Georgia Forestry Commission Forest Health Highlights

October 1, 2019 through September 30, 2020

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Summary:

Georgia is by far one of the strongest leaders in forestry in the United States and the world. There is an estimated **24,464,219** acres of forest land in Georgia with 89% of that land under private ownership. Only 10.93% of the commercially available timber resources are under federal and state ownership. Georgia tops all other states in the nation in the volume of timber harvested while overall tree volume in Georgia has been increasing since 1953. 64% of Georgia is forested.

2020 was by far one of the most challenging years we have experienced. Covid-19 limited interaction with landowners and our greatest concern was for the safety of our coworkers. All customer service contact was limited and customary greetings (handshakes) were discouraged. We had to move on and we realized many of our projects were possible even without interaction. The Forest Health Program did not come to a grinding halt.

Using suggested social distancing protocols, modifying landowner interaction with virtual meetings and remote field visits, and using limited and distanced landowner meeting allowed for a system of 21st century forest health interaction. The pandemic actually moved us into the 21st century and forced us to use new resources in the fight against forest-damaging pests.

Georgia Forestry Commission foresters incorporated insect, disease, or invasive species advice in 346 management cases involving 22,483 acres. Training was provided to 874 Georgia citizens during 34 training sessions. Our forest health personnel incorporated a wide variety of outreach methods to continue serving the landowners in Georgia.

Special notes of interest:

<u>Emerald Ash Borer</u>

Emerald Ash Borer (EAB) was discovered in July 2013, and trapping data shows it is now found in 37 counties: **Banks, Barrow, Bartow, Butts, Carroll, Catoosa, Chattooga, Cherokee, Clayton, Cobb, Dade, Dawson, DeKalb, Douglas, Fannin, Fayette, Floyd, Fulton, Gilmer, Gordon, Gwinnett, Habersham, Henry, Jackson, Lumpkin, Murray, Newton, Paulding, Pickens, Rabun, Rockdale, Spalding, Union, Walker, Walton, White, and Whitfield Counties.** Three new positive counties were detected in 2020 for the presence of EAB and one new positive identification was found in Butts

County from a sample collected at a log yard. A new Emerald Ash Borer trapping dashboard can be found at: Emerald Ash Borer Trapping Dashboard

Asian Longhorned Beetle

Asian longhorned beetle has not been identified in Georgia, but in June 2020 Asian longhorned beetle was positively identified by USDA APHIS near Charleston, South Carolina.

This introduction prompted the development of a Georgia working group. The Georgia Department of Agriculture, Georgia Forestry Commission, University of Georgia, and Homeland Security at the Port of Savannah met to form a working group. These agencies gathered in Hollywood, South Carolina to receive our first briefing, and even though no official memorandum of understanding was produced the initial framework for a workgroup was established. A follow-up meeting will be conducted in the Spring of 2021 with the Georgia Invasive Species Taskforce serving as the clearinghouse for information and guidance. Asian longhorned beetle is a serious threat to Georgia and we are taking a proactive stance to meet this new challenge.

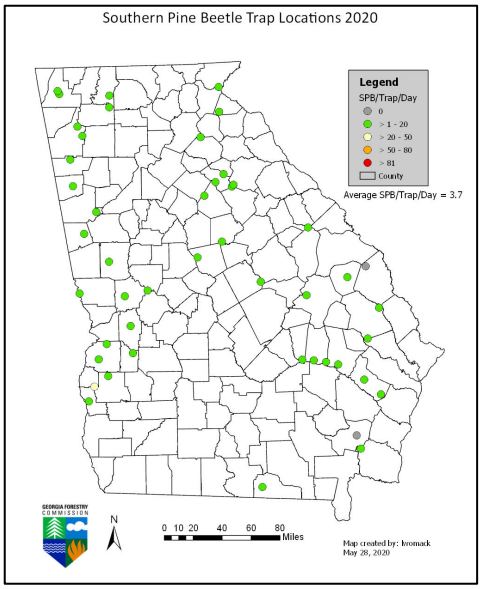
To date the working group has produced informative material that will provide a common voice during educational programs.

The Fact Sheet, Look-a-like brochure, and Asian Longhorned Beetle PowerPoint can be found at: Asian Longhorned Beetle Information

Pine Beetle Pheromone Trapping / Pine Beetle Aerial Survey:

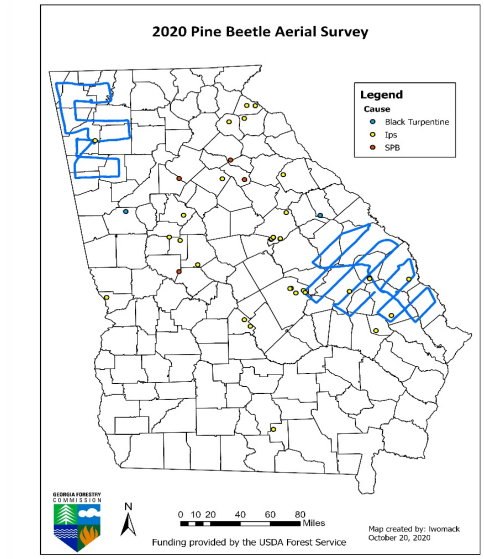
In 2020, The Georgia Forestry Commission followed the SPB Prediction Trapping protocol. 47 traps were placed across the state and six weekly samples were collected from each trap. These traps containing three lures, Frontalin, Sirex and the endo-brevicomin flexlure. The results from the 2020 survey predict that overall SPB activity will be low across the state, but Rabun County has this highest probability of having any spots, at 80%. Camden, Clay, Haralson, Oglethorpe, Quitman, Randolph, Screven and Stephens Counties have the next highest probability of having any SPB spots, at between 20-40%. The remaining 38 counties with traps had less than 20% chance of having SPB spots.

