# Cogongrass Seed Production Across Alabama and Georgia

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# cogongrass
## (*Imperata cylindrica*)

**Federal Noxious Weed**



- Perennial grass (1-5') often growing in dense mats
- Often in circular infestations
- Long yellowish-green leaves with off-center midvein and scabrous edges
- No apparent stem
- White fluffy 2-8" flower, March-June
- Rhizomes segmented, sharp-tipped and white-scaly
- Full sun - partial shade
- Highly flammable
- Invades ROWs, pastures, forests, old fields, urban …

UGA photos courtesy of www.invasive.org

# Cogongrass spread

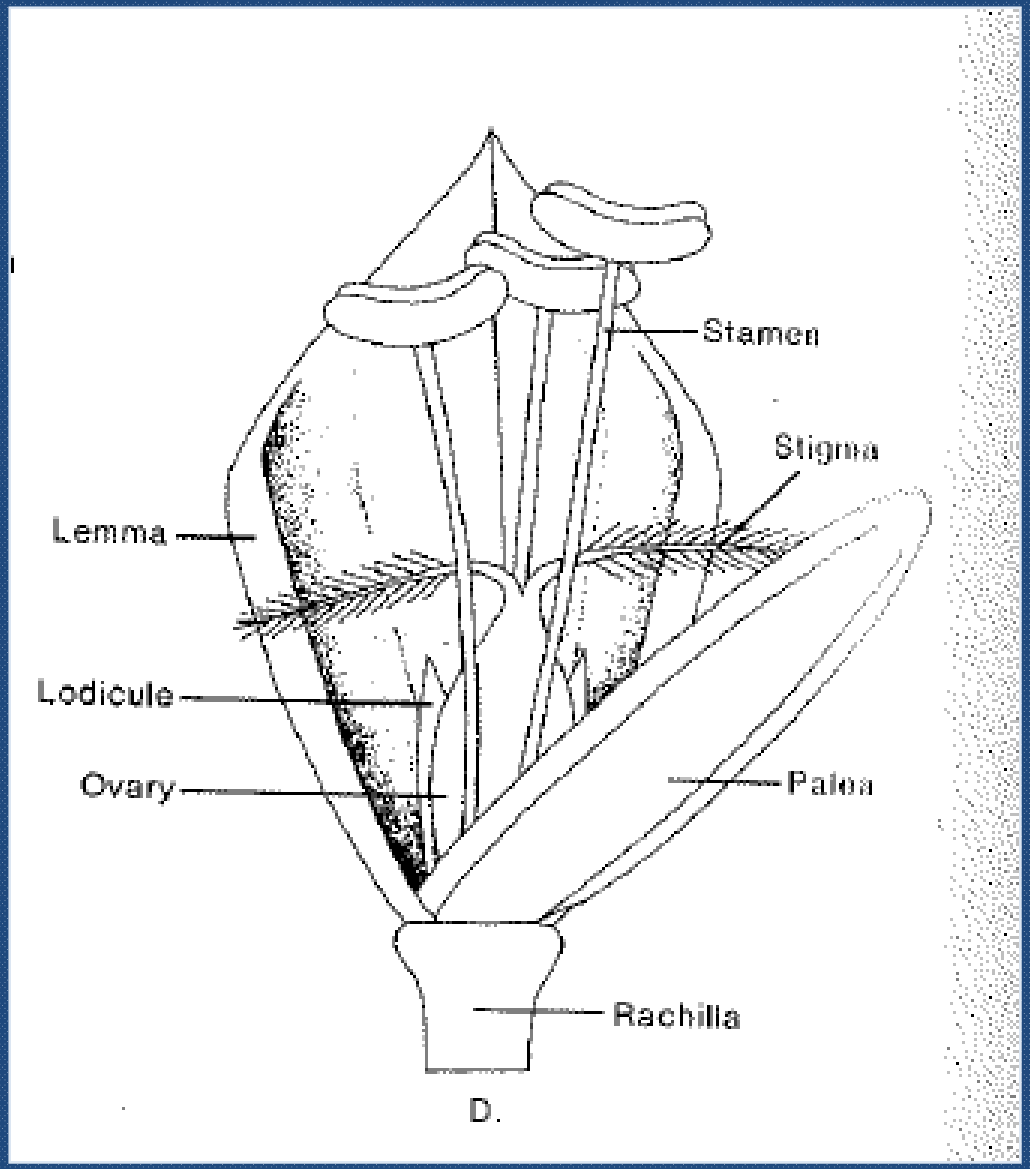
# Cogongrass seed dispersal

- wind
- vehicles
- equipment
- clothing
- agronomic products

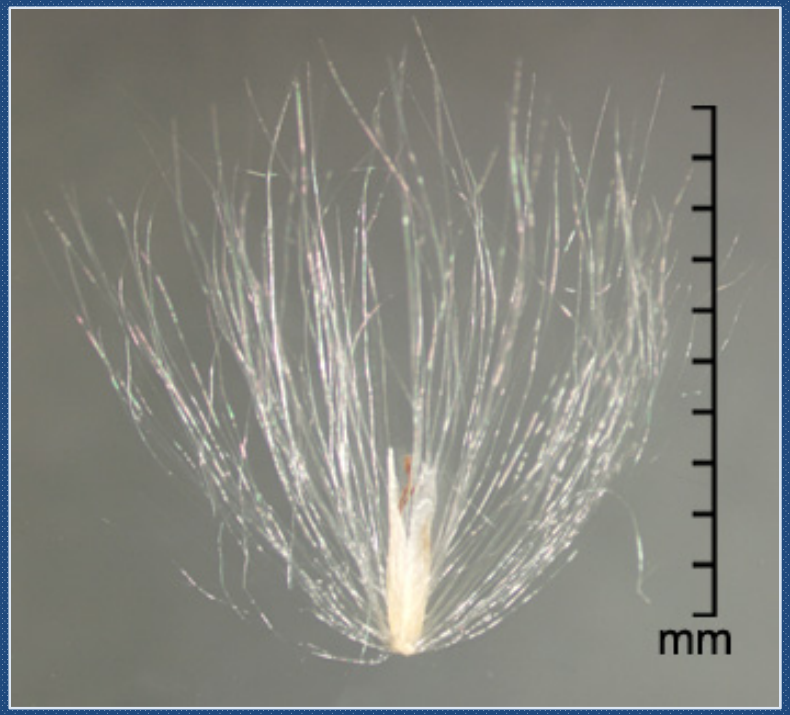

# What do we know?

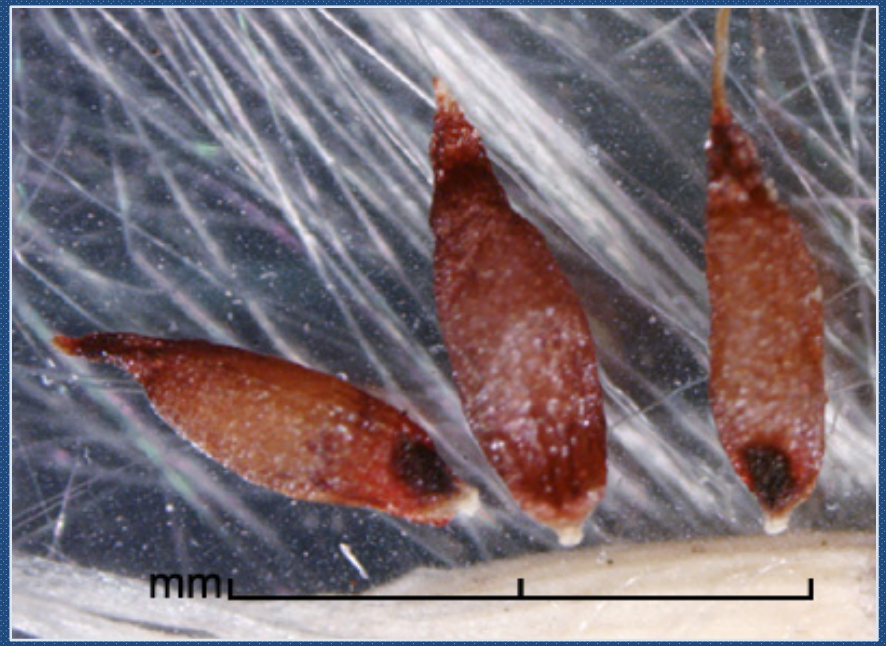
- Capable of prolific flowering
- Obligate outcrosser … must cross pollinate with plant of different genetic material
- Seed fill generally fairly low
- High germination rate
- Seed longevity not high

