



Reducing the Threat of Southern Pine Beetle  
Outbreaks:

## **2016 Guide to Southern Pine Beetle Cost Share for Pine Thinning Operations in Mississippi**

Project Collaborators:

Mississippi Forestry Commission

US Forest Service-Forest Health Protection Southern Region

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# 2016 Guide to Southern Pine Beetle Cost Share for pine thinning operations in Mississippi



This guide explains who qualifies, how to apply, and the requirements for the 2016 SPB Cost Share Program for pine thinning operations in MS.

## Introduction

Insect problems intensify as pine stands become crowded and tree condition or vigor declines. Southern pine beetle (SPB) infestations in particular have long been associated with high stand density. Treatments such as thinning to reduce pine density offer the most promising and long-lasting means of preventing these conditions (Nebeker, et al. 2015. Southern Pine Density Management for a Healthier Forest. MSU-Extension Publication 2893).

Thinning pine stands to a lower density increases the amount of rainfall reaching the forest soil and reduces the amount of water being used by the remaining trees. This combination greatly reduces water stress and improves pine tree condition or vigor. Pines under less water stress produce higher levels of resin acids in their sap which also repel pine beetles. That is why thinned pine stands are less attractive to beetles.

To help landowners reduce the risk of a SPB outbreak on their pine forests, the US Forest Service - Forest Health Protection Southern Region, has provided funds to the Mississippi Forestry Commission to cost share pine thinning operations in Mississippi. Mississippi State University Extension Service provides the on-site technical support.

For 2016 the SPB Prevention Program will focus on our greatest need, reducing the outbreak threat of southern pine beetles on private forest lands in Northeastern Mississippi (NE MS). Closure of a large pulp mill recently cut the demand for pine pulpwood in half and downsized the available logging force. Landowners face lower stumpage rates for pulpwood and fewer loggers available for thinnings. The combination of bad pine pulpwood markets with high SPB populations in and around the Tombigbee National Forest makes this a high priority area. The 2016 SPB funds would encourage landowners in NE MS to thin their pine stands during a terrible market situation.

## Priority Counties for 2016

In 2016, cost share funds will be made available for pine forestland in fifteen Northeast Mississippi counties: Alcorn, Benton, Calhoun, Chickasaw, Clay, Itawamba, Lafayette, Lee, Marshall, Monroe, Pontotoc, Prentiss, Tippah, Tishomingo and Union (see map to right).

## Conditions to Qualify

### Non- Industrial Ownership

To qualify for federal cost shares, the landowner must be non-industrial. The non-industrial ownership category can include sole proprietors, partnerships, family limited partnerships, limited liability corporations, trusts and estates. Usually excluded are C-corporations and REITs. The MS Forestry Commission has the last word on whether your property qualifies as non-industrial.



### 10+ Contiguous Pine Acres

Another federal requirement is qualifying forest landowners must own a minimum of 10 and no more than 5,000 contiguous forest acres. For this reason 10 contiguous pine acres is the minimum thinning acres that will qualify for cost share. But landowners are encouraged to pool their pine acreage with a neighbor to make a much more commercially viable thinning with 20+ contiguous acres.

## Additional requirements for the MS Cost Share Program for Pine Thinning

### For Pre-commercial Thinning

1. 4-12 years of age
2. Have a stand density greater than 700 stems per acre
3. Comprised of at least 70% loblolly, shortleaf, or slash pine
4. Rated as moderate, high or very high for SPB outbreak (see SPB Hazard Rating)

### For First Commercial Thinning

1. 12 years of age or older (see Caution page 6)
2. Comprised of at least 70% loblolly, shortleaf, or slash pine

3. Rated as high or very high for SPB outbreak (see SPB Hazard Rating)

### **SPB Outbreak Hazard Rating**

The Cost Share Administrator will collect data prior to thinning to determine if a pine stand has a moderate to very high hazard for SPB outbreak. SPB Hazard ratings are useful in ranking potentially susceptible pine stands and prioritizing thinnings during periods of high beetle population. The SPB Outbreak Hazard Rating system below was developed by Mississippi State University from existing regional models. It is a very simple method that uses pine basal area (ft<sup>2</sup> per acre) and stem radial growth over the last 10 years (inches) as the estimators for SPB Outbreak Hazard. An alternative hazard rating method will be used to rate stands under 12 years old needing pre-commercial thinning.

For First Commercial Thinnings (age 12 and older) the hazard score is calculated from this equation:

$$\text{SPB Outbreak Hazard Score} = 2.004 (\text{Pine BA}) - 46.4058 (\text{Radial Growth}) + 6.92$$

A SPB outbreak hazard score of 109-184 is rated Moderate, 185-232 is rated High, and 233 and higher is rated Very High in hazard for SPB outbreaks. Hazard scores of 108 or lower are rated low to very low in southern pine beetle hazard.