The best advice is for landowners to manage for healthy forests with techniques such as thinning, prescribed burning and invasive species control. The GFC will continue to monitor locations of beetle spots throughout the year. All reported beetle activity will be surveyed and monitored to mitigate damage for our landowners in Georgia. Due to Covid-19 restrictions, typical annual aerial surveys to document and monitor pine beetle activity will be limited due to social distancing requirements. Aerial surveys can be conducted by the Georgia Forestry Commission Air Operations Division during normal flights and any new possible infestations found from these flights will be investigated using ground survey. All infestations will be reported to landowner and GFC foresters will work with landowners to limit damage and control infestations.



2020 Pine Beetle Prediction Trap Locations

Two pine bark beetle flights were flown in October for a total of 935 miles. These two flights combined had visual observations on approximately 147,290 acres. The majority of spots reported this year were Ips beetles, with GFC foresters reporting 37 spots on approximately 67 acres. Local foresters visited landowners at each spot, advising them to harvest the spots or continue monitoring to determine if the spots were actively spreading.



2020 Pine Beetle Aerial Survey

Southern Pine Beetle Prevention and Restoration Grant Report (2003-2020):

The USDA Forest Service has provided federal grants in this program area for 18 consecutive years. These grants are primarily utilized for direct cost share payments to Georgia landowners to implement several prevention practices to treat high risk stands and forest restoration practices. Of these grants totaling $12.6 million, **$7.7** million has been obligated towards direct landowner payments under cost share practices treating approximately 329,400 acres. SPB cost share funds for 2020 were obligated towards southern pine beetle prevention and restoration practices.

Program Overview - Landowners work directly with their county GFC forester for all phases of the program. This process has been favorably accepted as it seeks to streamline the procedures from start to finish. During 2020, GFC foresters serviced 355 contracts covering 32,654 acres.

Hemlock Woolly Adelgid:

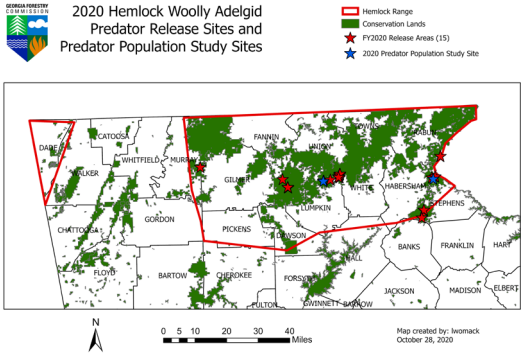
The Georgia Forestry Commission provided assistance to the predator beetle rearing labs at the University of Georgia, University of North Georgia and Young Harris College. Activities included scouting for and collecting foliage for rearing, surveying and preparing beetle release locations, and releasing beetles. The GFC played a critical role in the logistics of delivering foliage to the labs and getting beetles to the selected release areas.

In FY2020, GFC scouted 18 potential sites. Fifteen predator beetle release areas were selected, all in the Chattahoochee National Forest. The GFC conducted 22 predator beetle releases on these sites and the University of North Georgia conducted 13. *Laricobius nigrinus (Ln)* was released at five sites. *Sasajiscymnus tsugae (St)* was released at 14 sites. All of the releases were adult beetles. Seven of these release areas represent excellent potential for field insectary sites and will continue to be a major focus in FY2021.Predator population studies will be a major part of this program moving forward. In 2019, three new sites were selected for recovery research this year, and last year's sites were sampled for predator spread for a total of nine study sites. On all sites, it had been two years or more since beetle releases were made, and each site had two or three species of predator beetles released over the last decade: *Sasajiscymnus tsugae*, *Laricobius nigrinus* and *Scymnus coniferarum (Scw).*

The Georgia Forestry Commission continued to serve in an advisory capacity, working with the Georgia Department of Natural Resources to help survey and protect hemlocks on state lands. This year, the GFC provided chemicals for treatment of hemlocks in the Wildcat Tract of the Dawson Forest WMA. On Lula Lake Land Trust properties, the GFC continues to work with staff and a contractor to delineate current and future predator beetle release areas and to coordinate releases with chemical treatment.

The GFC assisted numerous cities, communities, homeowner associations and individuals with HWA issues. The soil injector loan program continues to be extremely popular with homeowners. During peak application times, there is a waitlist in several counties for use of the injectors. The total number of injectors available to landowners is now 16, and injectors are now available in the following counties: Dade, Dawson, Fannin, Gilmer, Habersham, Lumpkin, Murray, Pickens, Rabun, Union and Walker.

