

# 2021 Georgia Southern Pine Beetle Prediction Survey Report

The Georgia Forestry Commission (GFC) participates annually in the southern pine beetle (SPB) prediction trapping program. The southern pine beetle is the most destructive forest pest in the southeastern states. Survey results are documented in an annual report so that activity and damage levels can be anticipated and mitigated.

The Georgia Forestry Commission follows the U.S. Forest Service's SPB Prediction Trapping protocol. A 12-funnel Lindgren trap is baited with a three lure system: Frontalin, Sirex and the endobrevicomin, flexlure (Figure 1). Traps are placed in the field to coincide with redbud bloom (around the first of March in the southern part of the state and mid-March in the northern part of the state). The Georgia Forestry Commission placed 51 traps across the state in 43 counties and six weekly samples were collected from each trap. The number of SPB and clerid beetles (a natural predator of SPB) were counted each week. For 2021, the average number of SPB per trap per day was 9.9 (see Figure 2 below), which is considered low. Two counties, Carroll and Morgan, had SPB per-trap per-day counts greater than 81, which is considered very high. Carroll County had the highest overall SPB per-trap per-day at 133. Six counties, Clarke, Dawson, Greene, Oconee, Putnam and Quitman had SPB per-trap per-day counts greater than 20 but fewer than 50, which is in the medium range. The remaining 35 counties were in the low range, with an average of fewer than 20 SPB per-trap per-day.



Figure 1: Lindgren funnel trap used to monitor southern pine beetle populations.

In 2018, the USDA Forest Service (USFS) and all southeastern state cooperators collaborated with Dartmouth College and Bates College, through the Science and Technology Development Program, (STDP) to develop a new prediction model. The variables that are currently being used to make outbreak predictions include the number of SPB this year, the number of clerids last year, and the number of SPB spots in the two previous years. More information about the prediction tool can be found here: <https://www.spbpredict.com/>. The results from the 2021 survey predict that overall SPB activity will be low across the state, with only one area having a high probability of having any spots. Across the state, the probability of having any spots ranges from a 0-57%. Carroll County has the highest probability of having any spots, at 57%. Heard, Morgan, and Oconee Counties have the next highest probability of having any SPB spots, at approximately 38%. The remaining 39 counties with traps had less than 25% chance of having any SPB spots.

Perhaps a more informative prediction, because it accounts for more variability within the historical data, is the probability of an outbreak (or greater than 50 spots) in a county (Figure 3). Again, Carroll County has the highest probability of having an outbreak, with a 21% chance. Heard, Morgan, and Oconee Counties have an 11% chance of having greater than 50 spots. The remaining 39 counties that were trapped in 2021 have a less than six percent chance of having greater than 50 spots. To put this in perspective, over the last decade, we have only seen the total number of spots statewide rise above 50 three out of 10 years.

These prediction models help guide landowners in management decisions. They do not guarantee that outbreaks will or will not occur on their property. The best advice is for landowners to manage for healthy forests with techniques such as thinning, prescribed burning and invasive species control. In the past decade, SPB outbreaks have been limited to infestations in stands that are either over-stocked or over-mature. Southern pine beetle favors pine stands that are over-crowded and stressed. The Georgia Forestry Commission will continue to monitor locations of beetle spots throughout the year. All reported beetle activity will be surveyed and monitored to mitigate damage for landowners.

We are hopeful that COVID-19 restrictions will continue to lessen, allowing for routine annual aerial surveys to document and monitor pine beetle activity during summer 2021. Scheduled flights will be conducted across the state following predetermined flight lines. Aerial surveys can also be conducted by the GFC Air Operations Division during normal flights and any new possible infestations found from these flights will be investigated using ground surveys. All infestations will be reported to landowners, and GFC foresters will work with landowners to limit damage and control infestations.

