

GEORGIA FORESTRY  
COMMISSION



## **Georgia Forestry Commission Forest Health Highlights**

October 1, 2014 through September 30, 2015

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### **Summary:**

The Forest Health Management Section provides expert forest health advice for landowners and forestry professionals throughout the state of Georgia. In 2015, Georgia Forestry Commission foresters incorporated insect, disease, or invasive species advice in 336 management cases involving 13,283 acres, and 184 Stewardship and Tree Farm cases with a total impact of 44,909 acres.

Statewide, forest health personnel provided training to 15,198 Georgia citizens during 108 training sessions with foresters, resource managers, loggers, public works departments (state and county), nurserymen, regulatory agencies, and landowners being reached.

### **Special notes of interest:**

#### **Emerald Ash Borer:**

Emerald ash borer (EAB) was discovered in Georgia, in July 2013. In 2015 The Georgia Forestry Commission and The Georgia Department of Agriculture have widened the quarantine to include nineteen counties and includes regulations regarding the movement of unprocessed ash logs and firewood from the regulated areas. The quarantine now includes: Fulton, DeKalb, Walton, Henry, Clayton, Fayette, Rockdale, Newton, Whitfield, Cobb, Gwinnett, Carroll, Barrow, Cherokee, Douglas, Fannin, Habersham, Murray and White Counties. The current EAB quarantine map:

[www.gfc.state.ga.us/forest-management/forest-health/eab/index.cfm](http://www.gfc.state.ga.us/forest-management/forest-health/eab/index.cfm)

#### **Asian Gypsy Moth:**

The 2015 a series of 223 traps were established in May 2015. On August 26, 2015, a single adult male Gypsy Moth was identified in a trap. This find was evaluated using DNA analysis on September 16, 2015 by USDA APHIS. On September 25, 2015 the report of a first introduction Asian Gypsy Moth was confirmed in Georgia.

#### **Brazilian Pepper:**

Brazilian Pepper was first reported in Glynn County, Georgia on June 20, 2014. Ground identification was conducted on Wednesday, June 24, 2014 and control measures using a basal bark treatment of Triclopyr were implemented after positive confirmation of Brazilian Pepper.

As of September 2015, the control treatments were evaluated and no Brazilian Pepper was found; additional inspections will be conducted in the spring of 2016.

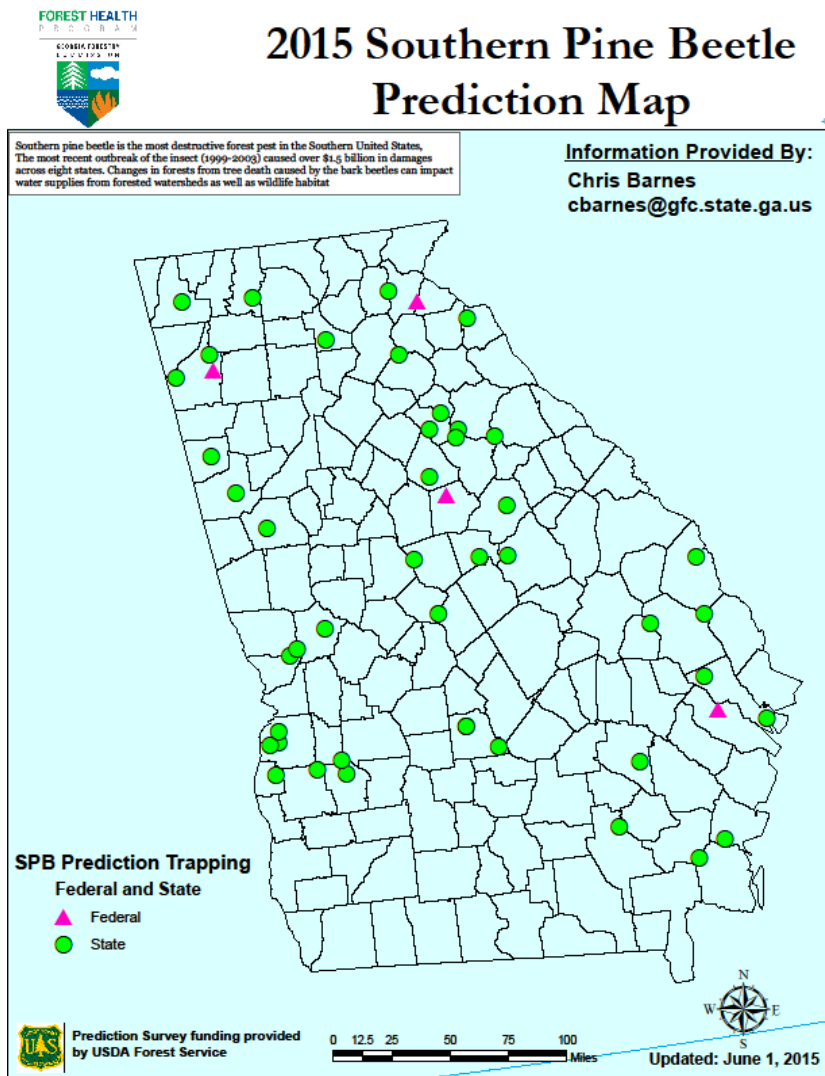
## **Noxious Weed Interception Program:**

In 2015 a multi-agency team was established between USDA Forest Service, Customs and Border Protection, Georgia Port Authority, and Georgia Forestry Commission to begin inspections for federal noxious weeds entering the port of Savannah on refrigerated containers from South and Central America. In 2009 Customs and Border Protection Agriculture agents noticed seeds embedded in radiator grills of containers originating in Peru. Over 100 containers were documented entering the Port of Savannah and federal noxious weeds seeds were noted on many of these containers. The majority of the seeds were identified as “Wild Sugarcane”, but Cogongrass and “Coat Button” were also found.

This two year survey will identify the species of weed, viability of seed, and catalog the seeds to the molecular level identifying the point of origin. This collaborative effort will be a pilot program that, if successful, will be introduced in ports around the United States.