- Are there regional differences in cogongrass seed production?
- Do outlying populations of cogongrass produce viable seed?




Vascular Plant Taxonomy, 3rd Edition, Walters & Kiel




Federal Noxious Weed Disseminules of the U.S.

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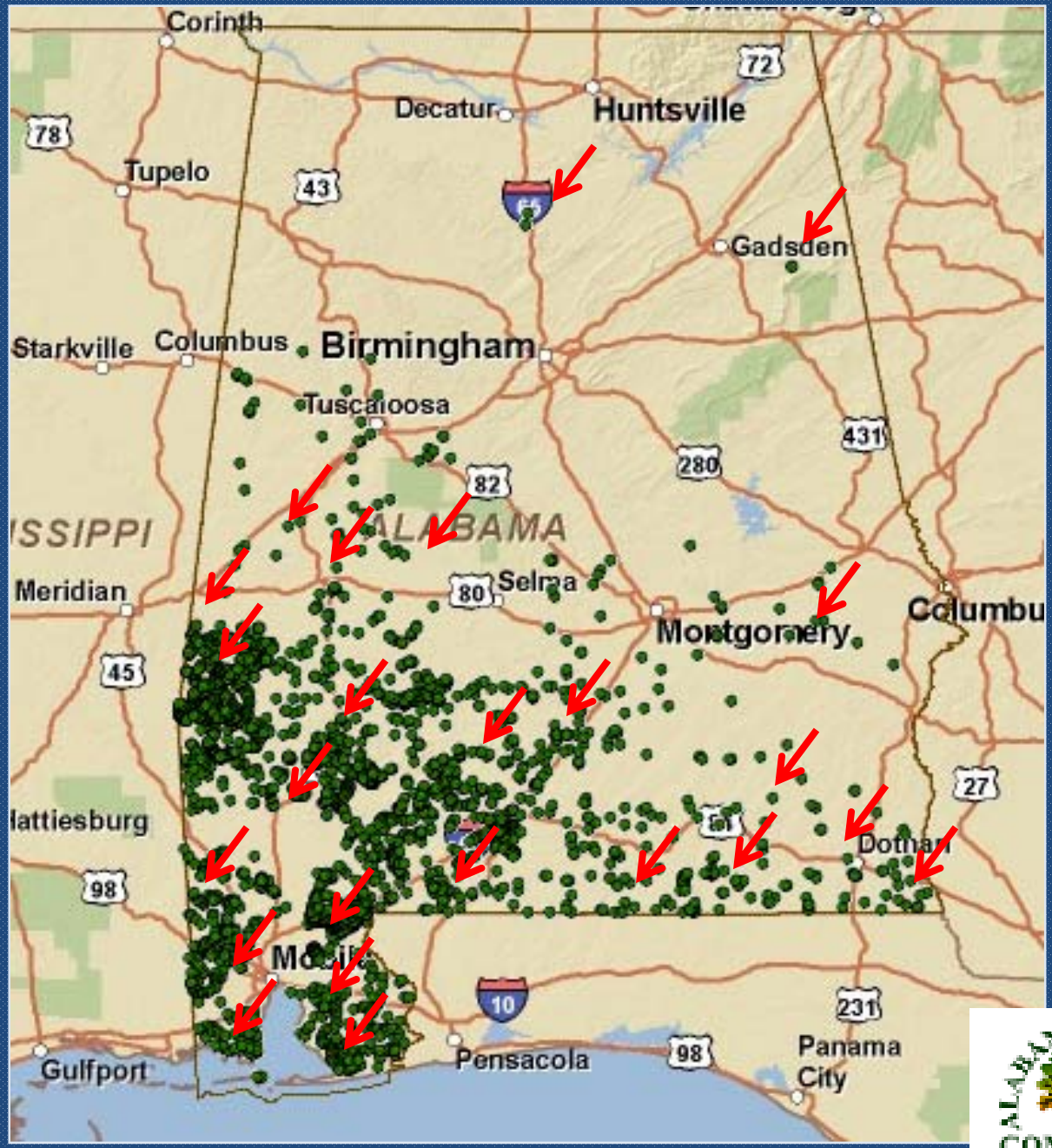
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Tupelo
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Gadsden
Starkville
Columbus
Birmingham
Tuscaloosa
431
280
82
ISSIPPI
ALABAMA
Meridian
80
Selma
Montgomery
Columbu
45
27
lattiesburg
65
Dothan
98
Mobile
10
231
Gulfport
Pensacola
98
Panama
City

