

## Homework No. 11 – Comparing Inventory Methods

### Objective

In this assignment, you will compare the inventory data you collected using point sampling (“prism” plots) with the one generated using fixed-area plots. Since all of the data were collected at the same points, you can compare the sampling error (precision) of the two types of estimates, and discuss in terms of your experience installing the plots.

### Instructions

In the past two labs the class as a whole established 30 sample locations in a stand adjacent to Misery Bay Road west of Toivola MI. This stand is privately owned by GMO Renewable Resources, a timber investment management organization that holds more than 440,000 acres in the western Upper Peninsula. In the first week, the points were sampled as 1/24<sup>th</sup> acre fixed-area plots. In the 2<sup>nd</sup> week the points were sampled using a BAF 10 ft<sup>2</sup>/ac variable-radius or “prism” plots.

Complete the following as a team with the same classmates that worked together to install the plots. Only one submission per team is required.

1. Generate stand and stock tables **as histograms only** for the stand sampled in your lab section (i.e., using all 15 plots installed on the day you went to the field). Do this twice, once using the fixed-area plot data, and once using the prism plot data. Include confidence intervals represented by error bars.
2. Estimate the number of plots required to achieve a precision of 20% of the mean 95% of the time. Do this for both trees/acre and basal area/acre at the stand level. Show your work.
3. Which sampling method was best for trees/acre and for basal area/acre? Why?

### Product

Present your answers in a very short memo. Submit only one memo per team; this means you have to list all of the team members and obtain all of their initials!

### Due Date

This assignment is due at the end of your lab! That means April 21 for the Tuesday group, and April 22 for the Wednesday group!