

Stream Ecology Instructions - Summary

Introduction

1. Read the Lab Manual pages 175-182
2. Watch the **Introductory PowerPoint**

Collect a sample

3. Watch the **Stream Ecology Sampling Methods video**

Collect your Data

4. Look through the Dichotomous Key (page 182) and learn the parts of an insect
5. Read **SE Information**
6. Watch the **Data Collection video** and fill out the two columns for “Your Group” in Table 13.5 (page 183) as you go through the video

Add “Class Data”

7. Gather the rest of the data from the file **SE Class Data.pdf** and enter it into Table 13.5

Chi Square Test

8. Follow the steps for a chi square test outlined on pages 181-182 of the manual. The descriptions below are the same
 - a. Fill out the row total, column totals, and grand total on table 13.5
 - b. Calculate the expected value for each table item (first set of parentheses)
 - c. Calculate the chi square value for each table item (second set of parentheses)
 - d. Add all chi square values together to get X^2_{calc}
 - e. Determine the degrees of freedom for our table 13.5
 - i. Do not include rows that had no observations
 - f. Look up a chi-square table online to get the X^2_{tab} with the degrees of freedom you calculated
 - i. We are using a p-value of 0.05
 - g. Compare X^2_{calc} to X^2_{tab} to determine if there was a significant difference in the community composition of invertebrates in Boulder Creek riffles and pools

Discussion Questions

Take a look at your prediction from the beginning of the lab. What factors influenced your ideas? What was the actual outcome? Think about all the abiotic and biotic factors that could influence the invertebrate community in each stream habitat. Use evidence from the lab to support your ideas.