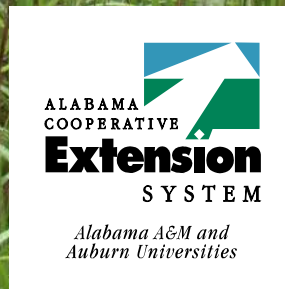


# Cogongrass (and tallowtree) Identification and Control

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**School of Forestry and Wildlife Sciences**  
**Auburn University**







**cogongrass**  
(*Imperata cylindrica*)

Federal Noxious Weed





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- Displaces native plants
- Poor wildlife habitat
- Extreme fire hazard
- Reduces forest productivity
- Susceptibility to pine decline?





Photo: Patrick Waldrop, AFC



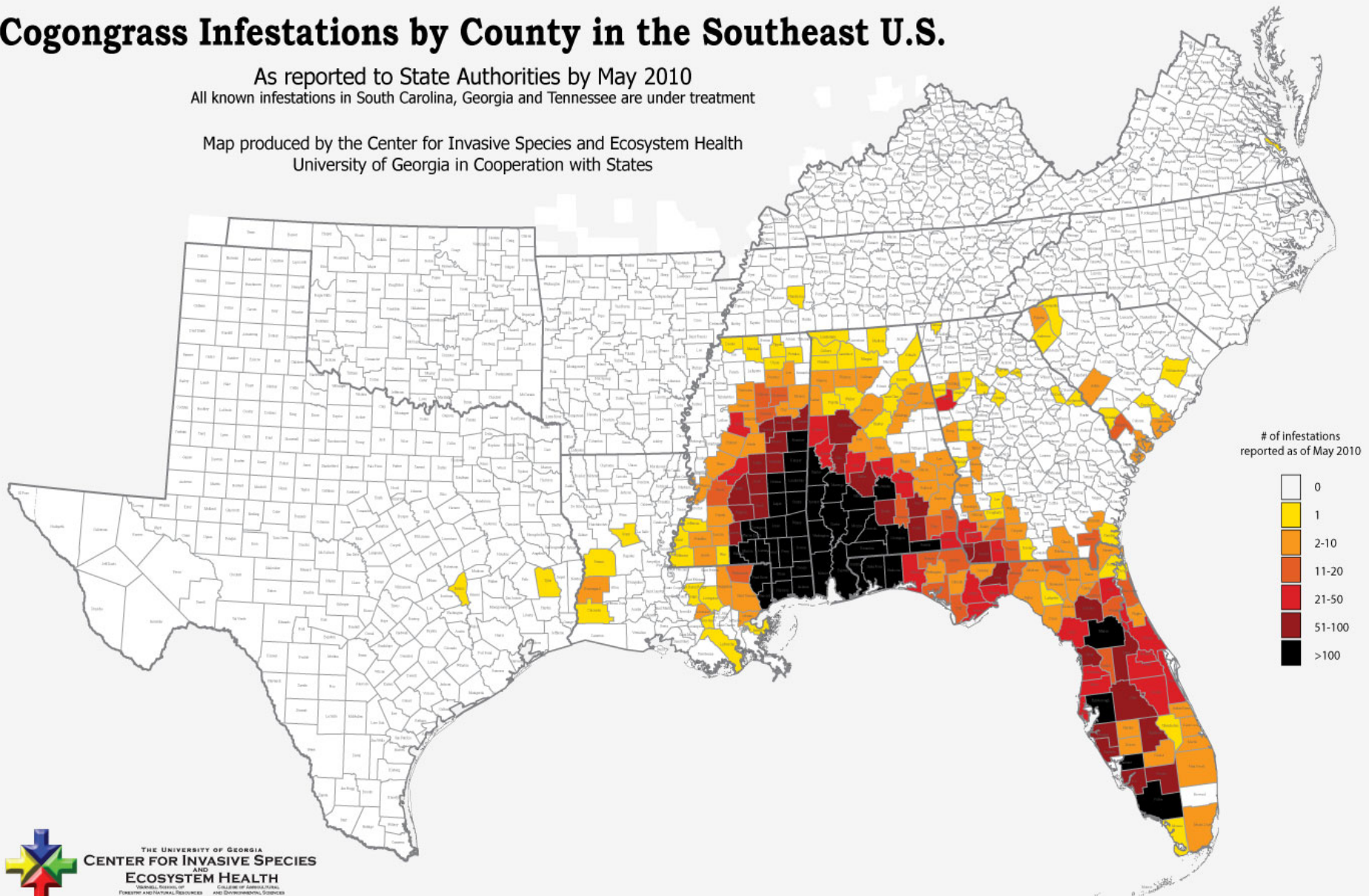




# Cogongrass Infestations by County in the Southeast U.S.

As reported to State Authorities by May 2010  
All known infestations in South Carolina, Georgia and Tennessee are under treatment

