Homework No. 13 – Inventory Report

Introduction

For the past week you have been collecting data following the inventory plan you created in Homework 11 and revised for Homework 12. Your last task for this class is to enter, process and summarize the data and prepare a short inventory report.

Instructions

Prepare a short report focused only on the essential background, methods, results and conclusions that are required. Consider yourselves to be consulting resource professionals and the landowner to be your client. The report should meet all of the goals of the inventory plan. These were the minimums established in the original assignment:

1. Your inventory must produce stand and stock tables, by diameter class and by species, similar to those you’ve generated in the last two assignments. Confidence intervals by diameter class are required.

2. You need to calculate the required sampling intensity to achieve a confidence interval half-width of 10 ft²/ac¹ for mean basal area at the stand level. You completed a reconnaissance survey of these stands, using a BAF 10 prism.

3. The inventory must estimate “top height”, or the average height of the largest tree (by DBH) on each plot in the stand, including a confidence interval.

4. The landowner is interested in a comparison of the accuracy at the diameter class level that can be achieved using fixed and variable radius plots. So you need to install both a (a) 1/24th acre fixed-are plot and (b) a BAF 10 ft²/ac¹ variable radius plot at each plot center, and process the data independently. Please record also the time it takes for you to complete the measurements in each plot.

5. OPTIONAL - If possible, the landowner would like to estimate snag inventory as an indicator of wildlife habitat.

BONUS: The landowner suspects that the stands might be suitable for uneven-aged management using single-tree selection. Ideally, this means they should have an “inverse-J” diameter distribution. The shape of this distribution is such that if the diameter class X has Y trees/acre, then diameter class X-1 has q·Y trees/acre, where q is usually assumed to be about 1.3 in the northern Lake States.

FOR BONUS MARKS:

6. Using a Chi-square goodness-of-fit test, test the hypothesis that the stand has an ideal uneven-size distribution, with q = 1.3 for 2 in. diameter classes.
Product

This is a group assignment. Only one submission per group is required. Please submit two hardcopies of your inventory report. One will be graded and returned to you, and the other will be given with your inventory plan to the landowner. Please note that the landowner is American Forest Management, Inc.

Please also submit a clean electronic copy of your field data by email to Robert Froese.

Professionalism, in the sense that your work is completed to a high standard in both technical content and presentation, is a very important expectation in this assignment.

This assignment has a weight equal to two usual lab assignments (i.e., is equal to 20 marks).

Due Date

This assignment is due no later than 9:00 a.m. on Tuesday 23 April 2013. Late submissions will not be accepted.