


FOREST ECOLOGY SAMPLING IMPLEMENTATION

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Discussion Outline

- Review “Sampling Sedentary Organisms” results
- Review Sampling Design Requirements
 - Draft methods due today
- Review Lab Report Requirements
- Preview Statistics

- Out to the Field
- Write Methods/Sampling Design



Review of Lab 1: Sampling Sedentary Organisms


Lab 1: Take Home Points

- Section C: Effect of changing plot **size** on accuracy:
 - Larger quadrat size should lead to increased accuracy for all three distributions, especially random and even.
- Section D: Effect of changing plot **shape** on accuracy:
 - Shape should not matter for random or evenly distributed patterns.
 - Belt transect should show increased accuracy for clumped distributions.
- Section E: Effect of changing the **number** of plots per sampling replicate:
 - Should not increase accuracy very much.


MEASUREMENT THEORY

Accuracy vs. Precision

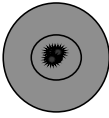
- **Precision**: repeatability of a measurement.
- **Accuracy**: how close the experimental value is to the true value.



Low precision
and accuracy



High precision
Low accuracy



High precision
High accuracy



Review of Lab 2: Sampling Design Requirements & Laboratory Report

Sampling Design: What you need.

- Where will the work be done?
 - What type of sampling methods will you use?
 - e.g. How big will quadrats be? Why?
 - What is your replication?
 - How will sampling locations be selected?
 - What type of data will you collect?
 - Counts or measurements :: discrete or continuous
 - How will you distinguish your categories?
 - What units will you use?
 - How will you analyze your data?
 - What statistical methods will you use? Why?
 - What materials do you need?
 - Ruler, tape measure, etc.
- Repeatability is Key

Laboratory Report (p. 11)

- Introduction
 - Objectives
 - State null hypotheses
- Materials and Methods
 - Sampling design. Draft due today
- Results
 - Clear statement of results
 - Statistical analysis
 - Figures & tables

Due Oct. 12th
- Discussion
 - Your interpretation of the results. 1-2 paragraphs.



Preview of Lab 4: Statistical Analyses

Statistical Analyses

- Descriptive Statistics to describe your sample population
 - Central Tendency – mean, median, mode
 - Variability – standard deviation, variance
- Comparative Statistics to test your null hypotheses
 - Is your sample normally distributed?
 - Shapiro-Wilk test
 - Are the means of two sample distributions different?
 - T-test for continuous data
 - Yates correction for 1 DF
 - Are two populations of counts or frequencies different?
 - χ^2 test