## **Southern Pine Beetle Pheromone Trapping / Pine Beetle Aerial Survey**

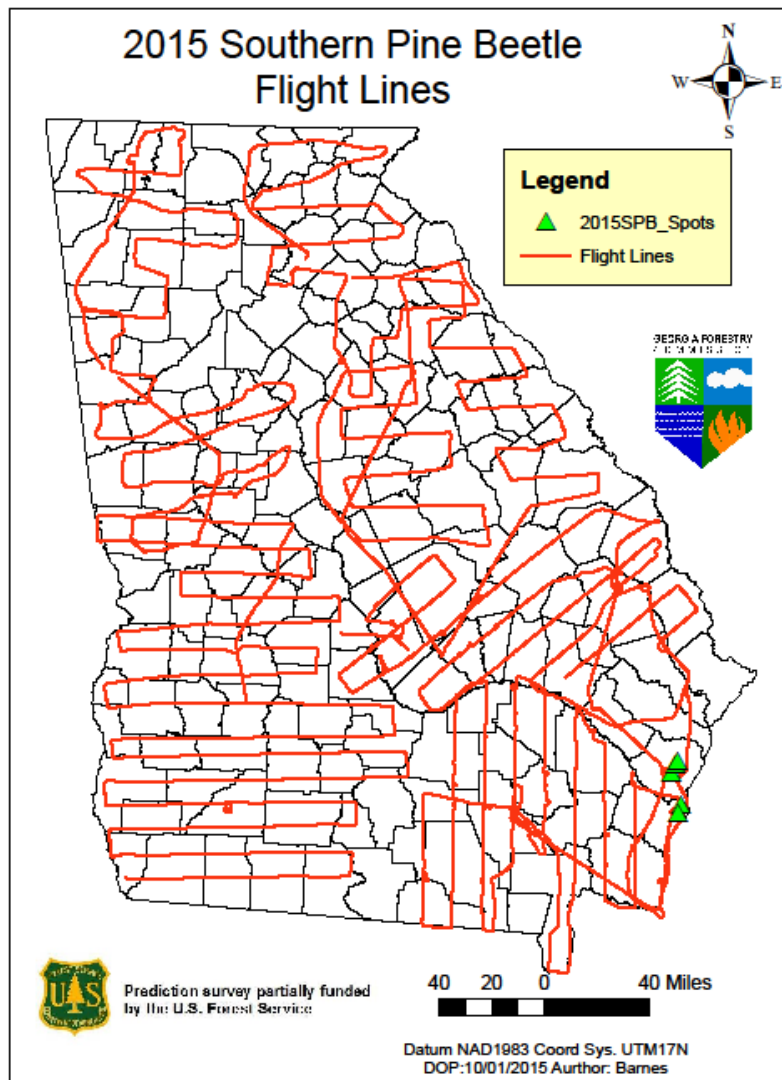
In 2015, a total of 48 traps were placed statewide, and all traps indicated low SPB populations, but Southern Pine Beetle activity was detected in early June in two coastal counties of Georgia. In the spring southern pine beetle prediction survey, USDA Forest Service, Department of Defense (Fort Stewart), and Georgia Forestry Commission, established traps statewide. Based on the trapping data alone, GFC did not expect significant SPB activity in the state this year.



On June 19, 2015 pine bark beetle activity was reported in McIntosh County, Georgia. This report sparked the beginning of the aerial survey season.

In McIntosh County, two separate infestation were discovered and landowners were assisted in the harvest of 52 acres infested with southern pine beetle. In Glynn County, on the Northeast side of Saint Simons Island, two southern pine beetle infestations were identified near “Cannon Point”. One 17 acre infestation was marked during an aerial survey and the second 3 acre infestation was found during ground inspection. All of the infestations on Saint Simons Island are now harvested.

To date no major Southern Pine Beetle outbreaks have been identified in Georgia; reports of Ips Engraver Beetle and Black Turpentine Beetle activity has been scattered and minimal across the state. Only McIntosh and Glynn counties have shown any Southern Pine Beetle activity in 2015.



### **Southern Pine Beetle Prevention and Restoration Grant**

**SPB 2015** - SPB cost share funds for 2015 were obligated towards southern pine beetle prevention practices exclusively. Landowner interest was great, and the funds were allocated in a period of weeks. Figure 1 shows a breakdown of the acres obligated for funding by practice type.

**2015 – Practices by Acres  
13,203 Total Acres**

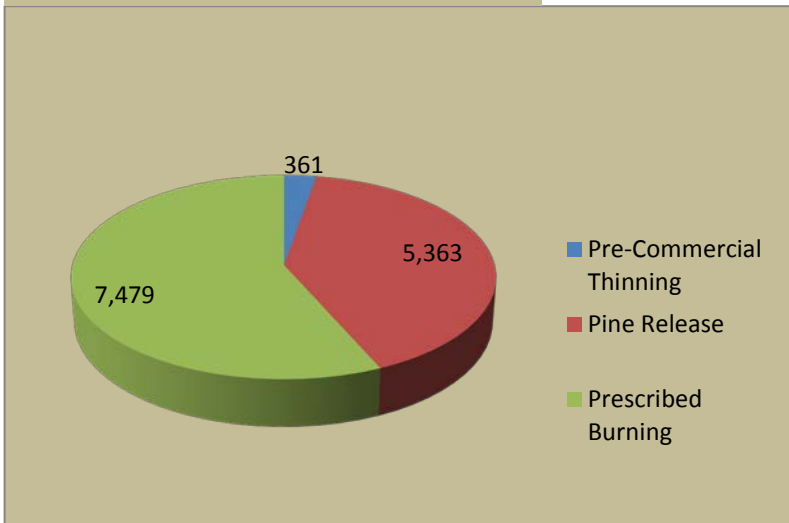


Figure 1: 2015 SPB Cost Share - obligated acres by practice type

**Program Overview** - Landowners deal directly with GFC forester for all phases of the program (application, needs determination, practice supervision, performance check, final reporting and request for payment) and payments are made directly from the GFC Administration Department in Macon. During 2015, GFC foresters serviced 509 contracts covering 47,730 acres.

Information of all types regarding this cost share program (application, overview of the program, fact sheets on each practice) is posted on the Georgia Forestry Commission’s [SPB webpage](#). Figure 2 shows the breakdown of accomplished and obligated practices by acreage from the program origin until the present.

