ATTACHMENT 3.

32ND SOUTHERN FOREST TREE IMPROVEMENT CONFERENCE
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Entomology Specialist Report

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SEED, CONE AND REGENERATION INSECTS – CURRENT CONDITIONS

Coneworms, *Dioryctria amatella, D. clarioralis, D. disclusa, D. merkeli*

The four coneworm species, major pests in southern pine seed orchards, continued to damage cone crops in the 2013-14 growing seasons. At the Stuart Seed Orchard in Louisiana, a record crop of cones was harvested from the LA and TX sources. This huge crop had a reduced percentage of coneworm damage, which usually occurs when insect population growth fails to catch up with the resource. In contrast, the 2015-16 crops will be small and coneworm larvae were observed attacking stems without flowers because of the sparse 2015 flower crop.

Seed bugs, *Leptoglossus corculus, Tetyra bipunctata*

Both species of seed bug were present in pine seed orchards throughout the South. Damage from the leaffooted pine seed bug, *Leptoglossus corculus*, remained static during the 2013-14 growing seasons.

Slash pine flower thrips, *Gnophothrips fuscus*

This species is a perennial pest in slash pine seed orchards throughout the range of slash pine. However, damage has not been severe in the last few years.

Southern cone gall midge, *Cecidomyia bisetosa*

This species has been at low levels for several years. It can occasionally cause significant damage to slash pine cones in slash pine seed orchards located in northern Florida and southern Georgia.

Pine catkin sawfly, *Xyela* spp

The larvae of these small, primitive sawflies feed on pollen in developing male strobili of *Pinus* species including all southern yellow pines. A huge population of larvae occurred in south Louisiana and south Mississippi in spring of 2015. Several orchard managers reported larger than usual numbers of larvae in pollen bags and during pollen processing. Homeowners questioning the large number of "worms" falling from trees prompted a response by the LSU Agricultural Center Extension Service. There are three species of *Xyela* known to occur in the South, *X. bakeri*, *X. minor*, and *X. pini*. Little is known of their specific biologies.

Nantucket pine tip moth, *Rhyacionia frustrana*

This pest continues to cause damage to new plantations throughout the South. Infestations in 2013-1014 were not as serious as in 2011-12 as trees were less stressed due to easing of drought conditions.

Reproduction weevils, *Hylobius pales, Pachylobius picivorous*

Scattered infestations have occurred throughout the South in 2013-14.

Texas leaf-cutting ant, *Atta texana*

Localized defoliation of recently planted pine plantations occurs annually in east Texas and west central Louisiana on sites with deep, sandy soil. Populations of these ants remain relatively stable from year to vear.

OTHER INSECTS, SEED ORCHARD DISEASES, AND ABIOTIC FACTORS – CURRENT CONDITIONS

Southern pine beetle, *Dendroctonus frontalis*

Southern pine beetle (SPB) populations had been at record low levels across the South for almost 17 years. However, beetles are still present on the Homochitto National Forest in southern Mississippi although infestations are not serious at this time. Significant SPB activity also occurred on the Bienville and Tombigbee National Forests in Mississippi during 2013-15. In addition, unusual outbreaks of SPB have occurred in the pine forests of New Jersey and up to Long Island in New York.

Ips engraver beetles, *Ips* spp.

Pine engraver beetles (*Ips avulsus*, *I. calligraphus*, and *I. grandicollis*) are attracted to and readily attack pines under stress from events such as drought, logging disturbance, soil problems, root disease or fire damage. Areas in Texas and Louisiana that had severe drought stress suffered major infestations from 2010-1012. These outbreaks have now abated. Ips populations remained low and static throughout most of the South in 2013-14.

Sawflies, *Neodiprion* spp.

Scattered infestation of sawflies defoliated pine forests in southern Arkansas in 2013-15.

Pitch canker, *Fusarium subglutinans*

Pitch canker can be found annually across the South at varying severities. The disease is often cyclical in nature with occasional years with high disease activity. Damage was not extensive in 2013-14.

INVASIVE INSECTS

Emerald Ash Borer, *Agrilus planipennis*

The emerald ash borer, a severe insect pest of ash trees, was confirmed in several counties in south Arkansas in 2014. It has been confirmed in Webster Parish making Louisiana the 25th state to confirm the presence of this beetle. A U.S. Forest Service and Forest Health Protection employee (C. Wood Johnson) found evidence of EAB damage in ash trees during a visual survey. Further investigation revealed larvae (immature beetles) beneath the bark of multiple trees in approximately a two acre area. Feeding damage creates characteristic S-shaped tunnels, or galleries, in the sapwood causing initial branch dieback. After several years, the infested trees die. Larvae were collected and sent to the USDA Systematic Entomology Laboratory in Maryland where they were confirmed as EAB.

Laurel Wilt Disease/Red Bay Ambrosia Beetle

Laurel wilt is a destructive vascular disease of trees in the laurel family (Lauraceae). It is caused by the fungus *Raffaelea lauricola*, a symbiont of the non-native redbay ambrosia beetle (RAB), *Xyleborus glabratus*. The RAB is the only known vector of the pathogen and carries spores of R. lauricola in special fungus growing structures near its mouthparts. Trees become infected when female RABs initiate attacks on healthy host trees and introduce the pathogen into the xylem. The infection restricts the flow of water in the tree, induces a black discoloration in the outer sapwood and causes the leaves to wilt. This disease has recently been confirmed in Louisiana and Texas.

RESEARCH AND TECHNOLOGY DEVELOPMENT HIGHLIGHTS

Forest Pest Management Cooperative, TAMU Forest Service

The Forest Pest Management Cooperative (FPMC) is conducting a pilot test of Sivanto® and XXpire®, two new insecticides noted for their safety and low pollinator impact, for seed bug and coneworm control. The test is being done in orchards in Texas.

RECENT PUBLICATIONS

Armendáriz-Toledano, Francisco, Alicia Niño , Brian T. Sullivan , Lawrence R. Kirkendall , Gerardo Zúñiga. 2015. A new species of bark beetle, *Dendroctonus mesoamericanus* sp. nov. (Curculionidae: Scolytinae), in southern Mexico and Central America. Ann. Entomol. Soc. Am. http://dx.doi.org/10.1093/aesa/sav020.

WEBSITES FOR INFORMATION ON FOREST ENTOMOLOGY IN THE SOUTH

The USDA FS, Forest Health Protection

This website provides information and links to many resources concerning forest entomology and resource protection. The website is: http://www.fs.usda.gov/main/r8/forest-grasslandhealth. FHP also has a forest health information web portal that has current information on pest issues. The website is: http://www.fs.usda.gov/main/r8/forest-grasslandhealth/insects-diseases.

Texas Forest Service

This website has information on the Pest Management Program of TFS. The website is: http://texasforestservice.tamu.edu/main/article.aspx?id=1209.