

IS THE OTHER METHOD BETTER?

You hear a lot of rumors in any business. Some of them come with great conviction. We were recently told “XX says that Fixed Plots are better than Variable Plots for getting data on poles”, is that correct?” We asked what the data was that drove them to that conclusion. No data was offered. What were they looking for? What can one say?

You can fill in the above underlined items with any combination of viewpoints. Sampling isn't about belief – it's about algebra and data. Conviction is not the issue. Get the information, and the issue is resolved – at least for your application. Sometimes Fixed Plots are, indeed, better. When we can instantly get the distance to tree centers from the sample point, they become much more competitive. With small trees they are often the best choice.

If you need to decide this kind of issue, try a small pilot inventory with both approaches. The only cost is the second method – because you're already there anyway. Both methods generate the information you need. The first result is the **CV of the item you care about** – poles in this case. Perhaps it is value, carbon, or something else you can get at the sample plots. The variability at the sample plots is the issue. It will vary, of course, by plot size (or BAF for VP sampling). There are a few times when you can answer this kind of question theoretically, but that is not frequently the case.

The second result is the **cost per plot**, because different sampling processes take different amounts of time, or perhaps manpower and other costs. Maybe one method requires measuring the acres, while the other does not. The overall cost per sample plot is the issue. While this can get tricky, in many cases it is fairly simple.

Calculate $\{CV^2 * \text{cost per plot}\}$. Whichever method has the lowest result is “best”; at least from the aspect of cost giving an equivalent sampling error. Sometimes the result will vary by forest type. Perhaps the cost varies greatly, so an inexpensive method might beat one with a smaller CV if the cost difference is large enough. You have to judge for yourself how much the cost will be when you get some practice with each method.

If the results are close, you may want to choose the method by simplicity, available computer programs, psychology of the manager, or the cost of change. Perhaps one system is more versatile, produces extra information, or has some other virtue – but from the sampling perspective, this simple comparison is informative. In any event, what someone “believes” is certainly not the issue. Knowing the cost difference is an essential issue when you compare sampling systems.

It is definitely not a good move to adopt a method nobody will believe, even if it is better – but these questions are something that you can often decide for yourself, perhaps with data already in your files.