Map produced by the Center for Invasive Species and Ecosystem Health  
University of Georgia in Cooperation with States



First introduced into Grand Bay, AL in 1912



**cogongrass identification**













- ☀ Showy white flowers
- ☀ 2-8 inches long
- ☀ Blooms in the spring  
(or after disturbance)





Just-opened cogongrass flowers are often more purple than white.





## Rhizomes

- ✿ Very sharp points
- ✿ Segmented
- ✿ Papery scales
- ✿ Dense and matted
- ✿ > 50% of biomass









UGA2308083



**Cogongrass burns very hot! Even fire-adapted plants such as longleaf pine can be killed by cogongrass fires.**





## ☼ Leaves

- ☼ Yellowish green
- ☼ 0.5-1 inch wide, serrated edge
- ☼ No obvious stem
- ☼ Dense winter thatch

## ☼ Flowers

- ☼ 2-8 inches, bright white
- ☼ Wind-dispersed seed
- ☼ Spring (March-June)

## ☼ Rhizomes

- ☼ Very sharp points
- ☼ Segmented with papery scales

## ☼ Form

- ☼ Often in circular patches
- ☼ Dense growth (not a bunch grass)
- ☼ 1-5 feet tall





# Grasses that can look a bit like cogongrass



**Johnson grass**  
(*Sorghum halepense*)



**Vasey grass**  
(*Paspalum urvillei*)





**Silver beardgrass**  
(*Bothriochloa laguroides*)



**Broomsedge**  
(*Andropogon virginicus*)





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**Yellow Indiangrass** (*Sorghastrum nutans*)



# Yellow Indiangrass



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Yellow Indiangrass blooms in the fall

Distinctive ligule

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©UK Marlow



cogongrass

©Jean Everett



# Cogongrass spread





# Cogongrass dispersal via rhizomes



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# Cogongrass seed dispersal

- ✿ wind
- ✿ vehicles
- ✿ equipment
- ✿ clothing
- ✿ agronomic products





A person wearing a white cap, light-colored long-sleeved shirt, and dark pants is standing in a forest. They are holding a spray wand connected to a blue backpack sprayer. The forest floor is covered with tall, dry, yellowish-brown cogongrass. In the background, there are many tall, thin pine trees with green needles. The sky is visible through the tree canopy.