The GFC public website postings are continuously updated in an effort to relay this information. Hemlock Woolly Adelgid Information.

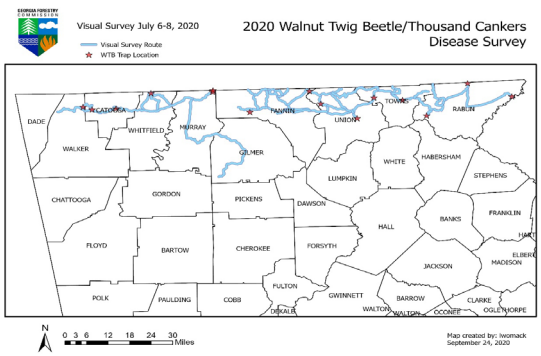


Hemlock Woolly Adelgid Predator Release Sites

Thousand Cankers Disease:

The Georgia Forestry Commission Forest Health staff has been concerned about the spread of the walnut twig beetle (*Pityophthorus juglandis*) and the associated thousand cankers disease since its introduction near Knoxville, Tennessee in 2009. GFC deployed pheromone traps for Walnut Twig Beetle in north Georgia counties from 2012 to 2017 with no positive samples. GFC resumed trapping in 2019, placing traps in 15 locations in counties bordering Tennessee and North Carolina, also with no positive samples. Trapping once again continued in north Georgia in 2020 with 15 traps in this area.

From July 6-8, 2020, GFC conducted visual surveys for thousand cankers disease and over 384 miles across north Georgia was surveyed with 2,033 black walnut trees noted along the routes. Trees showing multiple twig or branch level die-back were inspected more carefully. No suspected TCD was found on these routes.

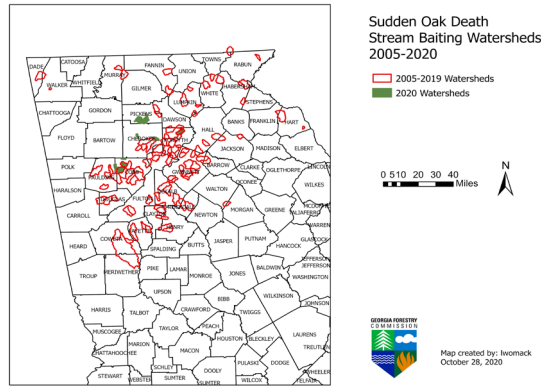


Walnut Twig Borer Survey Sites

Sudden Oak Death:

In 2020, the Georgia Forestry Commission continued its early detection surveys for Sudden Oak Death (SOD) for the 16th year. Ten north Georgia watersheds were sampled for the presence of the pathogen *Phytopthora ramorum.* Sampling targeted watersheds that include Georgia's past positive nursery sites and watersheds that have abundant new residential development in the metro Atlanta area. Six new early detection watersheds that have had no early detection sampling to date were selected. Four early detection watersheds were revisited in 2020.

In addition, Stream-baiting continued in two watersheds that have produced multiple positive stream samples in past years. All stream sampling in 2020 was done using the bottle of baits (BOB) method. Due to COVID-19, no spring samples were taken. Four 2020 samples will be completed from September through November 2020.

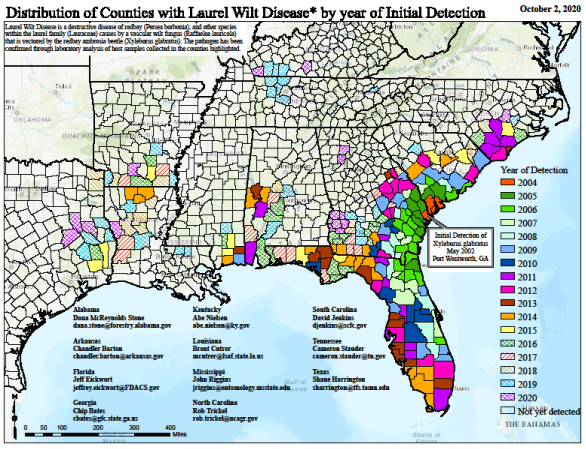


Sudden Oak Death Survey Sites

Laurel Wilt Disease:

Laurel wilt disease was introduced at the Port of Savannah in solid wood packing material. The first redbay ambrosia beetle was detected in an Early Detection Rapid Response monitoring trap in Garden City, GA in 2002 and dead redbay trees were evident near the coast in GA and SC by 2004.

The spread of Laurel wilt disease throughout the southeastern United States has been charted since 2005 with updates made quarterly to the USDA Forest Service Southern Region website under Forest and Grassland Health (Spot Lights).

