

Water is Life Pt. 2

Second Test - Determining the Health of an Aquatic Ecosystem - Macroinvertebrates Index

Materials

- Field journal & writing utensils
- 1 Blue water basin
- 1 net
- 1 laundry bag
- 1 camera
- 1 identification key

Procedure

1. Document site description, weather conditions, land use
2. Document qualitative characteristics of aquatic ecosystem – vegetation, size, approximate depth, location, ect.
3. Technique: use feet or paddle to “stir up” bottom of pond. Sweep water with net while stomping for 10 seconds in an “s” or “metis” shape. Dump contents into blue basin.
4. Separate out any plant materials- make note in your journal.
5. Use the key to identify and count the number of animal species in your basin. (make note in your journal) pick at least one to sketch.
6. Determine the macroinvertebrate index for your sample using the table below. Record this table on page 7-8 in your journal for each site. Multiply the number of species in group 1 organisms by 3, the number of species in group 2 by 2, the number of species of group 3 organisms by 1. Add all three numbers together to determine the macroinvertebrate index for the sample.

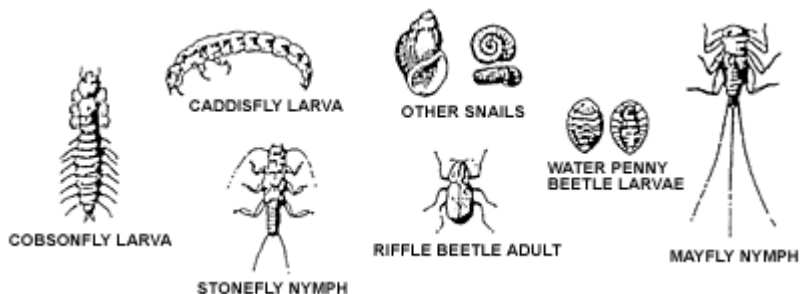
Data Table 2: Calculation of Water Quality Index					Site: _____
Sample	Group 1	Group 2	Group 3	Macroinvertebrate Index	Water Quality Rating
	Number of species x 3	Number of species x 2	Number of species x 1	Sum of groups (1 + 2 + 3)	
1					
2					
3					
Average Sum and Water Quality Rating:					

Water Quality Rating: >20 = excellent 16-20 = good 11-15 = fair <11 = poor

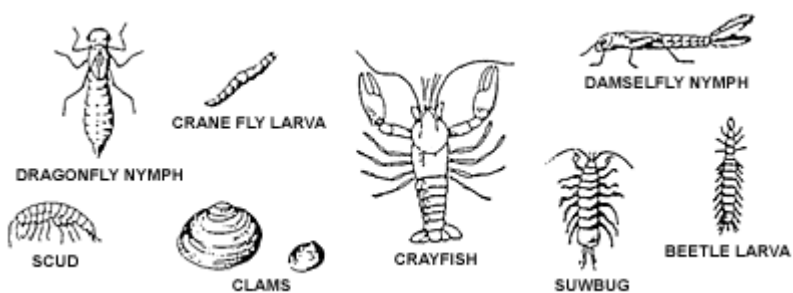
Macroinvertebrate Index - Biological Factors of a Healthy Aquatic Ecosystem

Macroinvertebrate Taxa Groups

GROUP 1 (These organisms are generally pollution-intolerant. Their dominance generally signifies GOOD WATER QUALITY.)



GROUP 2 (These organisms can exist in a wide range of water quality conditions.)



GROUP 3 (These organisms are generally tolerant of pollution. Their dominance usually signifies POOR WATER QUALITY.)

