Technical Bulletin

Forest Health Notes #75

Spring 2014 Loblolly Pine Sawfly Outbreak in Northeast Mississippi and Northwest Alabama

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Northeast Mississippi and northwest Alabama forests experienced a large sawfly outbreak during spring and early summer of 2014. The majority of the infestations occurred in Itawamba County, MS and Marion County, Alabama. The affected areas are estimated to encompass more than 10,000 acres of pine plantations in Mississippi and Alabama.

Sawfly larvae were collected, and the specimens were sent to the Smithsonian Institution for a final identification. Dr. David R. Smith, Retired Research Entomologist (Hymenoptera) at the USDA Systematic Entomology Laboratory at the Smithsonian National Museum of Natural History confirmed that the identity of the sawfly larvae collected in Itawamba County, MS was the loblolly pine sawfly, *Neodiprion taedae linearis* Ross.

Sawflies carry an unfortunate misnomer, in that they are not actually flies at all. Sawflies (Fig. 1) are members of the order Hymenoptera (ants, bees, wasps, etc…), and are technically a type of stingless wasp. Sawflies get their name because of the saw-like ovipositor which females use to cut slits into needles or shoots and insert eggs into the host plant. There are eight families of sawflies, but pine sawflies (Family Diprionidae) are the most damaging. Pine sawflies are relatively small, yet stout-bodied insects that are common nearly everywhere pines grow. Sawfly larvae (Fig. 2) are small and easily confused with caterpillars of some butterflies and moths. Sawfly larvae damage host trees by consuming needles and can defoliate entire trees or stands during outbreaks (Fig. 3).

Pine sawflies generally fall into two groups: spring or summer sawflies. Spring sawflies feed on old needles in the spring and only have one generation per year. Summer sawflies feed during spring and summer months on both new and old needles. Summer sawflies can also have more than one generation per year. As a result of these differences in life history, summer sawflies are generally more destructive than spring sawflies: spring sawflies rarely cause mortality, while summer sawflies can kill trees. While outbreaks of spring sawflies rarely cause tree mortality, they can cause significant growth loss. Additionally, there are several non-native sawflies that tend to be more destructive than our native sawfly species.

The sawfly species causing the outbreak in Mississippi and Alabama during 2014 was the loblolly pine sawfly, Ross. This is a native spring sawfly species, and is therefore not expected to cause major tree mortality. Suppressed or stressed trees could succumb to this pest, but typically only after several consecutive years of complete defoliation. Trees that appeared dead and brown in April of 2014 had already begun to regrow needles and regain a healthy appearance in May. Because the loblolly pine sawfly is a spring species, it only has one generation per year, and shouldn't cause any more defoliation this year. However, outbreaks often last more than one year and affected stands could experience another outbreak next spring when the next generation of sawflies becomes active.

ecause the loblolly pine sawfly rarely causes tree mortality, direct control measures are rarely warranted. A host of natural enemies including predators, parasitoids, and viruses will usually increase in response to elevated sawfly populations, and collapse most outbreaks. Stands with multiple consecutive years (usually three or more) of complete defoliation may have slightly more tree mortality and significant growth losses, which may warrant direct control measures such as insecticides. However, most outbreaks run their course, and high treatment costs in conjunction

with low timber values usually persuade most landowners to simply let the outbreak pass. The cheapest way to deal with sawfly outbreaks is usually to let the outbreak run its course, and to simply increase the rotation length to offset any resulting decreased growth.

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Figure 1: Pine sawfly adult. Gerald J. Lenhard, Louisiana State University, Bugwood.org

Figure 2: Loblolly sawfly larvae in Marion County, AL, 2014. Photo Courtesy Tony Avery, Alabama Forestry Commission.

Figure 3: Loblolly sawfly defoliation in Marion County, AL, 2014. Photo Courtesy Tony Avery, Alabama Forestry Commission.