Germination trial

- 5 panicles (seed heads) per site
- length of panicle
- maturity of panicle


3 –anthers and stigmas, not shattering


2 – stigmas, few anthers, beginning to shatter

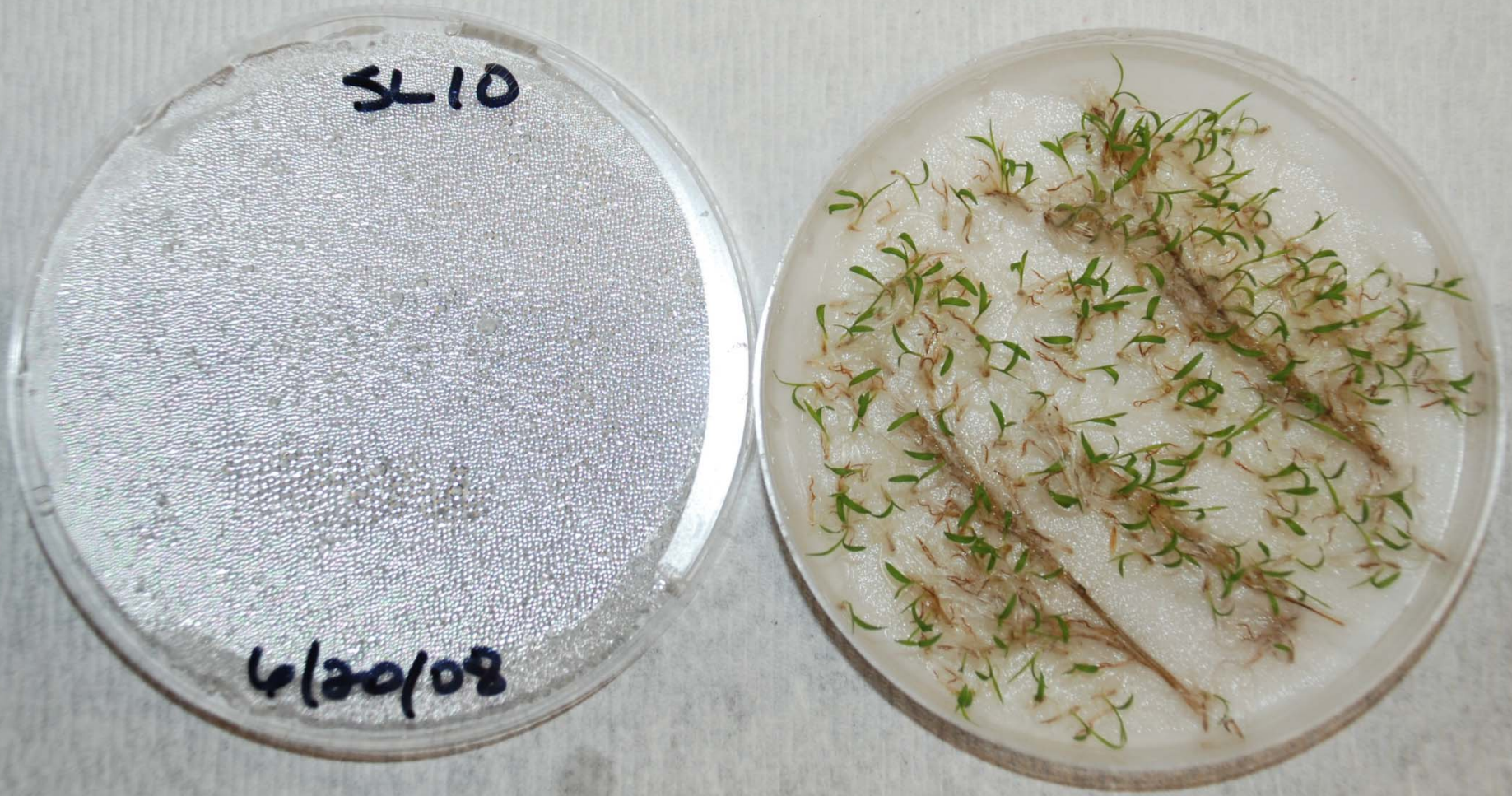

1 – few stigmas, shattering


- Lined 9 cm petri dish with filter paper
- Moistened paper with deionized water
- Placed panicle in the plate, spreading the florets out with dissecting needles
- Sealed plate with Parafilm and placed in growth chamber

- 16 hr light, 8 hr dark
- 30 C/20 C
- 2 weeks

18
6/5/08


124 5/30/08


SL10
6/20/08

N=5
Range: 0-172

N=0