**cogongrass research and control**



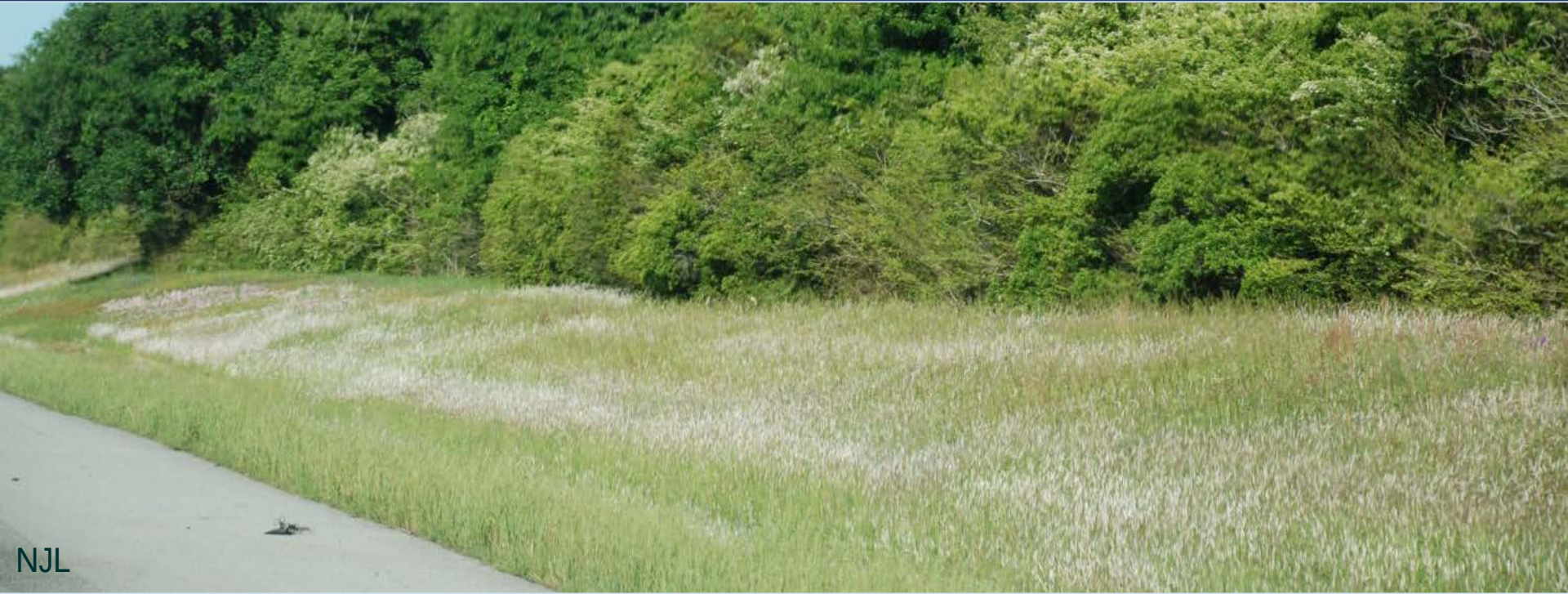
# Cogongrass Control with tillage

- ✱ Repeated, frequent tillage that breaks up the rhizome mass followed by glyphosate is effective
- ✱ Infrequent tillage spreads cogongrass
- ✱ Clean equipment after tillage to prevent rhizome spread





# Cogongrass and Mowing



- ✿ Suppression only
- ✿ Stimulates flowering
- ✿ Do not mow during flowering!



# Cogongrass and grazing



- ✿ cogongrass unpalatable to most grazers
- ✿ suppression only



# Cogongrass and burning



☼ Fire cannot be used for control

☼ Fire can be used to reduce  
thatch before chemical  
treatments

☼ But use caution!





# Cogongrass Control with Herbicides

- ✿ **Glyphosate** (Accord, Roundup, Glypro, ...)
  - ✿ 3-4 lb ai/A broadcast
  - ✿ 2-5% v/v spot
- ✿ **Imazapyr** (Arsenal, Arsenal AC, Chopper Gen 2, ...)
  - ✿ 0.5-1 lb ai/A broadcast
  - ✿ 0.5-2% v/v spot
- ✿ **Glyphosate + Imazapyr**



# Summary of herbicide control



- One application per year of glyphosate can control cogongrass, but it will take longer
- Two applications per year of glyphosate is more effective
- Imazapyr is consistently more effective than glyphosate (but soil residual activity and sensitivity of hardwoods and longleaf pine is potential issue)
- Combining glyphosate with imazapyr did not provide better control than either used alone
- Some sites are easier to control than others
- Cogongrass can be eradicated on individual sites





## OBJECTIVES

- Impacts of cogongrass invasion on insect communities of southeastern pine forests
- Influence of cogongrass management strategies on insect diversity and abundance
- Influence of cogongrass on pine tree susceptibility to pine decline

Collaborators: Stephen Enloe, David Held, Lori Eckhardt

Funding : USDA-CSREES-AFRI

Biology of Weedy and Invasive Species Competitive Grant Program



# LOBLOLLY PINE DECLINE

- Increasingly important issue in Southeast
- Caused by a complex of abiotic and biotic stressors
- Stressed trees attract root-feeding bark beetles
  - *Hylastes salebrosus*
  - *Hylastes porculus*
  - *Hylastes tenuis*
  - *Dendroctonus terebrans*
  - *Hylobius pales*
  - *Pachylobius picivorus*



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## COGONGRASS AND PINE DECLINE

- Does cogongrass increase tree stress?
- Does cogongrass impact bark beetle population levels?
- Does cogongrass increase susceptibility to pine decline?





## PRELIMINARY CONCLUSIONS

- Ecologically based integrated treatment
  - Seeding alone had little impact on cogongrass cover
  - Seeding, when combined with burning and glyphosate treatments, may contribute to control and restoration efforts
- Response of insect communities to cogongrass and its treatment is as yet unclear
- Several root feeding beetles were found in greater abundance in cogongrass infested pine stands
  - ~10% were infected with the fungi associated with pine decline
  - more tree roots had fungal infections in infested plots
  - no overt signs of pine decline in the stands



**control recommendations**



# Avoid cogongrass

- ✿ Do not enter infestations when seed heads are present.
- ✿ Do not work in cogongrass when soil is muddy.
- ✿ Do not grade or push roads or fire lines through cogongrass.
- ✿ Do not use contaminated fill dirt.