To qualify for cost share a pine stand must be Medium or higher in Southern Pine Beetle Hazard. Therefore a SPB Hazard Score 109 or higher is required to qualify for First Commercial Thinning cost share.

### **How to Apply for Cost Share**

**1. Get on the waiting list. Contact the Cost Share Administrator (see back page).**

Interested landowners can verbally sign up for the program beginning November 15, 2015. Call during working hours to get on the 2016 waiting list for cost share funds. Funds made available will be distributed on a first come, first serve basis to qualified pine stands.

**2. Prepare for thinning.** Once landowners are on the waiting list they need to contact a local forester to plan their thinning operation.

**3. Stand Assessment/Inspection.** The Cost Share Administrator will inspect the stand being enrolled prior to thinning operations to ensure that it meets the qualifications listed above. Thinning before this inspection disqualifies the property.

**4. Enroll by signing forms.** The landowner provides proof of ownership and the legal description of the stand at this time. A landowner is officially enrolled and has funds dedicated to their thinning operation once the Cost Share application forms are signed and approved.

### Funding Limitations

**The cost share rate is \$75 per acre for pre-commercial and first commercial thinnings.**

Total cost shares will not exceed \$12,750 (170 acres) per individual landowner (sole proprietor). There is also a limit of \$15,000 (200 acres) for a partnership, LLC, FLP, estate or trust with two or more members.

### Landowner Agreements

- **Agrees to thin within 9 months.** Landowners only have 9 months from signature date to thin their pine stand. If the stand is not thinned by the deadline, the landowner will be dropped from the program.
- **Agrees to obtain a written thinning contract with a professional logger.** To make the thinning deadline above, landowner should contract with a professional logger within 2 months from signature date. This will give the logger 6 months to complete the thinning contract. The Cost Share Administrator has the right to drop a landowner that has not contracted with a logger within 3 months.

- **Agrees to reduce residual pine basal area (BA) to 80 ft<sup>2</sup> or below.** First commercial thinning operations must reduce the residual pine stand to 80 ft<sup>2</sup> of basal area per acre or less. An alternate for greatly overstocked stands is at least a 50% reduction in BA.

The table on the right shows the number of trees per acre that can be left after a thinning given the average tree size (stem diameter) remaining after thinning. Keeping residual trees per acre at or below these numbers will ensure a residual basal area of 80 ft<sup>2</sup> or less.

Average Tree Diameter inches	Leave Trees per Acre to achieve target 80 sq ft BA
5	587
6	407
7	299
8	229
9	181
10	147
11	121
12	102
13	87
14	75

- **Agrees to harvest a minimum of 10 tons per acre in the first commercial thinning operation.** Keep harvesting scale tickets to prove tonnage.
- **Agrees to follow all Mississippi's Best Management Practices on your forestland.**

- **Agrees to inspections.** Each approved pine stand is subject to inspection by state or federal crews before, during and after the thinning. The Cost Share Administrator will need to verify the thinning was completed and BMPs were followed.
- **Agrees to keep the Cost Share Administrator updated.** Notify when thinning starts and when completed.
- **Agrees to manage stand an additional 5 years.** Landowner agrees to manage this thinned pine stand an additional 5 years after thinning. If the stand is clearcut before 5 years is completed then the landowner must contact the Cost Share Administrator.

## Procedures after Thinning

Following thinning operations provide the following to the Cost Share Administrator:

- **Pre-commercial Thinning** – Document actual costs by keeping receipts.
- **First Commercial Thinning** – Provide the first and last scale tickets from the sale and a summary of total tonnage of timber (by product) harvested. This information is required for federal reporting purposes. The Cost Share Administrator may also visit the stand to verify that the thinning has been carried out according to the cost share guidelines.

The Mississippi Forestry Commission (MFC) will review the documentation and verify completion of thinning operations. Upon approval, MFC will issue a cost share payment to the landowner.

## Caution!

Do not let this offer of cost share determine the timing of your pine thinning operations. Thinning too early can ruin the stem quality of young pine trees. A few pine characteristics that should be met before considering a first commercial thinning include a stem diameter of at least 6 inches, a total height of 40 feet or more, and branches self-pruned to 18 feet. Please consult with a forester before making a pine thinning decision. Foresters may be found on the MS Board of Registered Foresters website <http://www.cfr.msstate.edu/borf/>.

## **For More Information**

If you have questions, or would like to apply for SPB prevention cost shares, contact:

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