i> | 09021011041073 | 1.33 | | | -- | 0.1 | |



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| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Nanocladius</i> | 09021011049 | | 1.40 | 3 | CG | | 0.2 |
| <i>Nanocladius distinctus</i> | 09021011049087 | 1.33 | | | -- | 0.1 | |
| <i>Orthocladius</i> | 09021011050 | | 1.40 | 6 | CG | | 0.2 |
| <i>Orthocladius carlatus</i> | 09021011050093 | 1.33 | | | -- | 0.1 | |
| <i>Rheocricotopus</i> | 09021011057 | | 4.19 | 6 | CG | | 0.5 |
| <i>Rheocricotopus robacki</i> | 09021011057105 | 4.00 | | | -- | 0.4 | |
| <i>Tvetenia</i> | 09021011065 | | 1.40 | 5 | CG | | 0.2 |
| <i>Tvetenia vitracies</i> | 09021011065113 | 1.33 | | | -- | 0.1 | |
| <i>Rheotanytarsus</i> | 09021011072 | 1.33 | 1.40 | 6 | CF | 0.1 | 0.2 |
| <i>Stempellinella</i> | 09021011074 | | 2.80 | 2 | -- | | 0.3 |
| <i>Stempellinella fimbriata</i> | 09021011074002 | 2.67 | | | -- | 0.3 | |
| <i>Tanytarsus</i> | 09021011076 | 66.67 | 69.91 | 6 | CF | 7.4 | 7.7 |
| <i>Dicrotendipes</i> | 09021011085 | | 8.39 | 8 | CG | | 0.9 |
| <i>Dicrotendipes neomodestus</i> | 09021011085152 | 8.00 | | | -- | 0.9 | |
| <i>Microtendipes</i> | 09021011094 | | 110.46 | 6 | CF | | 12.2 |
| <i>Microtendipes pedellus group</i> | 09021011094166 | 104.00 | | | -- | 11.5 | |
| <i>Microtendipes rydalsensis group</i> | 09021011094168 | 1.33 | | | -- | 0.1 | |
| <i>Parachironomus</i> | 09021011097 | | 1.40 | 10 | PR | | 0.2 |
| <i>Parachironomus tenuicaudatus</i> <i>complex</i> | 09021011097179 | 1.33 | | | -- | 0.1 | |
| <i>Phaenopsectra</i> | 09021011101 | | 4.19 | 7 | SC | | 0.5 |
| <i>Phaenopsectra obediens</i> | 09021011101182 | 4.00 | | | SC | 0.4 | |
| <i>Polypedilum</i> | 09021011102 | | 5.59 | 6 | SH | | 0.6 |
| <i>Polypedilum flavum</i> | 09021011102182 | 2.67 | | | -- | 0.3 | |
| <i>Polypedilum illinoense group</i> | 09021011102185 | 2.67 | | | -- | 0.3 | |
| <i>Hayesomyia</i> | 09021011112 | | 1.40 | | -- | | 0.2 |
| <i>Hayesomyia senata</i> | 09021011112001 | 1.33 | | | -- | 0.1 | |
| <i>Simulium</i> | 09021012047 | 1.33 | 1.33 | 4 | CF | 0.1 | 0.1 |
| <i>Psephenus</i> | 09021108058 | | 2.67 | 4 | SC | | 0.3 |
| <i>Psephenus herricki</i> | 09021108058028 | 2.67 | | | -- | 0.3 | |
| <i>Promoresia</i> | 09021113069 | | 1.33 | | -- | | 0.1 |
| <i>Promoresia elegans</i> | 09021113069051 | 1.33 | | | -- | 0.1 | |
| <i>Stenelmis</i> | 09021113070 | | 1.33 | 5 | SC | | 0.1 |
| <i>Stenelmis concinna</i> | 09021113070054 | 1.33 | | | -- | 0.1 | |
| Hydrobiidae | 10010104 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |
| <i>Amnicola</i> | 10010104013 | | 1.33 | | SC | | 0.1 |
| <i>Amnicola limosa</i> | 10010104013018 | 1.33 | | | -- | 0.1 | |
| Basommatophora | 100102 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |



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| | | Actual | Adjusted | | | Actual | Adjusted |
| <i>Stagnicola</i> | 10010201025 | | 12.00 | | -- | | 1.3 |
| <i>Stagnicola oronoensis</i> | 10010201025044 | 12.00 | | | SC | 1.3 | |
| <i>Physa</i> | 10010202026 | | 9.33 | | SC | | 1.0 |
| <i>Physa gyrina</i> | 10010202026046 | 9.33 | | | -- | 1.0 | |
| Planorbidae | 10010203 | 1.33 | 1.33 | | -- | 0.1 | 0.1 |
| <i>Helisoma</i> | 10010203030 | | 1.33 | | SC | | 0.1 |
| <i>Helisoma anceps</i> | 10010203030058 | 1.33 | | | -- | 0.1 | |
| Sphaeriidae | 10020201 | 6.67 | 6.67 | | CF | 0.7 | 0.7 |
| <i>Musculium</i> | 10020201001 | | 2.67 | | CF | | 0.3 |
| <i>Musculium securis</i> | 10020201001003 | 2.67 | | | CF | 0.3 | |