



Chesapeake Monitoring Cooperative

### Biological Monitoring Data Form for Rocky Bottom Method

Name of Stream: \_\_\_\_\_ Station ID: \_\_\_\_\_

Name of Certified Monitor(s): \_\_\_\_\_

Group/Organization: \_\_\_\_\_ Number of Participants: \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

County/State: \_\_\_\_\_

Survey Date: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

Description of Site Location: \_\_\_\_\_

#### ROCKY BOTTOM SAMPLING

Using a kick-siene net, take up to four samples in the riffle area of 20 to 90 seconds each (75% of the time rubbing rocks, 25% of the time disturbing the streambed). Adjust the length of the sampling period to ensure you collect at least 200 macroinvertebrates. Write the length of each sampling period in seconds and place a check mark next to the net mesh size used (Note: If sample does not reach 200 organisms, three nets must be 90 seconds for approval).

\_\_\_\_\_ Net 1 \_\_\_\_\_ Net 2 \_\_\_\_\_ Net 3 \_\_\_\_\_ Net 4 Net Mesh Size:  1/32"  1/50"

#### PHYSICAL CONDITIONS (check predominate condition for each day)

Today:  Sunny  Overcast  Intermittent Rain  Steady Rain  Heavy Rain  Snow

Yesterday:  Sunny  Overcast  Intermittent Rain  Steady Rain  Heavy Rain  Snow

Day Before Yesterday:  Sunny  Overcast  Intermittent Rain  Steady Rain  Heavy Rain  Snow

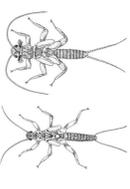
Water Temperature: \_\_\_\_\_ C° Avg. Stream Width \_\_\_\_\_ ft.

Flow Rate: \_\_\_\_\_ (high, normal, low) Avg. Stream Depth \_\_\_\_\_ in.

#### SAMPLING NOTES

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# MACROINVERTEBRATE COUNT

Macroinvertebrate	Tally	Count	Macroinvertebrate	Tally	Count
Worms 			Common Netspinning Caddisflies 		
Flat Worms 			Most Caddisflies (not Common Netspinning) 		
Leeches 			Beetles 		
Crayfish 			Midges 		
Sowbugs 			Black Flies 		
Scuds 			True Flies 		
Stoneflies 			Gilled Snails 		
Mayflies 			Lunged Snails 		
Dragonflies and Damselflies 			Clams 		
Alderflies, Fishflies, and Hellgrammites 			Other benthic macroinvertebrates		
			<b>Total number of organisms in the sample (include "other" category)</b>		

## INDIVIDUAL METRICS

	Organism Groups	Number of Organisms		Total Number of Organisms in the Sample		Percent <i>(This is your value for this metric.)</i>
<b>Metric 1</b>	Mayflies + Stoneflies + Most Caddisflies <i>(not Common Netspinning)</i>		÷		Multiply by 100	%
<b>Metric 2</b>	Common Netspinning Caddisflies		÷		Multiply by 100	%
<b>Metric 3</b>	Lunged Snails		÷		Multiply by 100	%
<b>Metric 4</b>	Beetles		÷		Multiply by 100	%

### Metric 5: Tolerant

Organism Groups	Number of Organisms
Black Flies	
Clams	
Dragonflies and Damselflies	
Flatworms	
Leeches	
Lunged Snails	
Midges	
Scuds	
Sowbugs	
Worms	
<b>Total Tolerant</b>	
÷	
<b>Total number of organisms in sample</b>	
Multiply by 100	
<b>Percent</b> <i>(This is your value for Metric 5.)</i>	%

### Metric 6: Non-Insect

Organism Groups	Number of Organisms
Clams	
Crayfish	
Flatworms	
Gilled Snails	
Leeches	
Lunged Snails	
Scuds	
Sowbugs	
Worms	
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<b>Total Non-Insect</b>	
÷	
<b>Total number of organisms in sample</b>	
Multiply by 100	
<b>Percent</b> <i>(This is your value for Metric 6.)</i>	%

### MULTIMETRIC INDEX (STREAM HEALTH SCORE)

	<b>Metric Organism</b>	<b>Your Metric Value</b>	<b>2</b>	<b>1</b>	<b>0</b>
<b>Metric 1</b>	Mayflies + Stoneflies + Most Caddisflies (not Common Netspinning)		Greater than 32.2 <input type="checkbox"/>	16.1 - 32.2 <input type="checkbox"/>	Less than 16.1 <input type="checkbox"/>
<b>Metric 2</b>	Common Netspinning Caddisflies		Less than 19.7 <input type="checkbox"/>	19.7 - 34.5 <input type="checkbox"/>	Greater than 34.5 <input type="checkbox"/>
<b>Metric 3</b>	Lunged Snails		Less than 0.3 <input type="checkbox"/>	0.3 - 1.5 <input type="checkbox"/>	Greater than 1.5 <input type="checkbox"/>
<b>Metric 4</b>	Beetles		Greater than 6.4 <input type="checkbox"/>	3.2 - 6.4 <input type="checkbox"/>	Less than 3.2 <input type="checkbox"/>
<b>Metric 5</b>	Tolerant		Less than 46.7 <input type="checkbox"/>	46.7 - 61.5 <input type="checkbox"/>	Greater than 61.5 <input type="checkbox"/>
<b>Metric 6</b>	Non-Insects		Less than 5.4 <input type="checkbox"/>	5.4 - 20.8 <input type="checkbox"/>	Greater than 20.8 <input type="checkbox"/>
			<b>Total # of 2s:</b>	<b>Total # of 1s:</b>	<b>Total # of 0s:</b>
			<b>Multiply by 2:</b>	<b>Multiply by 1:</b>	<b>Multiply by 0:</b>
		<b>SUBTOTALS</b>			

