

Southern Pine Beetle South-wide Trend Predictions for 2014

SPB Activity Expected to Remain Low in Most Southern States

by

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In the South, southern pine beetle (SPB) activity last year declined from levels experienced in 2013. Only 296 infestations were reported in 13 southern states, compared to 1,170 SPB infestations in 2012 and 63 infestations in 2011. The SPB spots reported in 2013 were distributed among the following states: Mississippi (144 spots), Alabama (81 spots), Virginia (33 spots), Florida (32 spots), and South Carolina (6 spots).

The southern pine beetle, *Dendroctonus frontalis*, has earned a reputation as the most destructive forest pest of pine forests in the South. In 2000, nearly 60,000 multiple-tree infestations were detected on federal, state, and private forest lands in the South, resulting in the loss of millions of dollars of resources. By 2008, the number of SPB infestations had declined to 1,433 spots detected in 16 states, with most spots occurring in Alabama, North Carolina and South Carolina. SPB activity continued to decline in 2009, 2010 and 2011 to levels seldom enjoyed throughout the South. Only New Jersey and Mississippi experienced outbreaks in 2012 and even these outbreaks declined in 2013. No SPB activity was reported in the other southern states.

A reliable system for predicting SPB infestation trends (increasing, static, declining) and levels (low, moderate, high, outbreak) using pheromone traps has been implemented across the South since 1986. This information provides forest managers with valuable insight for better anticipating SPB outbreaks and more lead time for scheduling detection flights and preparing suppression programs.

Each spring, traps baited with the SPB attractant (frontalin) and host compounds (alpha-pinene and beta-pinene) are set out in pine forests when dogwoods begin to bloom. Dogwood blooms mark the primary dispersal season for populations of the destructive SPB as well as certain beneficial insects. Federal and state cooperators monitor the traps weekly for a 4-6 week period. Of particular value for forecasting purposes are catches of clerids (also called checkered beetles), known predators of SPB. Using data on the average number of SPB captured per trap per day and the relative proportion of SPB to checkered beetles, infestation trends for the current year can be forecasted.

The results from the 2014 prediction survey ([Table 1](#)), based on 191 trapping locations within 14 states, indicate continued low SPB activity in most southern states, with the possibility of some SPB activity in a few areas of Georgia, Mississippi, Alabama, Florida, and South Carolina. Of those locations surveyed in the southern U. S., only the Tombigbee Ranger District and Homochitto National Forest in Mississippi, Oakmulgee and Shoal Creek Ranger Districts in Alabama, Chattooga River Ranger District, Oglethorpe, Clarke, and Greene counties in Georgia, Putnam and Clay counties in Florida, and the Francis Marion National Forest, McCormick and Edgefield counties in South Carolina are likely to see increased SPB activity in 2014, based on elevated trap catches this spring. But no severe outbreaks are anticipated anywhere throughout the range of SPB in the southern U. S.

A few SPB adults were captured in traps west of the Mississippi River; in Clarke County, Arkansas, and Franklin Parish in Louisiana (too few to show in Table 1). No SPB were caught in Texas, Tennessee, Kentucky, or Delaware. Predatory clerid beetles were present in most traps, but mean numbers were down from 2013 in most states. Although trapping data from New Jersey and Maryland is not yet available, the outbreak is expected to continue in southern New Jersey (Atlantic, Cumberland, Salem counties, and Wharton State Forest) where many of the SPB infestations were treated in 2013. Very few or no SPB infestations are expected again this year in the other southern states. A state-by-state summary of trap catches for SPB and clerids for 2013 and 2014, together with SPB predictions for 2014, are listed in [Table 2](#).

Annual predictions of infestation trends have proven to be 75-85% accurate. Collectively, trend predictions from numerous specific locations provide insight into SPB population shifts within a given state as well as across the South. Also, comparison of trapping results for the current year with those from the previous year for the same localities provides additional insight into SPB population changes.

In general, average trap catches that exceed 30 SPB per day, especially those in which SPB make up more than 35% of the total catch (of SPB and clerids), are indicative of increasing or continued high SPB infestation levels in the current year in southern states. Conversely, when catches of predators far outnumber those of SPB and fewer than 10 SPB adults are caught per day, infestation trends are likely to decline or remain at low levels. For reasons that remain unclear, these thresholds appear to be different at the northern extreme of the SPB range. In NJ, MD, and DE, experience has shown that trap catches of greater than ca. 6 SPB/trap/day are indicative of increasing or high SPB populations, while less than 1 SPB/trap/day is typical for declining or low infestation levels. It is uncertain whether the predator population is directly responsible for declines in SPB outbreaks. Most likely, predators are just one of many contributing factors.

Landowners with pine stands throughout the southern states are encouraged to take advantage of these low SPB population levels to thin overly-dense pine stands as a preventive measure before the next SPB outbreak occurs. Federal cost shares for precommercial thinning of natural or planted pine stands and/or first thinning of pulpwood stands are available in many states as part of the SPB Prevention and Restoration Program. Contact your state forest pest specialist for details. When SPB outbreaks do occur, immediate control of active beetle infestations is warranted in high priority areas.

Appreciation is expressed to the many state and federal cooperators who provide the data for this annual survey. If you have questions, contact Dr. Ronald Billings, Texas A&M Forest Service, at (979) 458-6650 or by e-mail at rbillings@tfs.tamu.edu.