SAVE OUR STREAMS IZAAK WALTON LEAGUE OF AMERICA

# **Biological Monitoring Data Form for Muddy Bottom Streams**

Name of Stream:			Site ID:	
Your Name:	Name	of Certified Monitor(s):		
Group or Organization Name:		Number of Par	ticipants:	
Latitude:	Longi	tude:		
County/State:	Survey Date:	Start Time:	End Time:	
Description of Site Location:				

#### **MUDDY BOTTOM SAMPLING**

**VIRGINIA** 

Record the number of jabs taken from each habitat type (20 jabs total). Total jabs taken from a particular habitat type should be proportionate to the overall percentage of the habitat type in the sample area.

Banks	Woody Snags		
Riffles (Cobble Areas)	Submerged Aquatic Vegetation		
PHYSICAL CONDITIONS (check all that apply)			
Today: 🗆 Sunny 🗆 Overcast 🗆 Intern	nittent Rain 🗆 Steady Rain 🗆 Heavy Rain	□ Snow	
Yesterday: 🗆 Sunny 🗆 Overcast 🗆 Intern	nittent Rain 🗆 Steady Rain 🗆 Heavy Rain	□ Snow	
Day Before Yesterday: □ Sunny □ Overcast □ Intern	nittent Rain 🗆 Steady Rain 🗆 Heavy Rain	□ Snow	
Water TemperatureF° or C° Avg. Stream Wid (circle F° or C°)	Ithft. Avg. Stream Depthin.	Flow Rate (high, normal, low, negligible)	

## MACROINVERTEBRATE COUNT

Macroinvertebrate	Tally	Count
Alderflies, Fishflies, and Hellgrammites		
Beetles		
Black Flies		
a millio		
Caddisflies (not Common Netspinning)		
Alline A		
Clams		
Common Netspinning Caddiflies		
Crayfish		
Dragonflies (not Gomphidae)		
Dragonflies: Gomphidae (clubtail)		
Flat Worms		
Gilled Snails		
Leeches		

Macroinvertebrate	Tally	Count
Lunged Snails		
<b>A</b>		
Mayflies		
Midges		
A DESCRIPTION OF		
Scuds		
Shrimp (freshwater)		
Sowbugs		
Stoneflies		
True Bugs		
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		<b>Percent</b> (This is your value for this metric.)
Metric 1	Mayflies + Stoneflies + Most Caddisflies ( <i>not</i> Common Netspinning)		÷		Multiply by 100	%
Metric 2	Gomphidae (clubtail) Dragonflies		÷		Multiply by 100	%

Metric 3: Tolerant		Metric 4: Non-Insect	
Organism Groups	Number of Organisms	Organism Groups	Number of Organisms
Black Flies		Clams	
Clams		Crayfish	
Dragonflies and Damselflies		Flatworms	
Flatworms		Gilled Snails	
		Leeches	
Leecnes		Lunged Snails	
Lunged Snails		Scuds	
Midges		Sowbugs	
Scuds		Worms	
Sowbugs			
Worms		Total Tolerant	
			÷
Total Tolerant		Total number of organisms	
	÷	in sample	
Total number of organisms in sample			Multiply by 100
	Multiply by 100	Percent	%
		(This is your value for Metric 4.)	
Percent	%		
(This is your value for Metric 3.)			

Metric Number	Metric Organism	Your Metric Value	6	3	0
1	Mayflies + Stoneflies + Most Caddisflies		Greater than 7.8	0.85 - 7.8	Less than 0.85
2	Gomphidae (clubtail) Dragonflies		Greater than 0.5	Greater than 0 - 0.5	0
3	Tolerant		Less than 63	63 - 85	Greater than 85
4	Non-Insects		Less than 27	27 - 70	Greater than 70
			Total # of 6s:	Total # of 3s:	Total # of Os:
		SUBTOTALS	Multiply by 6:	Multiply by 3:	Multiply by 0:

## **MULTIMETRIC INDEX (STREAM HEALTH SCORE)**

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

- $\Box$  Acceptable Ecological Condition (Greater than 14)
- $\Box$  Ecological conditions cannot be determined at this time (8 14)
- $\Box$  Unacceptable Ecological Condition (0 7)

#### **STREAM CONDITIONS**

<ul> <li>Fish water quality indicators:</li> <li>scattered individuals</li> <li>scattered schools</li> <li>trout (pollution sensitive)</li> <li>bass (somewhat sensitive)</li> <li>catfish (pollution tolerant)</li> <li>carp (pollution tolerant)</li> </ul>	Barriers to fish movement: beaver dams man-made dams waterfalls (> 1 ft.) none other	Surface water appearance: clear clear, but tea-colored colored sheen (oily) foamy milky muddy black grey other	Streambed deposit (bottom):          grey         orange/red         yellow         black         brown         silt         other
Odor: musky oil sewage other none	<ul> <li>Stability of streambed</li> <li>(bed sinks beneath your feet in):</li> <li>□ no spots</li> <li>□ a few spots</li> <li>□ many spots</li> </ul>	Algae appearance: ☐ light green ☐ dark green ☐ brown coated ☐ matted on stream bed ☐ hairy	Algae located: □ everywhere □ in spots % bed covered
Stream channel shade:           □ More than 75% full           □ 50% - 74% high           □ 25% - 49%           moderate           □ 1% - 24% slight           □ none	Streambank composition (=100%): % trees % shrubs % grass % bare soil % rocks % other	Streambank erosion: ☐ More than 75% severe ☐ 50% - 75% high ☐ 25% - 49% moderate ☐ 1% - 24% slight ☐ none	Riffle composition (=100%):          % silt (mud)          % sand (1/16" - ¼" grains)          % gravel (1/4" - 2" stones)          % cobbles (2" - 10" stones)          % boulders (> 10" stones)           (Not applicable to Muddy Bottom Sampling.)

#### 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*. If you have any questions about this protocol, please contact the VA SOS Coordinator at *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.