

# Thinning Requirements for SPB Prevention Program

TSPBPP030705

**PURPOSE:** To lower the Southern Pine Beetle (SPB) Hazard by improving tree vigor, growth, and stand quality. This is done by removing diseased trees, less desirable trees with poor form, forked trees, slow growing trees, and other trees that compete with the best trees in the stand for sunlight, water, and nutrients. Trees that have less competition for water and nutrients are healthier and have a lower SPB hazard risk



For **Commercial Thinning** the SPB hazard rating will have to be reduced to a score of below 100 with a minimum of 65 square feet of basal area per acre left after the commercial thinning is completed.

For **Precommercial Thinning**, approximately 300 trees per acre should be left after the thinning is completed (+/- 25%) based on 1/10<sup>th</sup>-acre check plots.

**COMMERCIAL THINNING:** There is a variety of thinning for commercial timber stands. A combination of row-thinning and selective thinning is strongly recommended. This method removes every third, fourth, or fifth rows entirely plus selectively removes trees from between the unthinned rows. Removing rows creates corridors that make equipment use easier and helps minimize damage to the residual crop trees. Undesirable trees between the unthinned rows are then harvested. Another less desirable method includes simple row thinning, i.e. removal of entire rows with no thinning between rows. This method is simple, but offers no opportunity to favor good trees over bad trees and does not effectively create free-to-grow conditions for the trees that remain. Another method is selective thinning, i.e. selecting each individual tree for harvest with no row thinning. This method allows full control to free up the best trees in the stand, but equipment operation can be difficult in dense stands and damage to leave trees can be significant.

The pine stand must be thinned back to a SPB hazard score of below 100 with a minimum of 65 square feet of basal area per acre left after the commercial thinning is completed. **This means thinning the stand to approximately 80 square feet of basal area per acre, or approximately 60-200 trees per acre for commercial timber stands with an average tree diameter of 7 to 16 inches, respectively. The following table shows the number of trees per acre needed to maintain 80 square feet of basal area per acre:**

| DIAMETER: | 7"   | 8"  | 9"  | 10" | 11" | 12" | 13" | 14" | 15" | 16" |
|-----------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Number of TREES PER ACRE needed to maintain 80 square feet of Basal Area |     |     |     |     |     |     |     |     |     |
|           | 299  | 229 | 181 | 147 | 121 | 102 | 87  | 75  | 65  | 57  |

**PRECOMMERCIAL THINNING:** Precommercial thinning is used to release over-crowded stands, which contain trees that are still too small to have any commercial value in order to prevent stagnation and increase growth on the remaining trees. Thinning can sometimes be delayed until the trees are large enough to make fence posts or pulpwood, if a market is available. However, the growth loss from delayed thinning will probably be greater than the income received for low-value products.

Precommercial thinning plus cull tree removal of large hardwoods can result in a significant investment return in dense, young pine stands. This type thinning produces no immediate income for the landowner, but the cost can be justified by the value of increased residual timber growth. Unwanted trees can be removed with herbicides, mechanical equipment, or by cutting. Thinning can be done by hand, using chainsaws, brush-hooks, axes or mechanical equipment, such as heavy-duty bush-hogs, or other mechanical thinning systems. Row thinning removes all trees in strips six to eight feet wide with six to eight feet wide uncut strips between. Strips can run in one direction, or cross in a checkerboard fashion. **For Precommercial Thinning, approximately 300 trees per acre should be left after the thinning is completed (+/- 25%) based on 1/10<sup>th</sup>-acre check plots.**

*ANNOSUS ROOT ROT TREATMENT: When thinning on ARR High Hazard soils, Borax must be applied on all freshly cut pine stumps within 24 hours of cutting. Cover the freshly cut stump with about 1/8-inch Borax powder. The best method of application is to sprinkle the material “salt-shaker” style on the freshly cut stump surfaces. “Shaker-Top” applicators are available in most farm or garden type stores in one or two pound sizes. At the proper rate of application, one pound of product will adequately cover 50 square feet of stump surfaces (or approximately 260 six-inch stumps, 158 eight-inch stumps, 80 ten-inch stumps, or 60 twelve-inch stumps). Remember that this site will always be classified as High Hazard for ARR and any future partial cuttings will need to be treated with Borax after any harvest.*

Borax Specifications: Borax (Sodium Tetraborate Decahydrate) is sold under several Names: Borax, Sporax (Wilbur- Ellis), Twenty Mule Team Borax, etc. It usually comes in 50-pound bags as a powder.

**CONDUCTING THE SALE AND HARVEST:** It is strongly recommend that you use a Registered Consulting Forester to handle your thinning harvest operation. A consulting forester can inventory and mark the stand, contact and solicit bids from potential buyers, develop written harvest contracts that protect your personal interests, and oversee the thinning operation for satisfactory performance. Consulting forester fees are handled in different ways such as a percentage of the timber sale income, flat per acre fees for marking or other arrangements suitable to both parties. Studies have shown that using a consulting forester often results in higher revenues to the landowner, even after consultant fees are paid from the sale proceeds.

If you choose to handle the sale yourself, consider hiring a consultant to mark the stand, solicit as many bids from potential buyers as possible, and **always** use a written contract. In the contract, be sure to stipulate the thinning requirements that must be followed, specifically those that relate to the residual SPB hazard rating, basal area, and number of trees per acre that must remain following.

**ENVIRONMENTAL CONSIDERATIONS:** All practices performed must follow Alabama's BMPs for Forestry and have no adverse effect on threatened or endangered species or their habitat.



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