



Mississippi Southern Pine Beetle Prevention Program Accomplishments

John J. Riggins and Andrew J. Londo

The southern pine beetle (SPB), *Dendroctonus frontalis* Zimmermann, has historically been Mississippi's most significant forest insect pest. It can destroy millions of dollars of timber during an outbreak. Outbreaks were once cyclical, and generally occurred throughout the Southeast in southern yellow pine forests every 6-9 years.

During low populations, SPB usually attack weakened or damaged trees, as well as those infested by other bark beetle species, such as the black turpentine beetle and *Ips* engraver beetles. However, once an outbreak threshold is reached, SPB populations can explode and begin to kill healthy trees.



Signs and symptoms of southern pine beetle infestation include attack and emergence holes in the bark, boring dust in bark crevices and at the base of the tree, needle fading, and eventually loose bark. SPB adults and larvae excavate galleries in the phloem tissue between the outer bark and cambium layers, which eventually can girdle and kill the tree. Control measures for ongoing SPB outbreaks are limited to salvage cuts and cut-and-leave practices, because chemical control is costly and not very effective.

SPB outbreak hazard can be calculated for any stand using formulas that take into account stand age, density, vigor, and percentage of southern yellow pine in the stand. There are many factors that combine to influence SPB outbreaks. Some, like weather events (droughts, lightning strikes, tornados, etc...) are outside our control. However, proper stand management can limit the severity of, or completely prevent SPB outbreaks within your stands of trees. Since control options are limited after an outbreak begins, **prevention is the single most important strategy for controlling SPB.**

The most important step a forest land owner can take to prevent SPB is to carry out well-timed and properly-conducted thinning operations throughout a rotation. Promoting stand vigor is of utmost importance, and can be accomplished by maintaining proper stand density through each timely stand thinning. Properly timed thinning operations are critical in minimizing the hazard for SPB outbreak. SPB populations throughout the southeast have been very low for a number of years. In 2011, activity was again low in Mississippi, but SPB are still present. The MFC, in cooperation with Mississippi State University (Mississippi State University Extension Service, Forestry and Wildlife Research Center, and Mississippi Agricultural and Forestry Experiment Station), and the USDA Forest Service Forest Health Protection Southern Region continues to administer a



comprehensive SPB Prevention/Education Program to teach landowners about the benefits of thinning for the reduction of SPB hazard. In addition to the educational aspects of this program, there is an associated statewide cost-share program to assist landowners in getting the pre-commercial and 1st commercial thinning accomplished, as well as cost-share components aimed at supplementing loggers who thin enrolled acres, and foresters who write forest stewardship plans for enrolled acres. Currently, the program is only in effect for the southern half of Mississippi.

To qualify for federal cost shares, a stand to be pre-commercially thinned must be:

- 4-12 years of age,
- Minimum of 10 and maximum of 5,000 acres
- Have a stand density greater than 700 stems per acre
- Privately owned forestland located in Mississippi
- Be rated as moderate to high hazard for southern pine beetle outbreak
- Be comprised of at least 70% loblolly, shortleaf, or slash pine

To qualify for federal cost shares for a first commercial thinning a stand must be:

- Privately owned forestland located in Mississippi.
- Minimum of 10, and maximum of 5,000 contiguous acres
- Be rated as moderate to high hazard for southern pine beetle outbreak
- Be comprised of at least 70% loblolly, shortleaf, or slash pine

Since the program initiated in 2008, the following accomplishments have been made:

- 5 Jobs (3.5 FTEs) were directly created through this project. All 5 jobs are continuing past the conclusion of the project.
- 3,709 acres were thinned through the logger cost share portion of the project, representing \$296,738 in cost share payments to professional loggers. These funds helped retain 232 jobs
- Forest stewardship plans were developed for 91,932 acres through this project. This represents \$229,830 in cost share payments made to professional foresters. These funds helped retain an additional 57 jobs.
- A total of 157 education programs have been conducted statewide for 5,882 participants.
- Over 125,000 publications on pine thinning, the SPB, and other related topics have been distributed to date since program inception.
- 23 radio shows on farm and family radio have been conducted (<http://msucare.com/news/radio/farmandfamily/index.html>) discussing forest health, pine thinning, SPB Identification and Biology and, the SPB prevention project were conducted.
- Through the landowner cost share program, funds have been made available to thin over 14,000 acres of pine stands across MS, with nearly 10,000 acres been thinned to date

For additional information contact:

Mississippi Forestry Commission [Local Office](#)
or
John J. Riggins, Ph.D.
Assistant Professor of Forest Entomology
Box 9775
Mississippi State, MS 39762
Email: johnjriggins@gmail.com
Phone: 662-325-2984

For more information on the Mississippi SPB Prevention Program, contact:

Andrew J. Londo, Ph.D.
Professor and Extension Forestry Coordinator
Department of Forestry
Box 9681
Mississippi State, MS 39762
Email: ajlondo@cfr.msstate.edu
Phone: (662) 325-8003