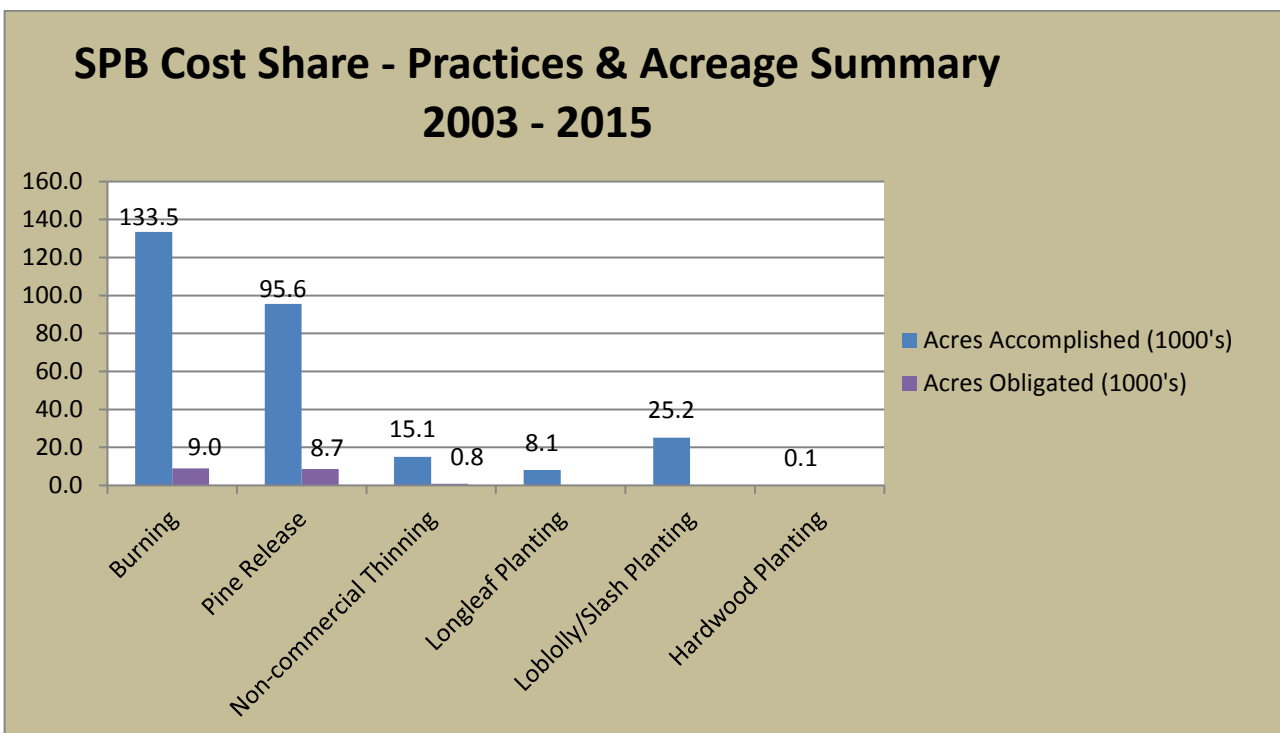


Figure 2: SPB Cost share acres accomplished and obligated but not yet completed.

## **Heterobasidion Root Disease (Formally known as Annosum Root Disease)**

Widespread mortality caused by Heterobasidion root disease in recently thinned pine plantations (slash and loblolly) was reported in 2005, and ongoing damage is still reported in 2015. The region with the highest incidence and most severe mortality is a zone approximately 75 miles wide from Augusta to Columbus (corresponding to the sandhill and upper coastal plain regions).

As of October 2014, Sporax® will no longer be produced which narrows the options for recommendations for treatment of freshly-cut stumps in thinned stands. Cellu-Treat® (disodium octaborate tetrahydrate) is the general recommendation for protection from Heterobasidion Root Disease. Cellu-Treat® must be applied within twenty-four hours of harvest, to stump surfaces with a spray applicator, to the point of runoff.

The Georgia Forestry Commission will continue to work closely with Michelle Cram, Plant Pathologist, USDA Forest Service, to assist in the labeling of *Phlebiopsis gigantea* as a control for Heterobasidion root disease.

The Heterobasidion Root Disease brochure can be found at: <http://gatrees.org/forest-management/forest-health/annosum-root-disease/HRDBrochure.pdf>

## **Pine Decline**

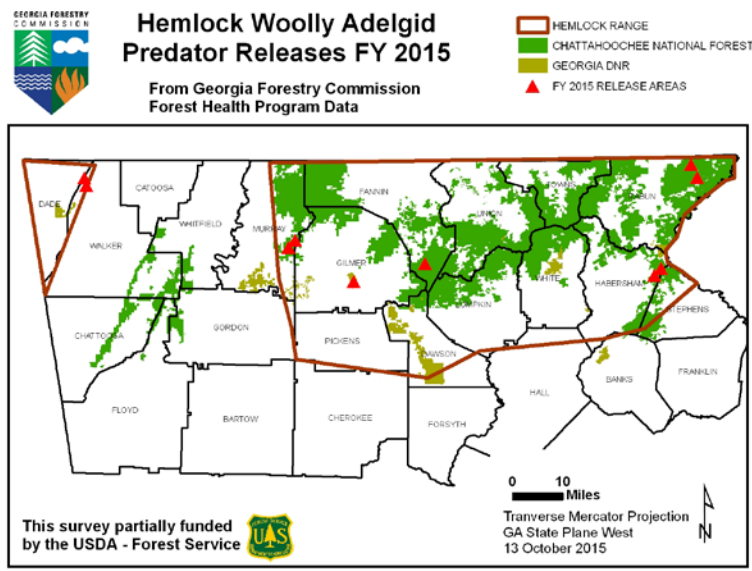
Significant pine health issues in natural pine stands and pine plantations have been observed in various areas in Georgia in recent years. Much of the mortality can be attributed to prolonged drought, Heterobasidion root disease, southern pine engraver beetles (*Ips* species), and the southern pine beetle (*Dendroctonus frontalis*). Landowners and natural resource professionals have asked “Is it okay to immediately site prepare and replant loblolly pine on a pine site harvested due to root issues such as Heterobasidium root disease?” Forest Health personnel and researchers sought an answer based on scientific data.

Dr. David Coyle, Professor at UGA Warnell School of Forest Resources, posted his research conclusions: “Despite concern voiced by landowners regarding replanting pine after harvesting due to issues reported as “pine decline”, this study shows that there are no lasting effects on seedlings of root fungi or other causes of unhealthy pine stands in the southeastern US. Growth of the subsequent pine regeneration was not affected by previous stand condition in this study, indicating that landowners may replant as soon as appropriate after harvesting an unhealthy stand. These results were not unexpected, as it is common practice in the southeastern US for landowners to replant after an unhealthy stand has been harvested. Root-infecting fungi were recovered in both healthy and unhealthy stands, indicating that discovery of these fungi in a forest stand does not necessarily indicate that the stand is unhealthy. Data from this study confirms previous anecdotal knowledge, and the authors encourage landowners to follow standard pine management and silvicultural recommendations and consult with local foresters to answer specific questions about individual stands.

## **Hemlock Woolly Adelgid**

Surveys for Hemlock Woolly Adelgid (HWA) focused on assessing predator beetle release areas, releasing predator beetles and locating suitable foliage for predator beetle rearing labs. Georgia Forestry Commission provided assistance to predator beetle rearing labs at University of Georgia, University Of North Georgia, and Young Harris College. Activities include scouting for and collecting foliage for rearing, scouting and preparing beetle release locations, and releasing beetles. In 2015, GFC assisted in scouting 18 sites and selecting 10 predator beetle release areas. The GFC conducted 31 predator beetle releases on these sites. *Laricobius nigrinus* was released at all sites. *Sasajiscymnus tsugae* was released at 6 of the sites and *Scymnus coniferarum* at 8 sites. Four of these release areas

represent excellent potential for field insectary sites and will continue to be a major focus in 2016. GFC conducted almost all of the predator beetle releases in Georgia in 2015.