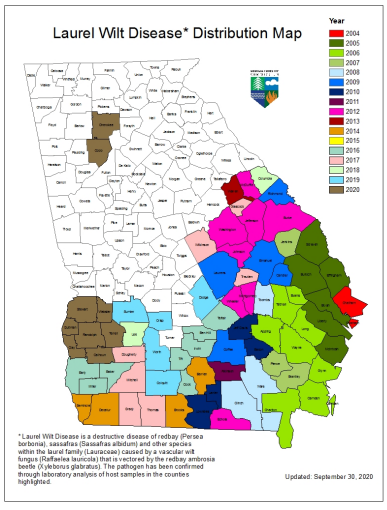


Laurel Wilt Disease in the United Sates

As of September 2020, LWD had been confirmed in 73 counties in Georgia. Positive laurel wilt disease detections were made in sassafras in nine counties including Calhoun, Clay, Randolph, Terrell, Quitman, Stewart, Webster, Cobb and Cherokee.

The Forest Health Staff began assisting Dr. Bud Mayfield, USDA Forest Service, Southern Research Station, with his project "Monitoring Spread and Impact of Laurel Wilt in Sassafras Beyond the Gulf-Atlantic Plain." Sassafras sites were located in the Coastal Plain and Piedmont regions. A Lindgren funnel trap (8-unit) and triple-vane panel trap with wet-style cups were deployed on each site. Traps were deployed from early summer through September. These traps were monitored every two weeks and insect specimens were sent to Dr. Mayfield for identification.

Additional information on LWD can be found at the Georgia Forestry Commission home page: Laurel Wilt Disease Information, and the USDA Forest Service Laurel Wilt website: National Laurel Wilt Disease Progression Map.



Laurel Wilt Disease in Georgia

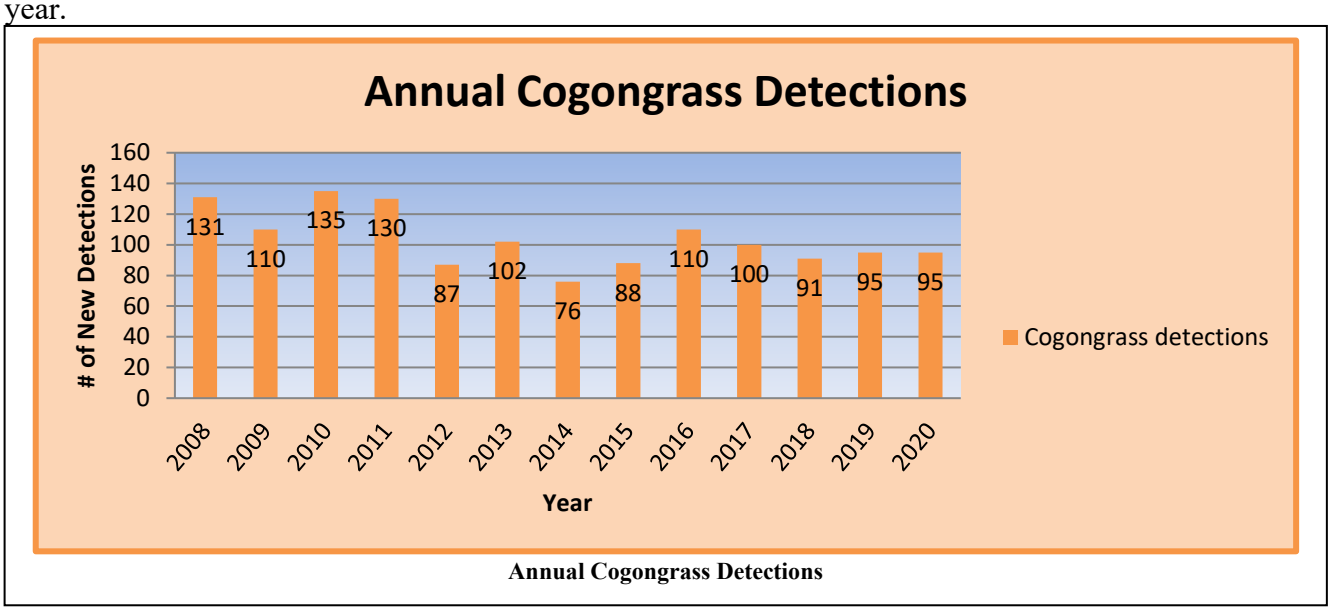
Invasive Weeds:

Cogongrass

Although many invasive plants cause problems within Georgia, the majority of our efforts have focused on cogongrass. All known cogongrass infested sites are being treated by the Georgia Forestry Commission.

In 2008, the GFC coordinated 23 state, federal and private partners to sign an agreement to establish the entire state of Georgia as a Cooperative Weed Management Area for cogongrass. This "Cogongrass Task Force" lead the education efforts that have paid dividends in initial cogongrass reports across the state. Statewide, forest health training was provided to foresters, resource managers, loggers, public works departments (state and county), nurseries, regulatory agencies, landowners and at field days on 31 occasions, with 31,357 attendees reached.