# Remove cogongrass hitchhikers

## CLEAN

- ✱ vehicles
- ✱ equipment
- ✱ clothing

**BEFORE** moving to an  
uncontaminated site





# Avoid planting it in your yard



**Japanese blood grass 'Red Baron'**  
... a cultivar of cogongrass





- ☼ **Treat as soon as possible ...  
the smaller an infestation is,  
the easier it is to control.**
- ☼ **Destroy the entire plant ...  
the rhizomes will re-sprout.**
- ☼ **Don't do anything just once ...  
you will only make it mad!!**





# Monitor and Restore

- ☀ Monitor site for re-growth or new arrivals
- ☀ Establish and/or release fast-growing native plants ...
  - ☀ stabilize and protect soil
  - ☀ outcompete, shade out any surviving cogongrass
  - ☀ prevent new cogongrass or other invasive plants from getting established



# Cogongrass

## *Imperata cylindrica*

[Identification](#) | [Control](#) | [Distribution](#) | [Proceedings](#) | [Publications](#) | [Images](#) | [Videos](#) | [Report](#) | [Links](#)



### Cogongrass Infested States

Click on State to find State Resources



#### Georgia County Road Crew Training Resources



Information and resources for Georgia Extension agents to conduct a short informational training program for their county road crews.

[More](#)

#### The Cultivar 'Red Baron'?



The 'Red Baron' cultivar of *Imperata cylindrica* has bright, showy, blood-red leaf edges. It is frequently sold across the U.S. in plant nurseries and is

#### Alabama Cogongrass Aerial Photographs



In open fields and forests cogongrass initially forms circular infestations that appear light green in summer and light brown in winter as can be viewed in these oblique aerial photographs. In later stages of invasion, circular infestations can merge and linear infestations can form along highways, fences, and around water bodies. [More](#)

#### Identification Field Guide



Cogongrass has a unique combination of

#### News

[Cogongrass confiscated at Savannah port](#)

[Six Million for Cogongrass in Alabama](#)

[Florida Cogongrass Cost-Share Program](#)

[More News from the Bugwood Blog](#)

#### Supported by:



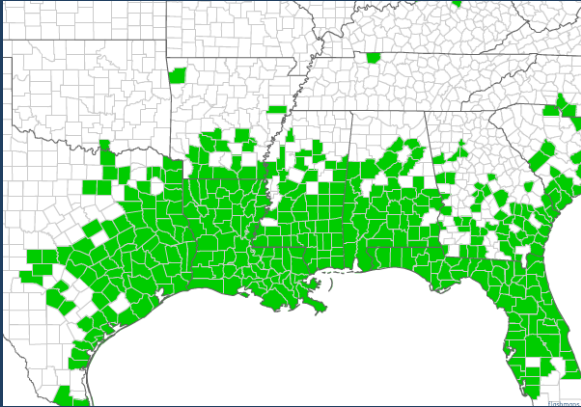
#### Partners:





