

## **Assignment: The effect of flow on the distribution of macroinvertebrate functional groups**

The structure of this report will be similar to the one on limnology. As before, the key to a good grade is paying close attention to the grading rubric.

### **Introduction**

The key concept in this study is that water flow determines the distribution of the type of particulate organic matter and that functional groups of macroinvertebrates can be predicted to assort themselves accordingly. The River Continuum Concept (Vannote et al. 1980) is the paradigm upon which these predictions are based. So the first part of the introduction should establish this theoretical framework, citing sources from the primary literature.

When we studied limnology, we modeled our manuscript after the style of *Hydrobiologia*. For this report, our model journal will be the Journal of the North American Benthological Society (JNABS). The web site is here: [http://www.benthos.org/Journal-\(JNABS\).aspx](http://www.benthos.org/Journal-(JNABS).aspx). At this site, under instructions for authors, is the description of the formatting convention for references cited for this journal.

Grading rubric for the introduction

Introduction (7)

- Opening with a general introduction to the broad phenomenon under study (factors affecting the distribution and forms of organic nutrients in stream systems, including microhabitats within streams of a given order, and the idea of functional groups of macroinvertebrates specialized for each form of organic material (4)
- References to the primary literature providing examples of these phenomena from which the general framework (above) is derived (2)
- Predicted distribution of functional groups for riffle and pool regions of the Buffalo River (1)

### **Materials and methods**

As before, the materials and methods section has two parts: description of the study site, and description of the methods used to collect the data. Description of the study site includes the lat. and long. of the site and a description of how stream discharge was measured. A brief mention (maximum of two sentences) of those methods should suffice. The collection methods were the construction of the gravel baskets, approximate dimensions of the basket and individual pebbles used, and the placement of the baskets in riffle (n=10) and pool (n=10) regions of the river.

Grading rubric for the materials and methods: Site description (1), Description of data collection (1)

### **Results**

Start with a verbal description of the results found for stream discharge (refer the reader to a figure of the stream cross section showing depth and current at 50-cm intervals). Then report the mean ( $\pm$  SE) counts and proportions of invertebrates for each functional group for each habitat type (Table might be best for this). Then report the statistical outcome of ANOVA and report your conclusion of whether or not proportional representation of functional groups differed between habitat types.

Grading rubric for results (10):

- Verbal description of discharge (1), citation to figure in text (1)
- Figure showing cross section of stream, axes labeled, figure legend below fig (2)
- Verbal description of macroinvertebrate data (1), citation to table in text (1)
- Table of macroinvertebrate data, heading above table (2)
- Reporting of statistical output of ANOVA, properly formatted (1) to support the conclusion of the effect of habitat (1)

### **Discussion**

Briefly restate the main findings of the study (the effect of habitat on the distribution of functional groups) and then compare this finding with other studies of the effect of flow on the distribution of macroinvertebrate functional groups. This comparison requires that these other courses are cited.

Grading rubric for discussion (6)

- Restatement of major finding (1)
- Comparison to the work of others (2)
- Citation to at least 3 other studies reported in the *primary literature* (3)

### **References cited**

Follow the formatting convention of JNABS

Rubric for references cited: at least 3 sources from the primary literature (1), correct format (1)

### **Writing style**

– proof read your work, have others also provide comment

Rubric: Mechanics (sentences with a verb, noun, and non-mangled syntax) (3)

Flow (development of an argument, sequencing of ideas in a logical progression) (2)

### **Summary or rubric:**

Introduction (7)

Materials and Methods (2)

Results (10)

Discussion (6)

References (2)

Writing style (5)

Total = 32