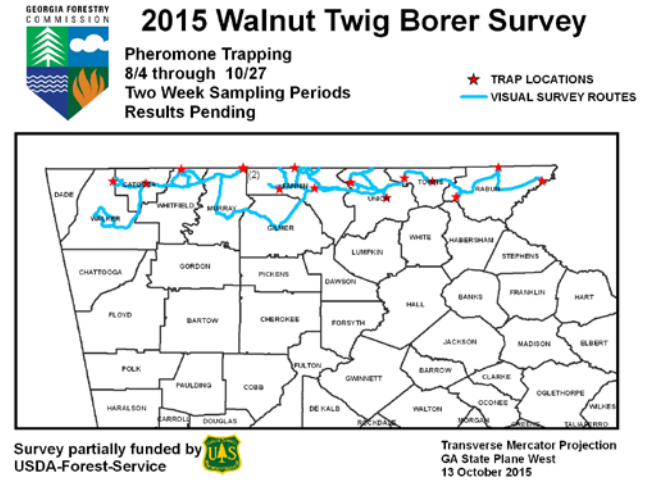


Georgia Forestry Commission serves in an advisory capacity working with the Georgia Department of Natural Resources (DNR) to help survey and protect hemlocks on state lands (mainly state parks), and the GFC assisted numerous cities, communities, homeowner associations and individuals regarding HWA. The soil injector loan program continues to be extremely popular with homeowners, with wait lists at some offices during peak treatment months. Injectors available to landowners include 10 kioritz injectors and 6 backpack injectors in 11 county offices. Injectors are now available in the following counties: Dade, Dawson, Fannin, Gilmer, Habersham, Lumpkin, Murray, Pickens, Rabun, Union and Walker. GFC public website postings were added and updated in an effort to relay this information.

<http://www.gatrees.org/forest-management/forest-health/hemlock-woolly-adelgid/>

**Thousand Cankers Disease**

The Georgia Forestry Commission (GFC) forest health staff conducted the fourth year of pheromone trapping for Walnut Twig Borer with fifteen locations, focusing closely on the counties sharing boundaries with Tennessee and North Carolina. The sites are either pure black walnut plantations or bottomland and upland forests with a large component of black walnut. The survey began in early August and no walnut twig borer has been found to date. No walnut twig borer where found in 2014.

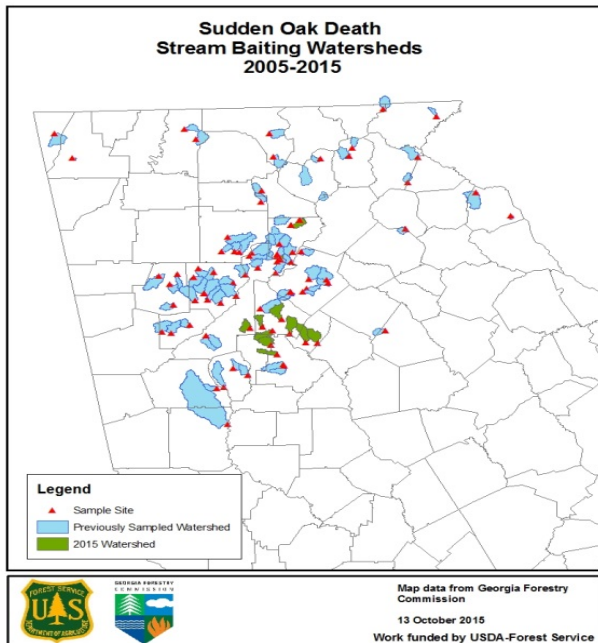




## **Sudden Oak Death**

2015 marks the 11<sup>th</sup> year for Sudden Oak Death (SOD) early detection program surveys with 10 watersheds chosen in north Georgia to monitor for the presence of the pathogen *Phytophthora ramorum*. In 2015, special focus was placed on watersheds in the southeast metro Atlanta area. Nine new early detection watersheds were selected in this area that have had no early detection sampling to date.

In addition, stream-baiting continued in two watersheds that have produced multiple positive samples in past years. Both of these watersheds have nurseries that had positive plants and soil in the past. Georgia Forestry Commission (GFC) continues to sample at five locations in these two positive watersheds. There were no positive samples in these two watersheds in 2014. To date Sudden Oak Death has not been found in Georgia.

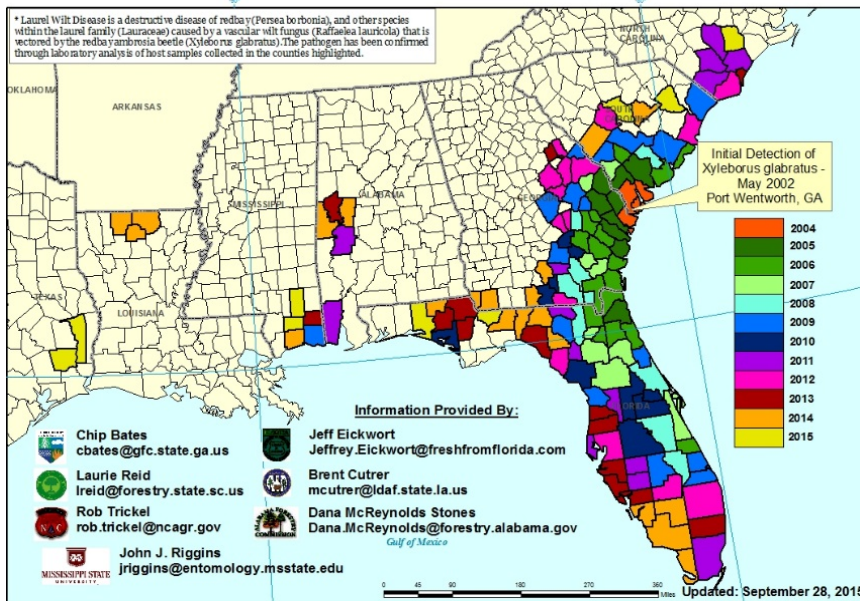


## **Laurel Wilt Disease**

Laurel wilt disease (LWD) was introduced from Asia through the Port of Savannah in solid wood packing material in Garden City, GA in 2002.

The spread of LWD throughout the southeastern United States has been charted county-by-county since 2005. As of September 2015, the presence of LWD had been confirmed in a total of 44 counties in Georgia, mostly in redbay, but many detections were from sassafras trees in the absence of known redbay populations. The newest county detections were in sassafras from the southwestern corner of Georgia, likely a result of spread from an expanding disease episode in the panhandle of Florida. Forest Health Specialist surveyed Grady and Thomas counties in southwest Georgia during the summer of 2015 with no positive detections. Furthermore, there were no new county detections made in Georgia in 2015.

