



Technical Bulletin

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Mississippi Southern Pine Beetle Predictions for 2011

The Mississippi Forestry Commission participates annually in a south-wide southern pine beetle (SPB) survey. The SPB has the potential to destroy millions of acres of pine timber in any given year. The Texas Forest Service has developed a reliable system for predicting SPB infestation trends (increasing, static, declining) and levels (low, moderate, high, outbreak) that 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 the destructive SPB as well as certain beneficial insects. This year, surveys were conducted by the Mississippi Forestry Commission (MFC) in the following counties: Carroll, Copiah, Forrest, Itawamba, Leake, Lincoln, Marion, Panola, Rankin, Scott, Smith, Stone, Tishomingo, and Winston. Surveys are conducted by hanging Lindgren funnel traps baited with chemicals that attract SPB in pine stands. Three traps were placed in each of the above counties, and the contents of each trap were collected weekly for four weeks. The number of SPB and number of the checkered clerid beetles (the major predator of the SPB) were then identified in each sample. The calculations developed by the Texas Forest Service take the checkered clerid beetles into account because they are so important in regulating SPB populations.

The USDA Forest Service also conducts similar surveys on Federal Lands throughout the South. Their results for National Forests in Mississippi are included along with those collected by the MFC in Table 1.

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.

Very few if any SPB infestations are expected during 2011 in Mississippi. SPB were trapped in only 5 counties of the 14 counties surveyed by the MFC (Table 1). Counties with more than 30 SPB were Leake, Scott, Smith, and Tishomingo. All counties except for two are predicted to have static population growth and low rates of infestation. The two exceptions occurred in Scott and Tishomingo Counties, where trap catches of SPB were >30, and the ratio of SPB: Clerid beetles exceeded 35%. SPB populations in Scott and Tishomingo Counties are predicted to be increasing, but with few (if any) actual infestations predicted. It is worth noting that this is the second consecutive year Tishomingo County has exhibited results suggesting SPB populations might be on the rise there, however it is highly unlikely that Tishomingo County will experience more than a few infestations (if any), mostly because

of the very low number of SPB/day (0.7), which actually declined dramatically from the previous year (1.9).

Table 1: Mississippi Southern Pine Beetle Spring Survey Summary Results for 2011. Red rows indicate SPB and Clerid beetle trap catches suggest SPB infestations will remain low, but may be slightly increasing this year (“Increasing/Low”, or I/L). Blue rows indicate counties where SPB were captured, but in numbers low enough to allow the county to maintain a “Static/Low” (S/L) prediction.

County	Number SPB	Number Clerids	Percent SPB	SPB/day	Clerids/day	Prediction
Bienville N.F.	179	734	20.0%	2.1	8.7	S/L
Chickasawhay R.D.	3	251	1.0%	0	3	S/L
Desoto N. F.	0	228	0.0%	0	2.7	S/L
Holly Springs R.D.	0	231	0.0%	0	2.7	S/L
Homochitto N.F.	276	1432	16.0%	1.6	8.5	S/L
Tombigbee R. D.	149	243	38.0%	1.8	2.9	I/L
Carroll	0	417	0	0	5.4	S/L
Copiah	0	128	0.0%	0.0	1.5	S/L
Forrest	0	172	0.0%	0.0	2.1	S/L
Itawamba	0	72	0.0%	0.0	0.9	S/L
Leake	40	398	9.1%	0.6	5.5	S/L
Lincoln	0	184	0.0%	0.0	2.1	S/L
Marion	0	158	0.0%	0.0	1.9	S/L
Panola	0	32	0.0%	0.0	0.9	S/L
Rankin	0	967	0.0%	0.0	10.7	S/L
Scott	429	539	44.3%	5.3	6.7	I/L
Smith	44	182	19.5%	0.5	2.2	S/L
Stone	0	57	0.0%	0.0	0.7	S/L
Tishomingo	56	99	36.1%	0.7	1.2	I/L
Winston	10	810	1.2%	0.1	9.3	S/L
Average	59.3	366.7	9.3%	0.6	4.0	S/L

Overall, these numbers are extremely low, but indicate that a residual population of SPB still remains in the state. However, trap results suggest that we will continue to experience declining or static low-level populations in Mississippi during 2011.

Annual predictions of infestation trends have historically 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. All of which suggest very low levels of SPB activity can be expected in Mississippi during 2011. However it is always a good management practice to walk over your property or have it surveyed to detect any signs of early build up of damaging agents.

Landowners with pine stands throughout the range of SPB 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 first thinning of pulpwood stands are available in many states as part of the SPB Prevention Program. Contact your state forest pest specialist for details. Also check out the link on the MFC home page concerning the SOUTHERN PINE BEETLE PREVENTION PROGRAM.

We appreciate Dr. Ronald Billings, Texas Forest Service, at (979) 458-6650 or rbillings@tfs.tamu.edu for development of the system and for providing south-wide summaries and predictions of which portions have been included here. The results for the entire south-wide survey are posted on the Texas Forest Service Website. Additional thanks to the MFC foresters who placed and checked the traps throughout Mississippi.

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