

Appendix L. Basic Macroinvertebrate Protocol for Watershed Groups

MACROINVERTEBRATE SURVEY

Page 64

Type of Sampling (check one)
 Rocky bottom _____ Muddy bottom _____

Page 68

Muddy Bottom Sampling Only: Record the number of jabs taken in each habitat type.

- Vegetated bank margin _____
- Snags and logs _____
- Aquatic vegetation beds _____
- Silt/sand/gravel substrate _____

MACROINVERTEBRATE COUNT

Page 70

1. Identify the macroinvertebrates in your sample and assign them letter codes based on their abundance: R (rare) = 1-9 organisms; C (common) = 10-99 organisms; and D (dominant) = 100 plus organisms.

Group I Sensitive	Group II Somewhat-Sensitive	Group III Tolerant
Water penny larvae _____	Beetle larvae _____	Aquatic worms _____
Helgrammites _____	Clams _____	Blackfly larvae _____
Mayfly nymphs _____	Crane fly larvae _____	Leeches _____
Gilled snails _____	Crayfish _____	Midge larvae _____
Riffle beetle adult _____	Damselfly nymphs _____	Snails _____
Stonewfly nymphs _____	Scuds _____	
Non net-spinning caddisfly larvae _____	Sowbugs _____	
	Fishfly larvae _____	
	Alderfly larvae _____	
	Net-spinning caddisfly larvae _____	

WATER QUALITY RATING

Page 70

2. To calculate the index value, add the number of letters found in the three Groups above and multiply by the indicated weighting factor.

Group I	Group II	Group III
(# of R's) x 5.0 _____	(# of R's) x 3.2 _____	(# of R's) x 1.2 _____
= _____	= _____	= _____
(# of C's) x 5.6 _____	(# of C's) x 3.4 _____	(# of C's) x 1.1 _____
= _____	= _____	= _____
(# of D's) x 5.3 _____	(# of D's) x 3.0 _____	(# of D's) x 1.0 _____
= _____	= _____	= _____

Sum of the Index value for Group I = _____ Sum of the Index value for Group II = _____ Sum of the Index value for Group III = _____

To calculate the water quality score for the stream site, add together the index values for each group. The sum of these values equals the water quality score.

Water quality score = _____

Compare this score to the following number ranges to determine the quality of your stream site.

- Good >40
- Fair 20 - 40
- Poor <20

NOTE: The tolerance groupings (Group I, II, and III) and the water quality rating categories were developed for streams in the Mid-Atlantic states. A trained biologist familiar with local stream fauna should help determine if these tolerance and water quality rating categories should be modified for your geographic region and program.