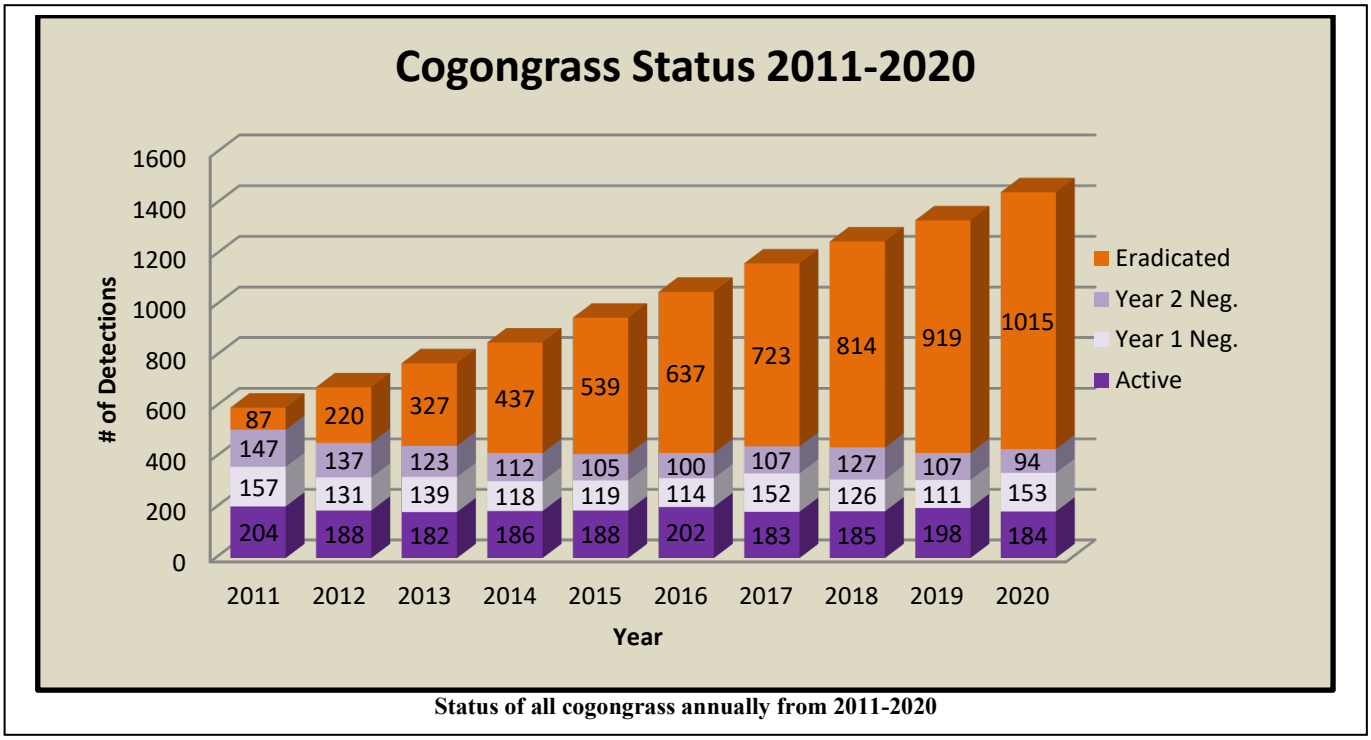
There have been 95 new cogongrass infestation sites reported and treated by the GFC during this fiscal year.



Annual Cogongrass Detections

The GFC continues to treat all new sites with forestry herbicides, normally imazapyr and/or glyphosate, at no cost to landowners.

Cogongrass has now been found in **69** Georgia counties, involving **1,446** sites. **Berrien, Morgan, Polk and Pulaski** Counties were new counties in which cogongrass was detected for the first time in 2020. In Georgia, **368 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. Based upon post-treatment inspections, approximately **87%** 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 eradicated. There are **153** sites in Georgia that have shown one year of negative post inspection, **94** sites that have shown two years of negative post inspection and **1,015 sites have been declared eradicated**.



Status of all cogongrass annually from 2011-2020

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, and the most active counties over the past several years are Decatur, Early, Grady, and Thomas.

In an effort to increase public awareness and education, an information newsletter is posted semi-annually on the GFC website 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.

The Georgia Forestry Commission web site provides more cogongrass information. Click the link Cogongrass Information

Dirty Dozen List of Invasive Weeds:

2020 was our twentieth year working with the Forest Inventory and Analysis (FIA) teams developing data that provides a defendable ranking of invasive plants. These are the 12 worst non-native invasive plant species that aggressively compete with and displace native communities across Georgia. This "Dirty Dozen" list as a criterion for the **Invasive Plant Control Cost Share Program.**

The Georgia Forestry Commission web site provides more Invasive plant information. Click the link Dirty Dozen List of Nonnative Invasive Plants