For additional information contact:

Lynne Womack  
Forest Health Coordinator  
Georgia Forestry Commission  
[lwomack@gfc.state.ga.us](mailto:lwomack@gfc.state.ga.us)

Mark McClure  
Forest Health Specialist  
Georgia Forestry Commission  
[mmcclure@gfc.state.ga.us](mailto:mmcclure@gfc.state.ga.us)

## Southern Pine Beetle Trap Locations 2021

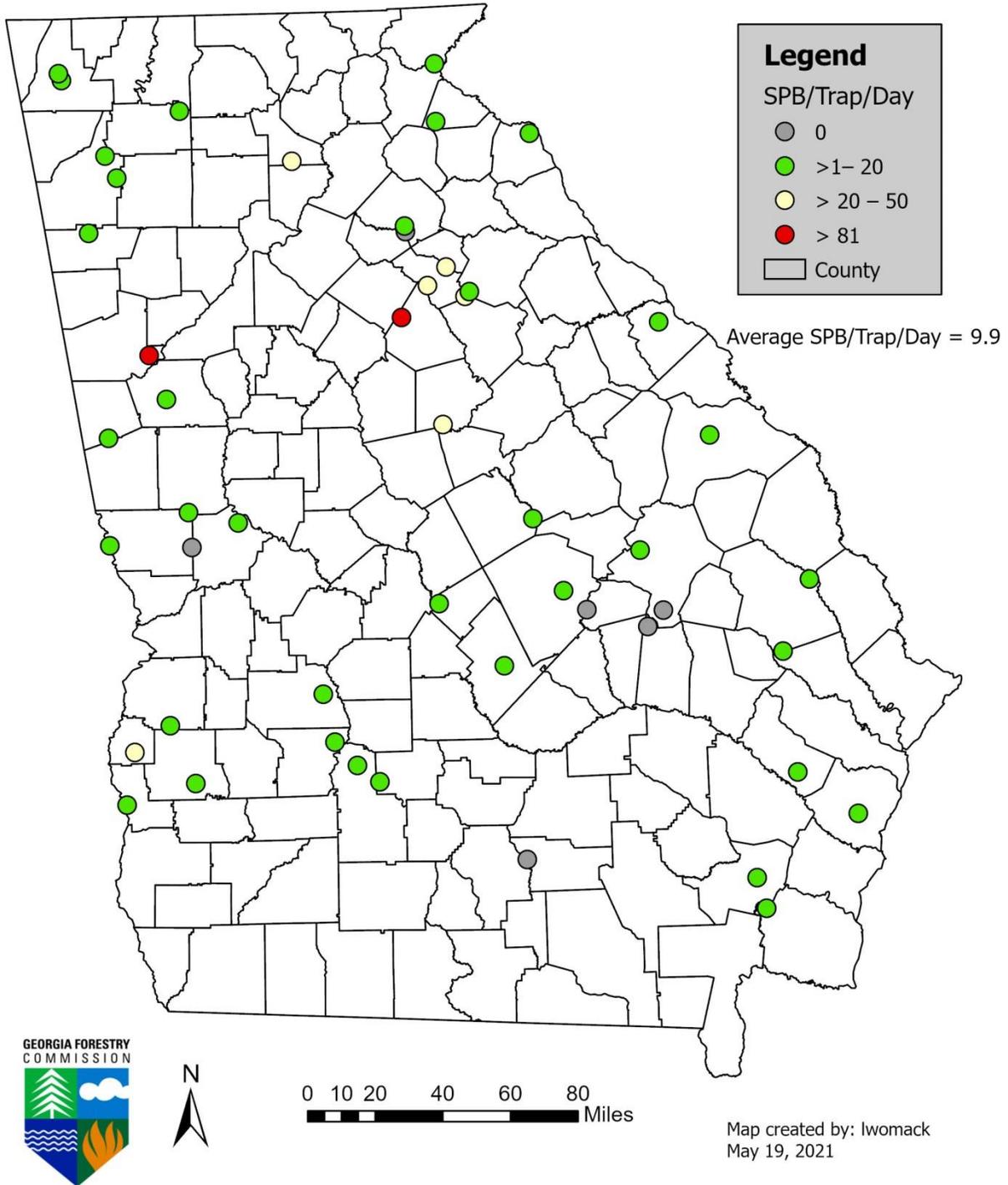


Figure 2: Southern Pine Beetle trap locations and the average number of SPB caught per day over the six-week period.