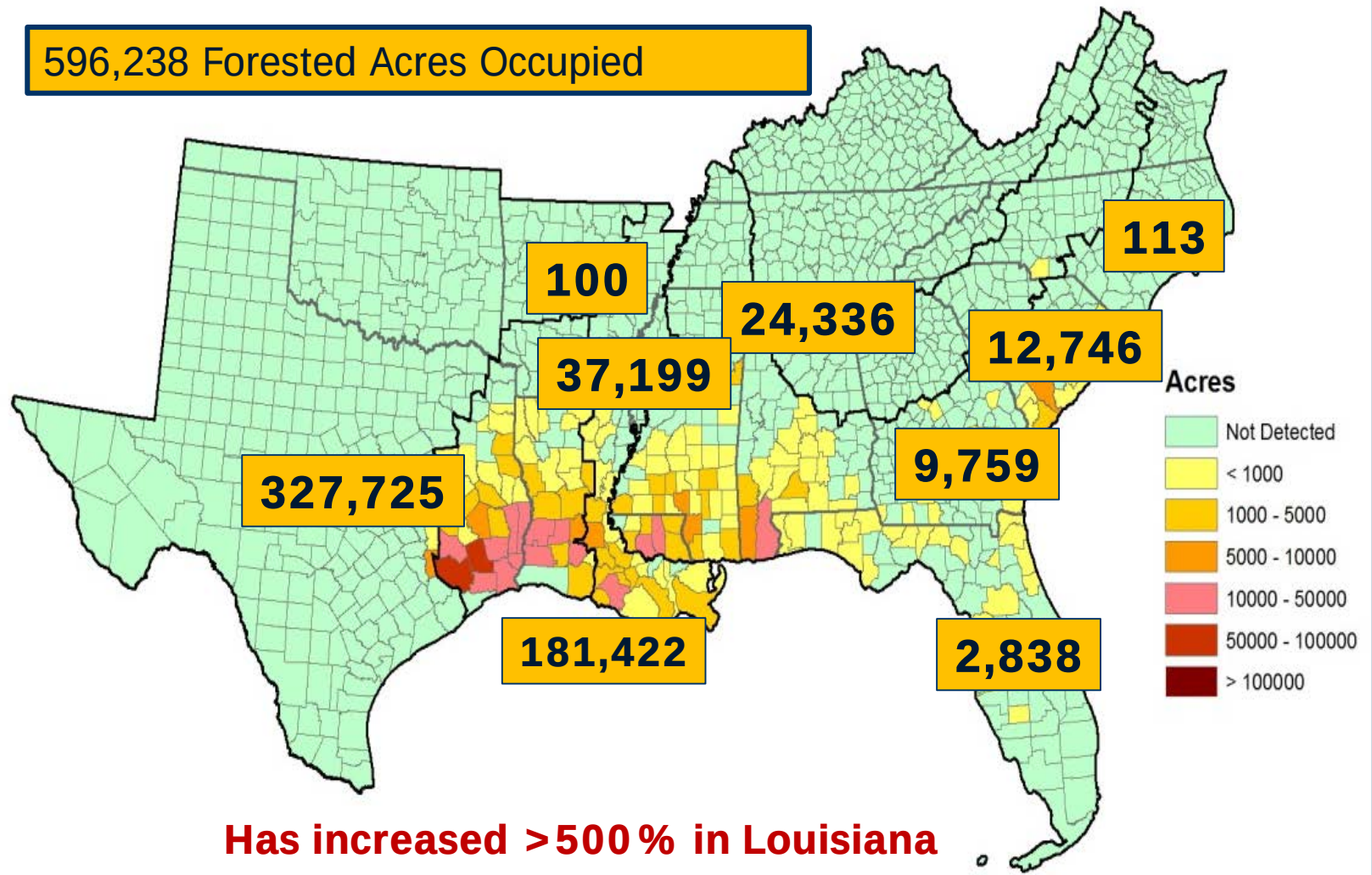
# Chinese tallow tree, popcorn tree

(*Triadica sebifera*)



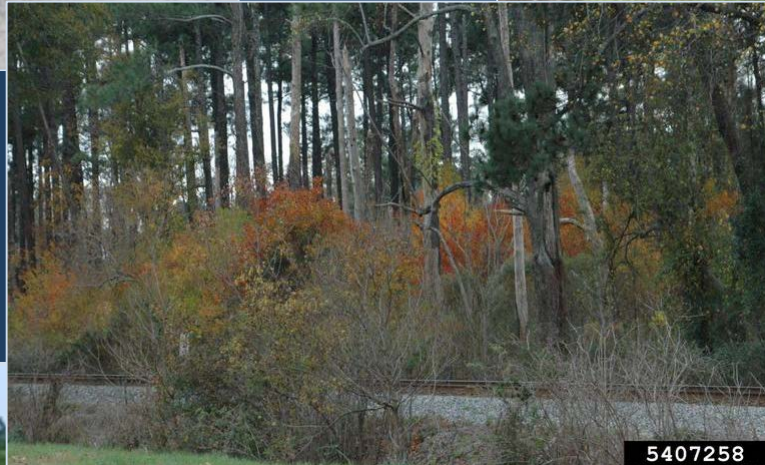


# Chinese tallowtree, popcorn tree



~ 2000 acre increase in AL since 2008



















2012 JOINT MEETING

SE-EPPC & ALIPC



Past, Present & Future  
Invasive Plants in the Southeast

May 8-10  
Auburn, AL

<http://www.se-eppc.org/2012/>





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