

## ADOPT-A-STREAM DATA SHEET

# Tier 2 Benthic Macroinvertebrate Major Group Biotic Index Worksheet

School/Group \_\_\_\_\_ River/Stream \_\_\_\_\_  
 Site \_\_\_\_\_ Replicate \_\_\_\_\_ Sampling Date \_\_\_\_\_  
 GPS Location \_\_\_\_\_

Major group	A	B	C
Yellow: Pollution Intolerant	# of Organisms in Sub-sample	Assigned Biotic Index	Biotic Value for Group
Green: Somewhat Tolerant			
Red: Pollution Tolerant			
Stoneflies		1	
Mayflies		2	
All Caddisflies except net spinner		2	
Gilled Snails		3	
Dobsonflies, Fishflies, Alderflies		4	
Dragonflies		4	
Crane Flies		4	
Watersnipe Flies		4	
Water Penny Beetle Larvae		4	
Whirligig Beetles		4	
Other Beetles		5	
Net Spinner Caddisflies		5	
Black Flies		5	
Midges		6	
Damselflies		6	
Water Mites		6	
Crayfish		6	
Clams		6	
Scuds		7	
Other Snails (not gilled)		7	
Leeches		7	
Sowbugs		8	
Aquatic Worms		9	
TOTALS	D		E

**Instructions:** (Try to pick at least 100 organisms.) Using the Worksheet, count the number of organisms for each major group identified in your sub-sample and record in column A. Sum the total of column A and record in D. Multiply the number of organisms in each major group by the assigned biotic index value (column B) and record in column C. Sum the total of column C and record in E. For the Biotic Index Score, divide E by D. Where does your result fall in the chart below? That is your Biotic Index result.

**Biotic Index Score** = 
$$\frac{E \text{ (total biotic value)}}{D \text{ (total \# organisms in your sub-sample)}} = \boxed{\phantom{000}}$$

<b>Biotic Index:</b>
0-4.50 non-impacted
4.51-5.50 slightly impacted
5.51-7.00 moderately impacted
7.01-10 severely impacted

## ADOPT-A-STREAM DATA SHEET

### Benthic Macroinvertebrate

### Major Group Percent Composition & Model Affinity Worksheet

School/Group \_\_\_\_\_ River/Stream \_\_\_\_\_  
 Site \_\_\_\_\_ Replicate \_\_\_\_\_ Sampling Date \_\_\_\_\_  
 GPS Location \_\_\_\_\_

$$\text{Percent Composition} = \frac{\text{\# individuals of major group}}{\text{total \# individuals in sub-sample}} \times 100$$

Major Group	# Individuals of major group	Total # of all organisms in sub-sample	Percent Composition	NYSDEC Model Community	Absolute Difference
Mayfly		÷	x 100 =	40%	
Stonefly		÷	x 100 =	5%	
Caddisfly		÷	x 100 =	10%	
Midge		÷	x 100 =	20%	
Beetle		÷	x 100 =	10%	
Worms		÷	x 100 =	5%	
Others		÷	x 100 =	10%	
<b>TOTAL</b>				<b>SUM=</b>	

$$100 - (\text{sum of absolute differences} \times 0.5) = \text{Percent Model Affinity}$$

#### Steps:

1. Try to pick at least 100 organisms. This is your sub-sample.
2. Fill in the number of individuals you have identified in each major group from your subsample using the Worksheet.
3. Sum the total number of organisms in your sub-sample.
4. For each major group, divide the number of individuals for that group by the total number in your sub-sample. Multiply by 100 to calculate percent composition.
5. Calculate the absolute difference (subtract the lower percent from the higher percent) between the NYSDEC model community and the sample Percent Composition. Note this model is based on a *summertime* BMI community.
6. Sum these absolute differences.
7. Multiply the sum by 0.5 and subtract this number from 100 to find the Percent Model Affinity. Note that impact level is only relevant to *summer* sampling.
8. For a visual comparison, graph the percent composition in the “Graphing Percent Composition Worksheet.”

Level of Impact:
> 64 non-impacted
50-64 slightly impacted
35-49 moderately impacted
<35 severely impacted

**ADOPT-A-STREAM DATA SHEET**

# Graphing Percent Composition Worksheet

Attach this graph to the appropriate Percent Composition Worksheet

**NY “model community”**

**Your Sample:**  
(color in appropriate %'s)

