On the Ground and in the Air . . . the AFC Keeps Watch for

PINE BARK BEETLES

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Most timberland owners and timber managers have heard of pine bark beetles, but for those who may not have yet encountered them, here is an overview, along with an update of last year's bark beetle activity in Alabama, and an update on 2016 activity.

There are several species of pine bark beetle, but this discussion will focus on the Ips engraver beetle, which has three primary species (*Ips calligraphus, Ips grandicollis*, and I*ps avulsus*), and the infamous southern pine beetle (*Dendroctonus frontalis Zimmermann*), which is the most destructive forest pest.

The Ips beetle infests and kills pines in small groups, normally from one to five or ten trees, by boring through the bark and leaving 'Y'- or 'H'-shaped galleries/tunnels in the cambium under the bark. They will then lay eggs in side galleries, and the larvae from the hatched eggs will bore to the outside of the bark. Upon reaching the outside, a larva will reach adulthood and fly or catch the wind to its next target. The Ips life cycle is brief, roughly 15 to 60 days, being shorter during warmer months and longer during colder months.

The southern pine beetle (SPB), unlike the Ips beetle, infests from one to potentially hundreds of trees in an area. It also bores into the bark to the cambium, but leaves 'S'-shaped galleries and lays eggs along the sides of the main galleries. After hatching, the SPB larva bores to the outside of the bark, becomes an adult, and flies to the next tree. The SPB life cycle is also brief – roughly 18 to 60 days – and is shorter during warmer months and longer during colder months.

Infested areas can be solely Ips engraver beetle, southern pine beetle, or a combination of each. Infestation signs to look for on pine trees are pitch tubes extending from the bark where the beetle bored in; white dust at the base of the tree; and needles turning from lush green, to pale green, to red.

The Alabama Forestry Commission (AFC), in conjunction with the US Forest Service, annually conducts aerial checks for bark beetle activity in late spring and, if deemed necessary, again in late fall. AFC personnel will also ground check some of the spots to determine which culprit is present. Although 2015 was not a bad infestation year for the state as a whole, there was considerable infestation for portions of Marengo, Clarke, and Choctaw Counties in southwest Alabama. In the June 2015 flight, the AFC reported 40, 37, and 66 infestations in these counties, respectively. After individual infestations are located in such instances, AFC personnel in each county determine ownership and notify affected landowners by letter and map. Since these three counties experienced such high infestation numbers in the spring, another check flight was flown in September 2015. Again, high infestations were found, with Marengo having 26, Clarke having 38, and Choctaw having 60.

Because of these consistent high infestation numbers in southwest Alabama, Roger Menard with the US Forest Service scheduled a meeting with AFC personnel in December 2015 to

determine which beetles were present and how active they were. Infestations in Clarke and Marengo counties were checked, with each site found to be Ips, SPB, or a combination of the two. At that time, the spots were mostly inactive, which would be expected in December. However, 'brood,' or young beetles, were still found alive surprisingly in a few infested spots, even with the cooler weather.

The best defense against bark beetles is a very cold, very wet winter. During this past winter, Alabama experienced the wet, but not the cold. Therefore, landowners and timber managers could have expected a potentially high population of beetles this summer and fall. Little bark beetle activity was observed by late spring, so the AFC did not conduct the usual late spring/early summer aerial detection flight. Then in June, the 'Southwide Southern Pine Beetle Trend Predictions for 2016' were released, indicating that SPB levels in Alabama were low but would likely be increasing. Partly because of this report and also due to increasing activity observed from the ground, the AFC began aerial detection flights in July.

With the exception of two areas, zero-to-scattered activity has been observed across the state (see map). Aerial-detected infestations of 9, 88, 117, 64, 14, and 6, were found in southeast Tuscaloosa, north Hale, north Perry, south/southwest Bibb, southwest Chilton, and extreme north Dallas respectively. Flights also indicated infestations of 70, 53, and 98 for the eastern two-thirds of Choctaw, southwest Marengo, and north Clarke respectively. County personnel are currently in the process of ground checking some of these infestations to determine which culprit(s) are responsible. Affected landowners will be notified with a letter and a map of the infestations.

The northern-most location showed increasing beetle activity from last year, while the southern-most location continued high activity from last year. Landowners should be diligent for the rest of 2016 and into 2017 to monitor these areas for persistent or increasing activity. The AFC will continue to serve the public by conducting aerial detections, performing ground checks by county personnel, and notifying landowners when infestations are found. If you have concerns or questions, or if a site visit might be needed to determine if bark beetles are present on your timberland, please call your local county office of the Alabama Forestry Commission. Additional information may be found on the AFC's website at **www.forestry.alabama.gov**.