# Study Guide – Aquatic Macroinvertebrate Test

*Field Ecology*

1. Why are aquatic macroinvertebrates so useful for evaluating water quality? Why might you use aquatic macroinvertebrates for this as opposed to, for example, chemically testing the water?

2. Using the method we learned in class, calculate the diversity of a stream where you collect: 12 mayflies, 9 stoneflies, 23 snails, 2 true flies, 9 dragonflies, 6 caddisflies, and 11 other organisms. (You can calculate by hand or use a spreadsheet). How would you characterize the diversity of this stream? (Hint – look at the descriptions on the table we used for the calculations.)

3. Describe how members of each of the following functional feeding groups get their food and characterize the nature of their interdependence in the aquatic ecosystem:
   a. Shredders
   b. Scrapers
   c. Collectors
   d. Predators

4. Make sure you can correctly describe the defining features of the following aquatic macroinvertebrate taxa: Ephemeroptera (Mayflies), Diptera (true flies), Trichoptera (Caddies flies), Plectopera (Stoneflies), Odonata (dragonflies), *Juga* (snails). You will need to be able to identify these AMIs from pictures that show the defining characteristics.

5. What was the overall purpose of our AMI study and what did we discover from our data? How were we able to combine several different factors into one WITRB question?

6. What were the two different methods we used to collect AMIs from the creek? What do you think are some advantages and disadvantages of each method?

7. Using your understanding of the life cycle of AMIs, explain why many of the crawling organisms we looked at have the word “fly” in their names.

8. AMIs are said to be “indicators” for water quality. What does this mean, and how did our AMI study investigate this idea?