FOREST HEALTH
PROGRAM
GEORGIA FORESTRY COMMISSION

2019 Dirty Dozen List

Top Nonnative Invasive Plants in Georgia

Rank	Species	2017 Acres	2009 - 2015 Average Acres	Percent Change	Trend
1	Nonnative privet	644,317	**679,897**	-5%	Stable
2	Nepalese browntop	90,204	**97,688**	-8%	Stable
3	Chinaberry	47,757	**59,659**	-20%	Decreasing
4	Nonnative lespedeza	35,862	**40,586**	-12%	Decreasing
5	Kudzu	30,961	**37,433**	-17%	Decreasing
6	Chinese tallowtree	24,321	**15,066**	61%	Increasing
7	Japanese climbing fern	19,978	**19,428**	3%	Stable
8	Nonnative olive	19,456	**19,248**	1%	Stable
9	English Ivy	12,981	**8,581**	51%	Increasing
10	Mimosa	11,647	**15,066**	-23%	Decreasing
11	Trifoliate Orange* *New addition in 2019	8,600	**3,404**	153%	Increasing
12	Wisteria	7,874	**8,498**	-7%	Stable
Cogongrass Control Efforts (Acres)(11/18/2020)		373	**Decreasing - 235 Acres** of the 373 acres of cogongrass, in Georgia, are reported as inactive or eradicated.		

The Georgia Forestry Commission documents all known cogongrass infestations. Since 2007, cogongrass has been detected in 65 counties, and 27 of those 65 counties are now free of cogongrass. Georgia's proactive treatment program assists landowners across the state, and 84% of all known cogongrass spots in Georgia are considered inactive or eradicated.

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.

The Dirty Dozen List of Nonnative Invasive Species is ranked by the total acres occupied according to Forest Inventory and Analysis data. Honey suckle and fescue are not included in this list.

Trends:
Stable (0 - 10% Change) / Increasing or Decreasing (>10% change)

2019 Dirty Dozen List of Nonnative Invasive Plants

Invasive Plant Species Control Program:
Strategies to address the onslaught of invasive species and their control is an escalating issue. The Forest Health staff partnered with the USDA Forest Service, the University of Georgia, and other state, local and federal agencies to educate the public about the harm nonnative invasive plants can cause in Georgia. Regional and local programs have been conducted during the past year to bring relevant and current information to Georgia landowners and our federal and state partners.

From 2011 to 2018, GFC's Invasive Plant Cost Share Program helped 320 landowners treat 9,977 acres. Georgia's efforts focused on non-native privet, Japanese climbing fern, Chinese tallow tree, chinaberry and non-native rose.

In June of 2019, $150,000 in funding was offered to landowners statewide for invasive species control. Georgia Forestry Commission foresters completed 52 contracts for a total of $150,126 (2,502 acres). This is the second year that Callery pear has been included on the list, and six contracts totaling 314 acres of Callery pear were treated. Again, the majority of the contracts were for controlling non-native privets. With nine years of Invasive Plant Cost Share programs, we have now surpassed 12,479 acres of invasive plant species removed from the landscape.

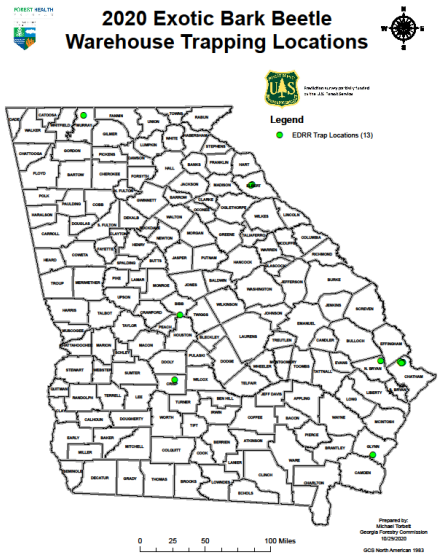
In May of 2020, a new ArcGIS Survey 123 program was implemented to improve customer service, streamline reporting and track data spatially. For the first time, landowners were able to complete applications electronically (through the GFC public website). This new process makes ranking and determining priorities more efficient and includes features that allow tracking and managing treatment areas spatially.

In June of 2020, another $50,000 was offered to landowners for invasive species control with priority going to the 11-county Coastal Georgia Cooperative Invasive Species Management Area (CoGa CISMA) and the 28-county area declared a State of Emergency from Hurricane Michael. Once again, the cost share rate is $60 per acre, with a maximum of 75 acres per landowner, for a maximum of $4,500. As of October 2020, foresters collected 33 contracts for a total of $49,986 (833 acres). These contracts are to be completed by April 1, 2021.

Early Detection Rapid Response:
In 2020, the Georgia Forestry Commission performed early detection insect trapping around facilities accepting international cargo with solid wood packing material (SWPM).

During the annual warehouse survey, 12 sites were selected across the state to establish a total of 48 Early Detection Rapid Response (EDRR) traps and Cooperative Agriculture Pest Survey (CAPS) traps. Twelve Lindgren funnel trap sites (48 traps) were deployed in six Georgia locations, including the areas of Macon, Cordele, Elberton, Savannah, Crandall and Brunswick, for the detection of nonnative exotic bark and ambrosia beetles.

In 2020, 72 warehouse visits were conducted across the state, which was drastically down from last year due to the Covid-19 outbreak that prevented us from visiting previous and new warehouses. There were no new suspect pests collected in 2020.
In 2021, early detection traps will be established near these warehouse sites, again, to identify populations of nonnative pests.