Add the three subtotals to get the Save Our Streams Multimetric Index Score: \_\_\_\_\_

**Acceptable Ecological Condition (9 - 12)**

**Ecological conditions cannot be determined at this time/Grayzone (8)**

**Unacceptable Ecological Condition (0 - 7)**

**STREAM CONDITIONS** (check all that apply)

<p><b>Fish water quality indicators:</b></p> <input type="checkbox"/> scattered individuals <input type="checkbox"/> scattered schools <input type="checkbox"/> trout (pollution sensitive) <input type="checkbox"/> bass (somewhat sensitive) <input type="checkbox"/> catfish (pollution tolerant) <input type="checkbox"/> carp (pollution tolerant)	<p><b>Barriers to fish movement:</b></p> <input type="checkbox"/> beaver dams <input type="checkbox"/> man-made dams <input type="checkbox"/> waterfalls (> 1 ft.) <input type="checkbox"/> none <input type="checkbox"/> other _____	<p><b>Surface water appearance:</b></p> <input type="checkbox"/> clear <input type="checkbox"/> clear, but tea colored <input type="checkbox"/> colored sheen (oily) <input type="checkbox"/> foamy <input type="checkbox"/> milky <input type="checkbox"/> muddy <input type="checkbox"/> black <input type="checkbox"/> grey <input type="checkbox"/> other _____	<p><b>Streambed deposit (bottom):</b></p> <input type="checkbox"/> grey <input type="checkbox"/> orange/red <input type="checkbox"/> yellow <input type="checkbox"/> black <input type="checkbox"/> brown <input type="checkbox"/> silt <input type="checkbox"/> sand <input type="checkbox"/> other _____
<p><b>Odor:</b></p> <input type="checkbox"/> musky <input type="checkbox"/> oil <input type="checkbox"/> sewage <input type="checkbox"/> other _____ <input type="checkbox"/> none	<p><b>Stability of streambed</b> (bed sinks beneath your feet in):</p> <input type="checkbox"/> no spots <input type="checkbox"/> a few spots <input type="checkbox"/> many spots	<p><b>Algae color:</b></p> <input type="checkbox"/> light green <input type="checkbox"/> dark green <input type="checkbox"/> brown coated <input type="checkbox"/> matted on stream bed <input type="checkbox"/> hairy	<p><b>Algae located:</b></p> <input type="checkbox"/> everywhere <input type="checkbox"/> in spots <input type="checkbox"/> % covered _____
<p><b>Stream channel shade:</b></p> <input type="checkbox"/> full (more than 75%) <input type="checkbox"/> high (50% - 74%) <input type="checkbox"/> moderate (25% - 49%) <input type="checkbox"/> slight (1% - 24%) <input type="checkbox"/> none	<p><b>Streambank composition (=100%):</b></p> <p>_____ % trees</p> <p>_____ % shrubs</p> <p>_____ % grass</p> <p>_____ % bare soil</p> <p>_____ % rocks</p> <p>_____ % other</p>	<p><b>Streambank erosion:</b></p> <input type="checkbox"/> severe (more than 75%) <input type="checkbox"/> high (50% - 74%) <input type="checkbox"/> moderate (25% - 49%) <input type="checkbox"/> slight (1% - 24%) <input type="checkbox"/> none	<p><b>Riffle composition (=100%):</b></p> <p>_____ % silt (mud)</p> <p>_____ % sand (1/16" - 1/4" grains)</p> <p>_____ % gravel (1/4" - 2" stones)</p> <p>_____ % cobbles (2" - 10" stones)</p> <p>_____ % boulders (&gt; 10" stones)</p>

**LAND USES IN THE WATERSHED (UPSTREAM AND SURROUNDING SAMPLING SITE)**

Indicate whether the following land uses within a one-mile radius of your sampling site have a high (H), moderate (M), slight (S), or no (N) potential impact to the quality of your stream. Leave blank if not present.

_____ Oil & gas drilling	_____ Urban uses (parking lots, highways, etc.)	_____ Agriculture (type: _____)
_____ Housing developments	_____ Sanitary landfill	_____ Trash dump
_____ Forestry	_____ Active construction	_____ Fields
_____ Logging	_____ Mining (type: _____)	_____ Livestock pasture
		_____ Other _____

**LAND USE NOTES:** Describe the amount and type of litter in and around the stream and indicate the current and potential future threats to the stream's health.

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Submit data online at [www.cleanwaterhub.org](http://www.cleanwaterhub.org). If you have any questions about this protocol, please contact the VA SOS Coordinator at [vasos@iwla.org](mailto:vasos@iwla.org). Data sheets must be stored for five years after sampling. If you are unable to keep your datasheets, please contact the VA SOS Coordinator.