## Distribution of Counties with Laurel Wilt Disease\* by year of Initial Detection



## Invasive Weeds

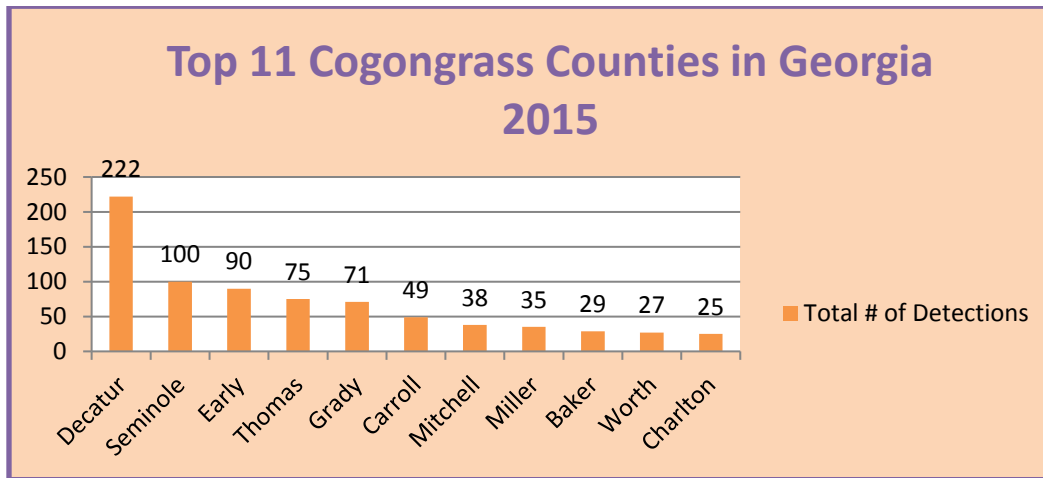
### Cogongrass

Although many invasive plants cause problems within Georgia, the majority of our efforts have focused on cogongrass and Chinese privet. Our “Cogongrass Task Force” continues its mission in Georgia to address the threat this plant poses to our environment. All known cogongrass infested sites are being treated by either the Georgia Forestry Commission, or in a few cases the landowners.

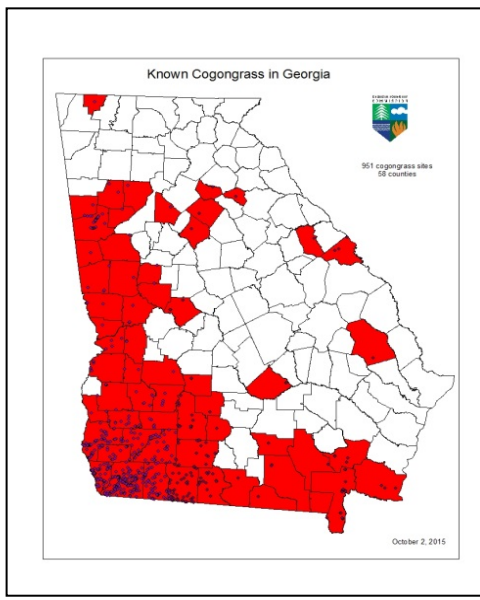
There have been 97 new cogongrass infestation sites reported and treated by the GFC during this fiscal year. Confirmed detections of cogongrass decreased in 2012 for the first time since the GFC began its leadership role in cogongrass detection and eradication. New detections increased slightly in 2013 from 87 to 102 but decreased to 76 in 2014 and ended at 84 in 2015. The GFC continues to treat all new sites with forestry herbicides, normally imazapyr and/or glyphosate, at no cost to landowners. This assistance is only possible through an ongoing grant provided by the USDA Forest Service. This nonnative invasive weed has now been found in 58 Georgia counties, involving 951 sites. Tift and Webster counties were new counties reporting Cogongrass detections in 2015. In Georgia, 230 acres of cogongrass have been treated with all known sites being sprayed at least once. Most of the infestations in Georgia are between 1/20 - 1/4 acre in size and are not visible from an aerial detection survey. Ground survey and field reconnaissance are the only reliable means of detection. Based upon post treatment inspections, approximately 80% of all known sites are being reported as negative for cogongrass. Three consecutive years of negative evaluation is required for a cogongrass site to be deemed as eradicated. There are 119 sites in Georgia that have shown one year negative post inspection, 105 sites that have shown two years negative post inspection and 539 sites have been declared eradicated.

It is obvious that the cogongrass epicenter in Georgia is located in the southwest corner of the state. The majority of all new detections over the past few years have been in this region. The chart below displays the total number of cogongrass detections in the top eleven counties in Georgia.





During this fiscal year there were 222 herbicide treatments with 581 post treatment evaluations. This includes new detections treated along with spot treatments being made on prior year sites. Herbicide treatments have been effective with the majority of all sites now being controlled within two or three growing seasons based on the current herbicide mixture and rates. These mixes and rates are published in a paper produced by the forest health staff and the USDA Forest Service. These recommendations are posted on the Georgia Forestry Commission's public web site:



### **Cogongrass Eradication Strategies**

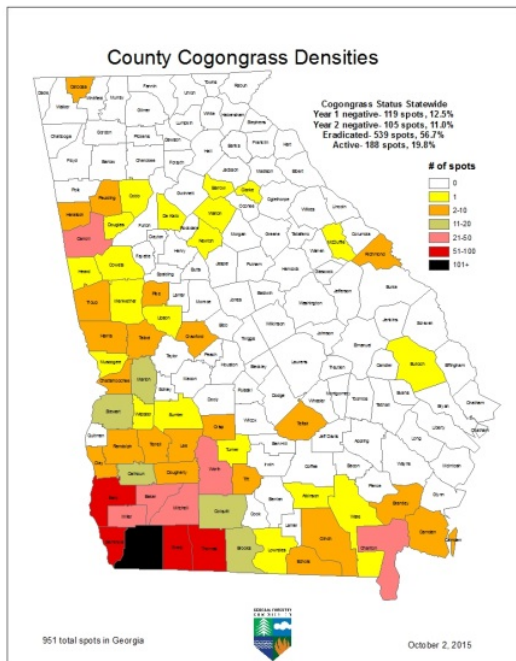
<http://gatrees.org/forest-management/forest-health/cogongrass/GFCCogongrassEradicationStrategiesrevMarch2010.pdf>

In an effort to increase public awareness and education, an information newsletter is posted semi-annually on the GFC Homepage and is e-mailed to landowners and partners across the Southeast. This newsletter contains reminders for landowners to be vigilant for new infestations of cogongrass, gives pictures for identification purposes, and provides an update on the current status of cogongrass infestations in Georgia. This newsletter is published on the GFC Homepage:

### **Cogongrass in Georgia: Spring 2015 Update**

<http://gatrees.org/forest-management/forest-health/cogongrass/CogongrassinGAUpdate-NL.pdf>

A county density map depicts local infestations and more accurately shows the spread of cogongrass in Georgia. This map is published on the GFC Homepage:

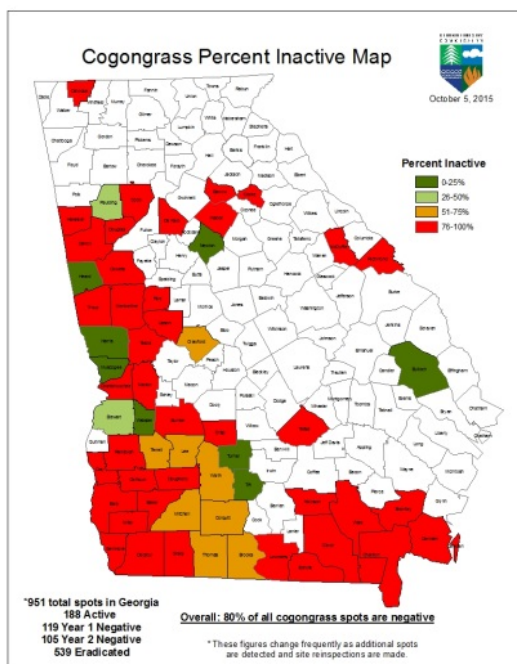


### County Density Map

<http://gatrees.org/forest-management/forest-health/cogongrass/CogongrassCountyDensityinGA.pdf>

An additional map was created in 2011 to show the Percentage of inactive cogongrass sites in each Georgia County.

<http://gatrees.org/forest-management/forest-health/cogongrass/CogongrassPercentInactiveMap.pdf>



The cogongrass banner stands created by the forest health staff have been utilized at numerous public events and workshops. In addition, the cogongrass poster created in 2011 continues to be distributed and displayed in state and federal government offices as well as in local community stores.

## Dirty Dozen List of Invasive Weeds

2015 is our sixth year working with The Forest Inventory and Analysis (FIA) teams developing data providing a defensible ranking of invasive plants. Since 2009 the “Targeted Watch List “of nonnative invasive plants did not change from year to year, and we are seeing trends in the total acres of our twelve worst nonnative invasive plant species that aggressively compete with and displacing native communities across Georgia.

The use of the top twelve “Dirty Dozen List” continues to be a valuable tool in combating nonnative invasive weeds in Georgia. Cogongrass is considered our greatest threat as an invasive plant and we separate this Federal Noxious Weed out as our number one invasive weed challenge in Georgia.



### Top Twelve Non-Native Invasive Plants

#### 2015 Dirty Dozen List

<u>Rank</u>	<u>Species</u>	<u>2013</u>	<u>2011</u>	<u>2009</u>
1.	Non-native privet	637,211	726,148	637,916
2.	Nepalese browntop	102,722	111,836	70,001
3.	Chinaberry	53,165	67,534	59,872
4.	Non-native lespedeza	36,470	41,069	40,630
5.	Kudzu	34,625	42,158	35,981
6.	Japanese climbing fern	21,152	20,563	16,271
7.	Non-native olive	18,765	18,506	17,090
8.	Chinese tallowtree	13,876	15,348	11,314
9.	Exotic rose	13,172	15,686	12,974
10.	Mimosa	11,318	18,344	15,420
11.	English Ivy	10,852	5,943	4,785
11a.	Wisteria	6,571	10,082	7,437
12.	Cogongrass* (Acres)	212	196	167

**Invasive Species:** Any plant or animal that has been introduced and aggressively competes with and displaces local native communities; normally having no native enemies to limit reproduction and spread.

Cogongrass spots are scattered across counties in Georgia and the Georgia Forestry Commission recognizes a spot as eradicated after three (3) consecutive years of finding no cogongrass sprouts.

The number of eradicated, one year negative, two year negative, and active infestations changes monthly, but overall approximately 77% of all known acres of Cogongrass are now negative.

Top 11 Non-native Invasive Species Removing Honeysuckle and Fescue.

\* Georgia Forestry Commission Documentation. Cogongrass has not been recorded on FIA plots.



In 2015, the GFC used the “Dirty Dozen” list as a criterion for The Invasive Plant Control Cost Share Program. This cost share program assists landowners in the control of targeted species listed as major competitors to our native forests, and has proven to be a valuable asset in combating invasive species. This program provides direct assistance to landowners across Georgia and is a valuable tool for contacting and working with landowners to assist in making sound management decisions.

### **Invasive Plant Species Control Program**

Addressing invasive species occurrence and control is a growing issue. The forest health staff is partnering with the USDA Forest Service, local, and federal agencies to educate the public of the harm nonnative invasive plants can cause in Georgia.

In 2011, the GFC began the Invasive Species Control Cost Share Program assisting one hundred (100) landowners with contracts to begin control of Chinese privet and Japanese climbing fern on over 2,100 acres across Georgia.

In 2012, the program assisting landowners with control of targeted invasive species to increase the amount of healthy, productive forests across Georgia by eliminating nonnative, invasive plants. Fifty-two (52) landowners were awarded contracts to control Chinese privet, nonnative olive, Japanese climbing fern, and multiflora rose on 2,250 acres of private lands across Georgia.

In 2014 emphasis was placed on funding landowners in a seventeen county area organized under the Coastal Invasive Species Management Area (CISMA). Funds assisted 62 landowners with 2,366 acres of nonnative invasive plants.

Invasive Plant Species Cost Share funding were opened statewide in July 2015, and funding has been earmarked for 60 landowners covering 1,799 acres of nonnative invasive plants.

Technical assistance is provided by GFC foresters for evaluation of sites, and determining the steps landowners should take to expect successful results (brief management plan).

Georgia’s efforts have focused on Chinese privet, Japanese climbing fern, Chinese tallowtree, Chinaberry, and Nonnative rose. The majority of the request were provided for the control of Nonnative privet. The Invasive Plant Control Program will hold another signup period in the summer of 2016, if funding is available.

### **Chinese privet**

The Forest Inventory and Analysis survey for 2015 is beginning to show a trend in the number of acres infested with nonnative privet across Georgia. In the current survey there is 637,211 acres infested with Chinese privet.

In 2015 Chinese privet and Japanese climbing fern dominated the requests for assistance under the Invasive Plant Cost Share Program. Chinese privet leads all requests and accounts for 78% of landowner applications for assistance, which shows the great need for a sustainable control program. This nonnative invasive plant continues to be a major competitor in wetlands and is still the number one invasive plant in Georgia in terms of forested acres infested.

