Do You Have A Stand of Trees?

Larry Tankersley
Extension Associate

How do you determine whether to nurture the volunteer trees in your beetle-killed pine forest or plan on resetting pines? The simplest method is to get out in the area and count trees. One system that has been used successfully follows:

1. Use 1/100th acre plots (0.01 acre) = circular plot radius of 11.78 feet.
2. Divide the plot into four equal quadrants.
3. Within each quadrant, count the number of living "free-to-grow" trees of preferred species, such as oaks, yellow-poplar or other of your choice. This lets you know how your trees are distributed. Free-to-grow trees are those that will compete well with the surrounding trees and will ultimately be members of the main canopy.

Plot Information:

A. Total number of "crop" trees per plot.
B. Number of quadrants with a least one "crop" tree.

Number of Plots:

Use at least two plots per acre for areas 25 acres or less, but use at least 50 plots per stand for areas greater than 25 acres.

Plot Location:

Use a predetermined grid pattern based on the size of the stand and note plot locations on a map for re-measurement comparisons.

Working Up the Data:

A. Average # of trees/plot = total counted trees divided by # of sample plots
B. Density (trees/acre) = average # of trees/plot x 100
C. Stocking (percent) = Total # of filled quadrants (at least one tree) divided by Total # of measured quadrants

This system is best applied using a scale-drawn map of the stand or forest. Once you have determined the acreage, determine the number of plots you need and fashion an array of points on your map similar to laying rows in your garden. Your scale-drawn map should help you determine the distance between your rows and plots centers. Your map will also help you orient yourself in the woods. If the stand is large, a compass will help you stay on course as you systematically move through your woods taking plots.

At each location, you can use your body as the plot center. The 11.78-foot radius can be measured with a 10-foot pole, a measuring tape, pacing to the edge or just eyeballing.

The quality of your information will depend on the quality of data collection at each point. The ideal situation would be partners with a measuring tape: one at plot center, the other walking the edge of the plot helping to count trees in each quadrant. Discipline is required to not over-count by moving the plot center or extending the radius to include trees. Consider that one extra tree will be multiplied by 100 when we "work-up" the numbers.

Make sure that you are counting trees of a desirable species that have the potential to develop into "crop" trees. Often, more numerous, shade tolerant and less valuable trees such as red maple and sweetgum develop underneath pines. These trees are not as desirable and may inhibit the growth of desirable trees. With a well-planned and executed herbicide treatment, these unwanted trees can be controlled releasing the desirable trees, if present.

If you do not have at least 250 free-to-grow trees/acre of desirable species distributed across the area, strongly consider other reforestation options such as planting pines.