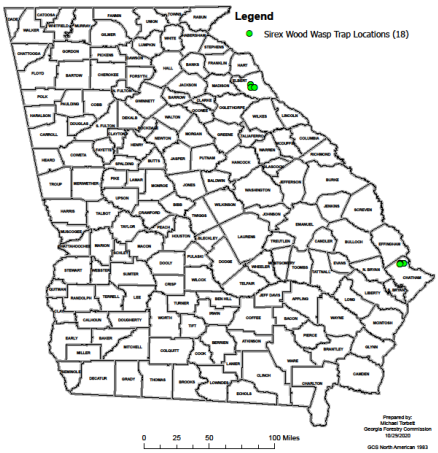
Early Detection Rapid Response Trap Locations

First Introduction to Georgia:

Insects that have been identified as new first introduction to the United States, in recent years, are screened for and identified. *Xyleborinus artestriatus*, 2010, *Ambrosiophilus peregrinus,* 2014, and *Xyleborinus andrewesi* were new introductions to the United States discovered through the warehouse surveys.

Sirex / Tremex Woodwasp

Both Sirex woodwasp (*Sirex noctilio*) and Tremex woodwasp (*Tremex fuscicornis*) continue to be targets for our Early Detection program. The Sirex woodwasp poses a threat to all of Georgia's southern yellow pines and warrants monitoring through our Early Detection Rapid Response protocols. *This* trapping is conducted in conjunction with trapping for Tremex woodwasp, which was identified during warehouse trapping in Elberton, Georgia in 2012 as a new first introduction to the United States. Trapping began in June, with 24 traps established (12 Sirex traps and 12 Tremex woodwasp). Traps were inspected every two weeks and suspect catches were identified in Athens, Georgia. Trapping was completed the first week of October.



Sirex / Tremex Woodwasp Trap Locations

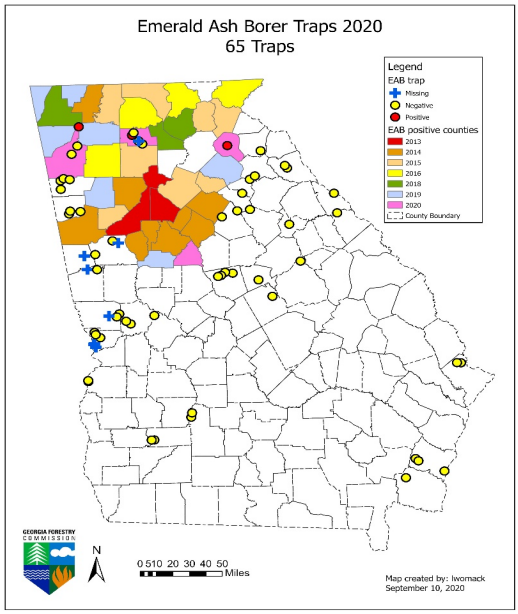
Tremex woodwasp has the potential to cause severe damage to healthy hardwood trees of importance in agriculture, arboriculture and forestry in Georgia, and the host list of potential species is very close to our north Georgia native hardwood forest.

Both of these new pest introductions illustrate that increased global trade carries with it new challenges for our forest health program and emphasizes the importance of our early detection programs. No Sirex noctilio or Tremex woodwasp have been captured to date.

Emerald Ash Borer:

Emerald Ash Borer was introduced in Detroit, Michigan in 2002 and has since been detected in 36 states and Canada. Georgia has been part of a nationwide trapping program to document the presence of this forest pest since 2004.

Emerald ash borer was first discovered in Georgia in DeKalb and Fulton Counties in July 2013, and additional insects/counties were detected in 2014, 2015, 2016, 2018,2019, and 2020 bringing the total number of Georgia Counties to 37. No new infested counties were detected during the 2017 survey. In 2020, three new positive EAB identifications in Banks, Floyd and Pickens Counties were found in purple prism traps and one new positive EAB identification was found in Butts County from a sample collected at a log yard. The counties now known to have EAB are: **Banks, Barrow, Bartow, Butts, Carroll, Catoosa, Chattooga, Cherokee, Clayton, Cobb, Dade, Dawson, DeKalb, Douglas, Fannin, Fayette, Floyd, Fulton, Gilmer, Gordon, Gwinnett, Habersham, Henry, Jackson, Lumpkin, Murray, Newton, Paulding, Pickens, Rabun, Rockdale, Spalding, Union, Walker, Walton, White, and Whitfield.**



Emerald Ash Borer Traps 2020

Gypsy Moth Survey:

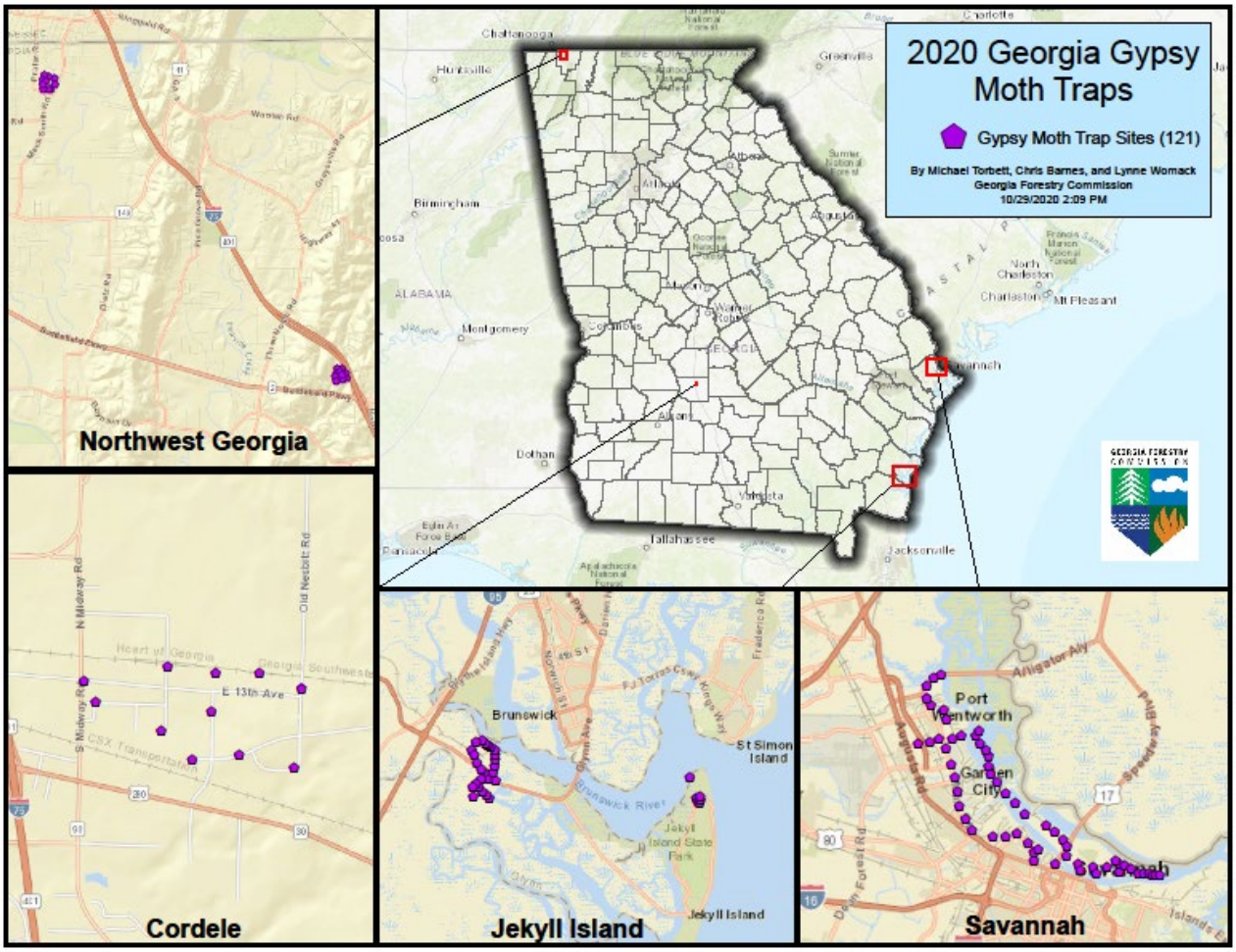
Gypsy moth is a serious forest pest capable of causing severe damage to hardwood trees, especially oaks. In cooperation with the USDA Animal and Plant Health Inspection Service (APHIS), the Georgia Forestry Commission deploys traps to detect the presence of gypsy moth. *The Asian gypsy moth is not established in Coastal Georgia or any other location in the United States and this multi-agency annual gypsy moth survey was conducted as a proactive effort to detect the presence of gypsy moth in the Savannah area.*

On September 25, 2015, a single, adult male Asian gypsy moth was identified in an early detection trap near the Port of Savannah in Garden City, Georgia. At the end of a three years of delimit trapping project on September 12, 2018, the survey was completed and there were no additional Asian gypsy moths caught. However, with the continuous threat of Asian gypsy moth coming in through the Ports of Georgia, 60 traps were installed around the outside of the port in May 2020. There were no Gypsy moths caught from any traps in the Savannah area in 2020.

In addition to trapping Asian gypsy moth in the Savannah area, the Forest Health Management team also established gypsy moth traps inside the Port of Brunswick and at the camp ground on Jekyll Island. There was one European gypsy moth caught in 2020 at the campground on Jekyll Island, and no positive Asian gypsy moth was detected in this area in 2020.

In addition to the trapping done at the ports, there were 20 additional traps installed at key campgrounds in north Georgia along major interstates to catch possible "hitch hikers" coming from other states. There were also 11 additional traps installed at the intermodal yard in Cordele, which receives containers from the port in Savannah. There were no gypsy moths caught from any of these traps in 2020.

May 2021, the GFC will establish approximately 100 traps in the vicinity of the Port of Savannah to continue monitoring for any possible Asian gypsy moth. These areas will be monitored, due to their high risk for pest introduction into the state.



Gypsy Moth Trapping 2020