Controlling Chinese privet has proven simple using foliar applications of glyphosate (4 -7%) applied between October and January. Herbicide applications are made in the winter months with expectation of close to a 100% kill by April of the following year.

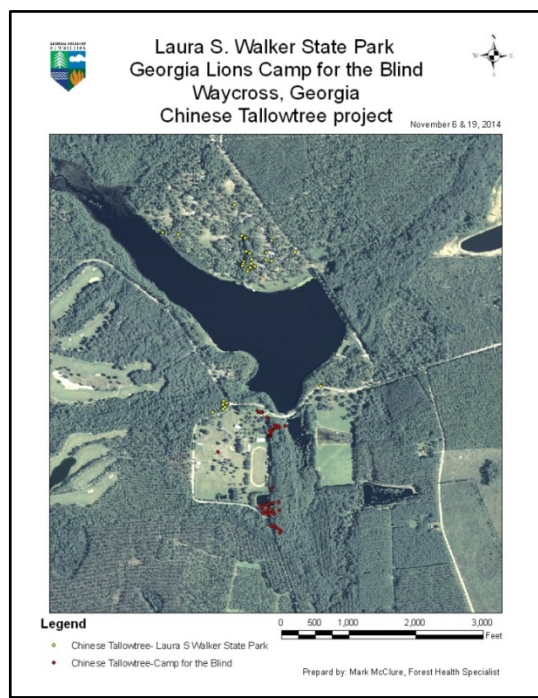
**After Glyphosate Treatment - December**



**Chinese tallowtree**

Chinese tallowtree is native to China and Japan and was introduced in The United States during the late 1700's. This nonnative invasive can establish in full shade on a wide range of soil types in the coastal region and South Georgia. Chinese tallowtree is a serious forest health problem in bottomlands, old fields, coastal marshes, disturbed and undisturbed sites, and in urban settings.

Each tree has the potential to produce thousands of seeds annually and it is common to find trees in excess of twelve to fourteen inches in diameter in well established areas. Seeds are dispersed primarily by birds; and flooding in riparian areas can disperse seeds for miles. These seeds mature in late summer to fall ready to germinate the following spring. Chinese tallowtree has infested a total of **13,876 acres** in Georgia.





In November 2014, The Georgia Forestry Commission and the Department of Natural Resources-Laura S. Walker State Park partnered to survey and treat all tallowtree in the state park and in the Georgia Lions Camp for the Blind near Waycross, Georgia. The purpose of this project was twofold: First, to kill all tallowtree and prevent further spread on current properties and adjoining properties. Secondly, to determine the effectiveness of several herbicide products.

A hack-n-squirt treatment method using imazapyr (Arsenal AC® and Chopper®) and triclopyr (Garlon 3®) herbicide were used on both sites and each treatment method was one hundred percent (100%) effective, and all 78 identified specimens were dead upon examination.

Since 2011, the Georgia Forestry Commission Forest Health Staff has promoted the use of safe application techniques using various herbicides and field demonstration areas for the control of Chinese Tallowtree.

In 2012, a long term collaborative partnership was established with the Jekyll Island Authority and two evaluation sites were established near residential communities and written recommendations have been provided to the Jekyll Island Authority on techniques using chemical control. The hack and squirt and cut stump methods are being demonstrated using Garlon® 4, and landowners on the island are being encouraged to visit the sites to see the results first hand.

The Georgia Forestry Commission maintains a good working relationship with the Jekyll Island Authority, and control efforts will continue on the island. New infestations of Chinese tallowtree are quickly identified and control measures are used to safely remove this invasive plant. The GFC acts in an advisory and education roll as a cooperative partner in this effort. Our goal is to promote known, safe control techniques and demonstrate herbicides as a viable alternative without collateral damage.

### **Brazilian Pepper (*Schinus terebinthifolius*)**

Brazilian pepper is native to South America and was introduced into Florida in the mid-1800s as an ornamental plant. It is an aggressive invader that can grow as a shrub or into a small tree. It was thought that Brazilian Pepper could not establish in Georgia due to the colder temperatures, but a small infestation was identified in the summer of 2014. Brazilian pepper was first reported on the Jekyll Island causeway on June 23, 2014. Ground identification was conducted and control measures were implemented in an area approximately 100 feet long and 30 feet wide and plants were marked using flagging tape.



On June 25, 2014 the infested area was treated using a basal bark treatment of triclopyr at a 25 percent solution. Within one month the basal bark application was very affective and achieved good kill. Stems

were brittle and brown and appeared to be dead; browning was observed in the cambium layer and plants appeared to be dead with no sprouting.

In 2015 multiple inspections of the area were made by The Georgia Forestry Commission and Jekyll Island Authority to determine the success of the initial treatment. On September 19, 2015, an inspection was performed in the treatment area and no Brazilian pepper was found.

### **Air Potato (*Dioscoria bulbifera*)**

Air potato is an invasive vine from Southeast Asia which was introduced in Florida in 1905 and is of concern to Georgia because it actively competes with and displaces native plants. Our first introduction to this nonnative plant was in St. Mary's, Georgia and we have now had reports as far north as Pike County.

The plant is a twining vine growing in excess of 70 plus feet with a distinct heart shaped leaf, and the vine produces a growth resembling a potato (Thus the name Air Potato). The enormous amount of potatoes (tubers) makes this a very difficult plant to control.

On June 22, 2015, The Georgia Forestry Commission partnered with the City of St. Mary's to conduct a Biocontrol release of Air Potato Beetle (*Lilioceris cheni*) to begin an integrated pest management program targeting Air Potato. The goal was to introduce Air Potato Beetle reducing levels of this nonnative plant allowing for the use of herbicides for complete control. In the process of surveying Saint Mary's for air potato infestations, it was found that the Air Potato Beetle has naturally spread from Fernandina, Florida to South Georgia and was already combatting this nonnative pest. During follow-up surveys, Air Potato Beetle has been identified as far north as Brunswick, Georgia.



August 31, 2015, 600 Air Potato Beetles were releases in the town of Saint Mary's at seven different sites and naturalized beetles were found at each of the release sites. Both larva and adults feed on Air Potato; skeletonizing the leaves and depriving the plants of needed sugars.

In 2016, the Forest Health Team will evaluate the results of this biocontrol effort, and work with landowners to introduce this control option to different areas around Georgia.

### **Callery Pear (*Pyrus calleryana*)**

Bradford pear was introduced into the United States in 1917 and has been commonly used as an ornamental since the early 1950's. Bradford pear was used because it was supposed to be seedless, thornless, and sterile, but as the landscape industry developed different cultivars cross pollination

occurred and viable seed were produced. These new wild seedlings have reverted back to their original varieties of Callery pear, and can be found along roadsides, empty lots, and throughout pine stands across Georgia. Callery pear is quickly becoming an invasive exotic pest.

