



IZAAK WALTON LEAGUE OF AMERICA



## Biological Monitoring Data Form for Rocky Bottom Method

Name of Stream: \_\_\_\_\_ Site ID: \_\_\_\_\_

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

Group or Organization Name: \_\_\_\_\_ Number of Participants: \_\_\_\_\_

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

County/State: \_\_\_\_\_ Survey Date: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

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

### ROCKY BOTTOM SAMPLING

Using a kick-siense 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.

Net 1 \_\_\_\_\_ sec Net 2 \_\_\_\_\_ sec Net 3 \_\_\_\_\_ sec Net 4 \_\_\_\_\_ sec Net mesh size: ☐ 1/16" ☐ 1/32" ☐ 1/50"

### PHYSICAL CONDITIONS (check all that apply)

Today: ☐ Sunny ☐ Overcast ☐ Intermittent Rain ☐ Steady Rain ☐ Heavy Rain ☐ Snow

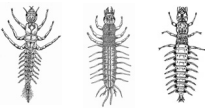






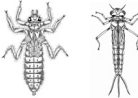


Yesterday: ☐ Sunny ☐ Overcast ☐ Intermittent Rain ☐ Steady Rain ☐ Heavy Rain ☐ Snow


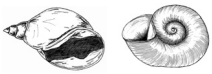
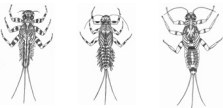


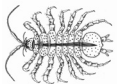
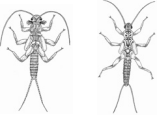


Day Before Yesterday: ☐ Sunny ☐ Overcast ☐ Intermittent Rain ☐ Steady Rain ☐ Heavy Rain ☐ Snow

Water Temperature \_\_\_\_\_ F° or C° Avg. Stream Width \_\_\_\_\_ ft. Avg. Stream Depth \_\_\_\_\_ in. Flow Rate \_\_\_\_\_  
(circle F° or C°) (high, normal, low, negligible)

### OTHER COMMENTS

## MACROINVERTEBRATE COUNT

Macroinvertebrate	Tally	Count
Alderflies, Fishflies, and Hellgrammites 		
Beetles 		
Black Flies 		
Caddisflies (not Common Netspinning) 		
Clams 		
Common Netspinning Caddisflies 		
Crayfish 		
Dragonflies and Damselflies 		
Flat Worms 		
Gilled Snails 		

Macroinvertebrate	Tally	Count
Leeches 		
Lunged Snails 		
Mayflies 		
Midges 		
Scuds 		
Sowbugs 		
Stoneflies 		
True Flies 		
Worms 		
Other benthic macroinvertebrates		
Total number of organisms in the sample (include "other" category)		

## INDIVIDUAL METRICS

	Organism Groups	Number of Organisms		Total Number of Organisms in the Sample		Percent (This is your value for this metric.)
<b>Metric 1</b>	Mayflies + Stoneflies + Most Caddisflies (not Common Netspinning)		÷		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	_____
<hr/>	
<b>Total Tolerant</b>	_____
	÷
Total number of organisms in sample	_____
	Multiply by 100
<b>Percent</b> (This is your value for Metric 5.)	_____ %

### Metric 6: Non-Insect

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

## MULTIMETRIC INDEX (STREAM HEALTH SCORE)

Metric Number	Metric Organism	Your Metric Value	2	1	0
1	Mayflies + Stoneflies + Most Caddisflies		Greater than 32.2 _____	16.1 – 32.2 _____	Less than 16.1 _____
2	Caddisflies: Common Netspinning		Less than 19.7 _____	19.7 – 34.5 _____	Greater than 34.5 _____
3	Snails: Lugged		Less than 0.3 _____	0.3 – 1.5 _____	Greater than 1.5 _____
4	Beetles		Greater than 6.4 _____	3.2 – 6.4 _____	Less than 3.2 _____
5	Tolerant		Less than 46.7 _____	46.7 – 61.5 _____	Greater than 61.5 _____
6	Non-Insects		Less than 5.4 _____	5.4 – 20.8 _____	Greater than 20.8 _____
			<b>Total # of 2s:</b> _____	<b>Total # of 1s:</b> _____	<b>Total # of 0s:</b> _____
		<b>SUBTOTALS</b>	<b>Multiply by 2:</b> _____	<b>Multiply by 1:</b> _____	<b>Multiply by 0:</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 (8)
- ☐ Unacceptable Ecological Condition (0 – 7)

## STREAM CONDITIONS

<b>Fish water quality indicators:</b> <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)	<b>Barriers to fish movement:</b> <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 _____	<b>Surface water appearance:</b> <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 _____	<b>Streambed deposit (bottom):</b> <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 _____
<b>Odor:</b> <input type="checkbox"/> musky <input type="checkbox"/> oil <input type="checkbox"/> sewage <input type="checkbox"/> other _____ <input type="checkbox"/> none	<b>Stability of streambed</b> (bed sinks beneath your feet in): <input type="checkbox"/> no spots <input type="checkbox"/> a few spots <input type="checkbox"/> many spots	<b>Algae appearance:</b> <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	<b>Algae located:</b> <input type="checkbox"/> everywhere <input type="checkbox"/> in spots _____ % bed covered
<b>Stream channel shade:</b> <input type="checkbox"/> More than 75% full <input type="checkbox"/> 50% - 74% high <input type="checkbox"/> 25% - 49% moderate <input type="checkbox"/> 1% - 24% slight <input type="checkbox"/> none	<b>Streambank composition (=100%):</b> _____ % trees _____ % shrubs _____ % grass _____ % bare soil _____ % rocks _____ % other	<b>Streambank erosion:</b> <input type="checkbox"/> More than 75% severe <input type="checkbox"/> 50% - 75% high <input type="checkbox"/> 25% - 49% moderate <input type="checkbox"/> 1% - 24% slight <input type="checkbox"/> none	<b>Riffle composition (=100%):</b> _____ % silt (mud) _____ % sand (1/16" - 1/4" grains) _____ % gravel (1/4" - 2" stones) _____ % cobbles (2" - 10" stones) _____ % boulders (> 10" stones)

## 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.

____ 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 _____

**COMMENTS:** 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.

Please send your data sheets to your regional coordinator or submit them online at [www.vasos.org](http://www.vasos.org). If you have any questions about this protocol, please contact the VA SOS Coordinator at [vasos@iwa.org](mailto:vasos@iwa.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.