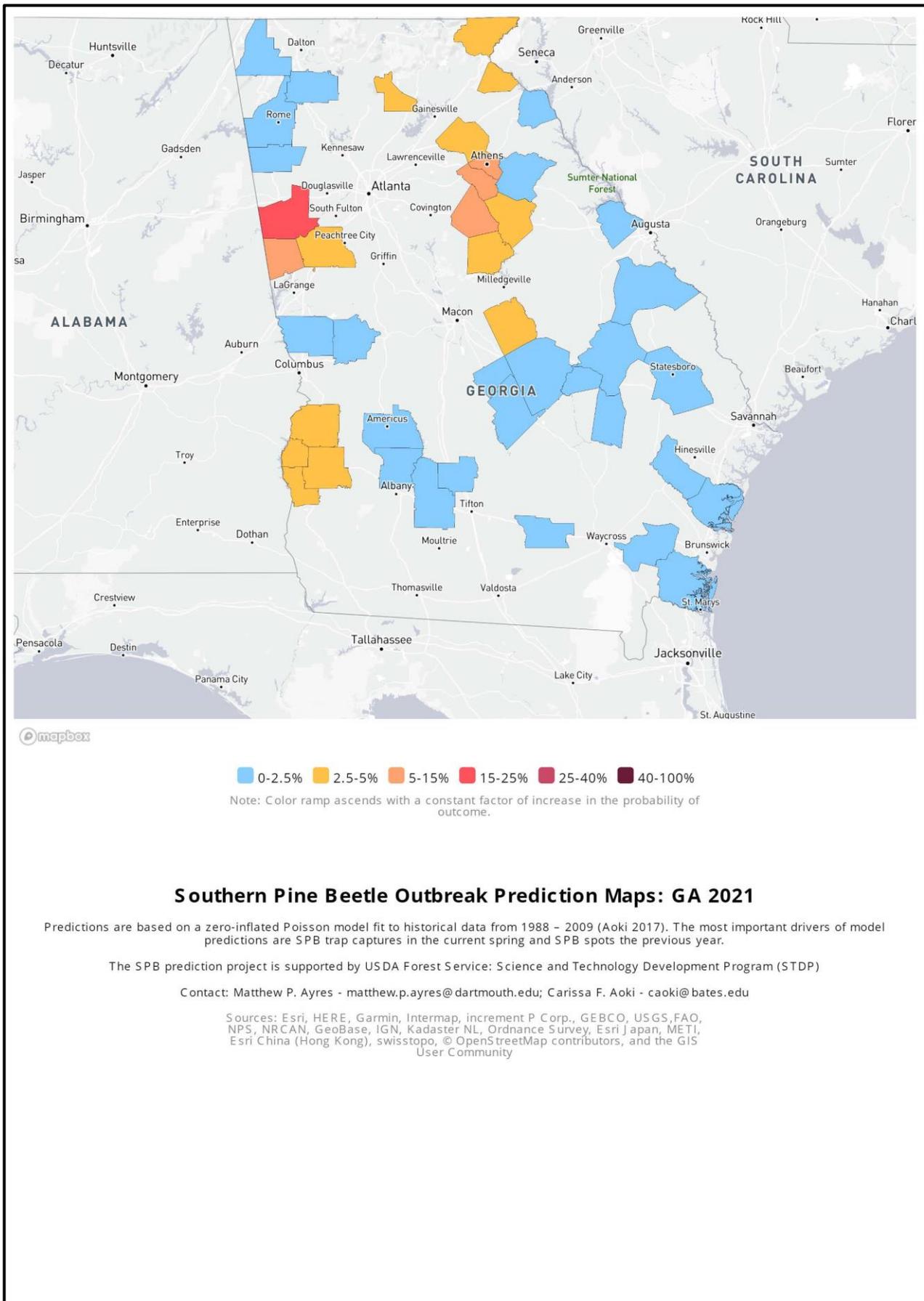


Figure 3: Probability of an outbreak (more than 50 spots).