In 2015, the forest health staff began field observation trials to determine optimal application timing, techniques, and herbicide rates to control Callery pear using commercially available herbicides. Multiple plots were established using basal stem, thin line, and foliar applications at varying rates of triclopyr, glyphosate, and imazapyr to control this thorn infested invasive. The initial results have proven successful in treatment of young pear trees up to 12 to 15 feet tall. The key appears to be combating the infestation while they are young. Best results for control of young Callery pear appears to be an application of glyphosate (5 -8%) with 1.5 ounces of metsulfuron (Escort® XP) in one hundred gallons of mix, applied between October and February. Basal bark treatment can also be used in late winter/early spring or during the summer. Hack and squirt treatments proved to be very difficult due to the long thorns.

A Warnell School of Forestry and Natural Resources publication was produced in 2013 which is a very informative and accurate publication:

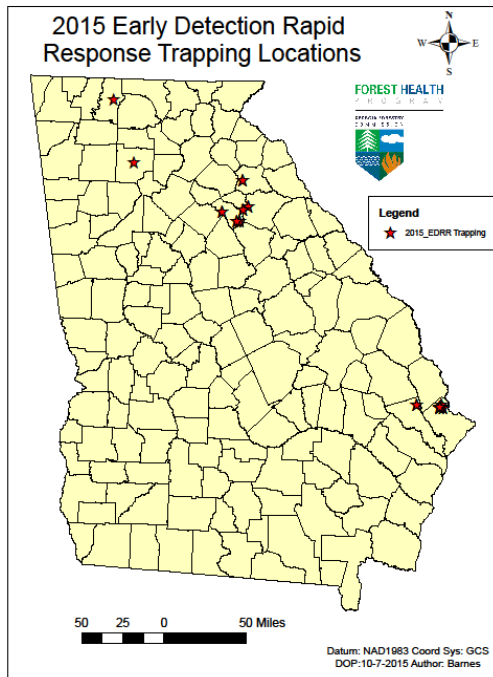
[http://www.bugwood.org/productivity/pdfs/Bulloch\\_Pear\\_control\\_Dec\\_2013.pdf](http://www.bugwood.org/productivity/pdfs/Bulloch_Pear_control_Dec_2013.pdf)

### **Early Detection Rapid Response**

In 2015, the Georgia Forestry Commission perform early detection insect trapping around facilities accepting international cargo with solid wood packing material (SWPM). In addition to annual warehouse trapping in the Savannah and Athens area; the Forest Health Management Team identified the need to establish Gypsy moth traps along the Savannah River waterway from Tybee Island, Georgia to and around the Port of Savannah. The results of this Early Detection trapping, identified a first introduction Asian Gypsy Moth confirmation in Georgia.

Early Detection Rapid Response monitoring was also used in two cases of new nonnative invasive weeds entering Georgia: Brazilian Peppertree and Air Potato.

During the annual warehouse survey, fourteen sites were selected across the state to establish a total of forty Early Detection Rapid Response (EDRR) traps and Cooperative Agriculture Pest Survey (CAPS) traps. Twelve Lindgren funnel trap sites (36 Traps) were deployed in the Athens and Savannah area for the detection of nonnative exotic bark and ambrosia beetles around warehouse sites identified as high priority sites. The traps were inspected on a two week schedule for twelve weeks with trapping ending in July 2015.



Two additional sites (4 Traps) were selected in Murray and Cherokee Counties to conduct early detection trapping for a new, first introduction to the United States, bark beetle that has been determined to be *Ambrosiophilus peregrinus*. The Georgia Forestry Commission forest health specialist established two traps at each suspect location and monitored the traps weekly through the first week in July 2015

During the 2015 collection period, no new United States records were recorded for *A. peregrinus*, but in 2014, multiple catches of *A. peregrinus* were made in traps placed for Thousand Canker Disease survey. With approximately 30 miles between the original trap sites and the second identifications, it would suggest this beetle is either far more common than first reported or there have been multiple introductions. To date there were no positive samples identified for *A. peregrinus*.

*Xyleborinus artestriatus* was initially documented in 2010 near a warehouse in Port Wentworth, Georgia. By 2012 this beetle was documented in four additional warehouses located within 2.5 miles from the initial catch area, which would suggest that this new exotic ambrosia beetle is established in coastal Georgia and is producing breeding populations. In 2015 *X. artestriatus* was recovered in multiple traps and is considered to be established in the Savannah area. To date no damage has been documented on native vegetation in the area, and the preferred native plants are still not been determined.

Tremex woodwasp (*Tremex fuscicornis*) was identified during warehouse trapping in Elberton, Georgia in 2012 as a new first introduction to the United States. This new pest to Georgia was identified as a male and female Tremex woodwasp (*Tremex fuscicornis*). Multiple suspect Tremex samples were collected and presented to the Georgia Forestry Commission technician for identification, but no additional Tremex woodwasp have been captured or collected in Elberton, Georgia. In addition, 12 Sirex woodwasp traps, 12 Tremex woodwasp traps, and 6 emerald ash borer traps were placed in the Elberton and Savannah areas. These traps have yielded no additional nonnative pests to date.

In an effort to increase awareness of nonnative insects, a four page color brochure is distributed to participating warehouse partners to provide a visual representation of pests targeted in our annual surveys. In 2015 we visited 125 warehouses across the state which included 27 new warehouse sites.

Our goal is to develop a relationship with the warehouse managers and walk with them through the warehouse showing them things to look for and distributing the brochure.

There were 4 warehouse interceptions reported in 2015 with samples collected at warehouse sites. All suspects were identified and determined to be of no concern; however, having warehouse employees actively looking and contacting us with insects that look unfamiliar to them is a very positive outcome.

### **Sirex / Tremex Woodwasp**

Sirex woodwasp (*Sirex noctilio*) remains a pest of high concern that has yet to be detected in Georgia (or the southeastern U.S). The Sirex woodwasp poses a threat to all of Georgia's southern yellow pines and warrants monitoring through our Early Detection Rapid Response protocols. Tremex woodwasp (*Tremex fuscicornis*) was introduced in Georgia (Spring 2012) through international cargo with solid wood packing material (SWPM). This pest has the potential to cause severe damage to healthy hardwood trees of importance in Georgia. These new pest introductions illustrate that increased global trade introduces challenges for our forest health program and emphasizes the importance of our early detection programs. In 2015 a series of panel traps were deployed at high risk warehouses receiving solid wood packing materials. Twenty four (24) traps were established in the vicinity of warehouse sites in the Savannah and Elberton area with inspections being conducted on a two week interval. No *Sirex noctilio* or Tremex woodwasp have been captured to date.

