

Name: _____ Section: _____ Date: _____

EXERCISE J: FOREST SUCCESSION DATA ANALYSIS

REFERENCE: You will need the data you collected at Chautauqua Park to complete this laboratory exercise.

PURPOSE: The purpose of this laboratory exercise is to analyze and interpret the field data that were collected at Chautauqua Park. The lab instructor will demonstrate the techniques of data analysis, after which you will analyze the compiled class data.

KEY TERMS AND CONCEPTS:

*Hint: Be able to define and compare-contrast each of these terms for your exams!

structure of a scientific paper
mean

variability
range

histogram
scatter plot

I. MICRO-ENVIRONMENTAL CHARACTERISTICS

1. Calculate the mean (average) and range (maximum minus minimum) for each environmental factor measured in the ecotone and forest. Record them below.

Variable	Group 1	Group 2	Group 3	Mean	Range
ECOTONE					
Slope Angle					
Slope Aspect					
Soil Temperature					
Soil pH					
Air temperature					
Wet bulb temperature					
Relative Humidity					
FOREST					
Slope Angle					
Slope Aspect					
Soil Temperature					
Soil pH					
Air temperature					
Wet bulb temperature					
Relative Humidity					

II. VEGETATION STRUCTURE

1. Use the size data to create histograms (bar graphs) showing the number of trees in each size class (seedling, sapling and tree). Make one histogram for each site: Ecotone and Forest. Use the paper provided.
2. Use the x-y coordinate data to create a scatter plot of the tree locations within your study plot. Use different colors for each species and different symbols for each size class (seedling, sapling and tree). Make one histogram for each site: Ecotone and Forest. Use the graph paper provided (p.66).

III. SCIENTIFIC REPORT

Write a scientific report of the field study of forest succession at Chautauqua Park. Your report should include no more than 2 pages of text plus figures and tables. It must include the following sections:

Title: Chose the best way to describe your study in 12 words or less.

Introduction: (i) Introduce the topics of forest dynamics, succession and disturbance in Chautauqua Park, (ii) Describe the objectives of the study (see Lab I and your field notes), and (iii) Briefly state the contrasting hypotheses and expected results.

Methods: Simple step-by-step instructions including the equipment or materials used. Describe both field methods and data analyses. Clearly state the assumption made by using size classes to interpret forest change.

Results: Compare-contrast and describe the patterns observed in Figures 1 and 2 and in the micro-environment summary table. Include these figures and table with your report.

Discussion: State the outcome of your experiment. Do the results support your hypotheses? How do the results relate to the forests that you observed on the north- and south- facing slopes of Gregory Canyon? What do you think were the main limitations of the study? How might you improve it?

(HINT: Additional hints and guidelines will be provided during the lab period following the field trip and before your report is due!!)

***DON'T FORGET:
THE ASSIGNED READING FOR NEXT LAB'S IN-CLASS DISCUSSION***