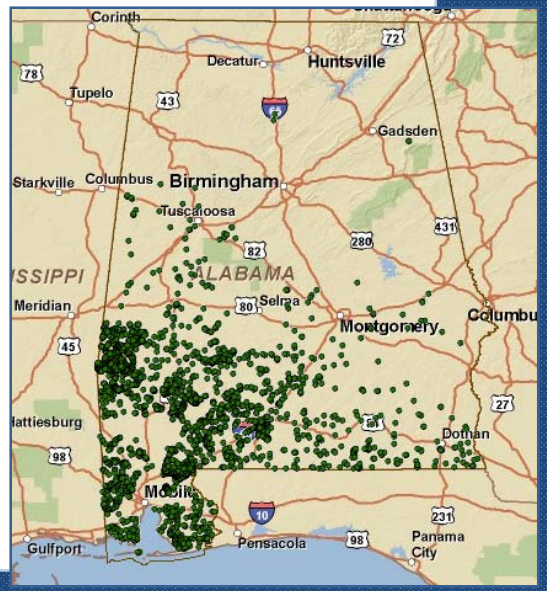
N=2
Range: 0-2

N=0

N=1
Range: 0

N=6
Range: 0 – 112

N=7
Range: 0 – 120



## Mobile County

- 0, 0, 0, 0, 0
- 1, 3, 3, 8, 8
- 2, 7, 11, 16, 25
- 2, 18, 27, 29, 38
- 2, 11, 30, 61, 62
- 24, 38, 42, 47, 112

## Baldwin County

- 0, 0, 0, 0, 0
- 0, 0, 0, 1, 1
- 0, 1, 1, 3, 6
- 2, 2, 4, 5, 8
- 5, 26, 35, 55, 88
- 47, 48, 50, 56, 120

## Clarke County

- 0, 0, 0, 0, 0
- 0, 0, 0, 0, 0
- 0, 0, 0, 0, 0
- 0, 0, 0, 0, 1
- 6, 24, 82, 126, 182

Shilling et al. reported 350-500 spikelets per panicle (avg of 25/cm)

N=0

N=0

N=1
Range: 0

N=0

N=1
Range: 0

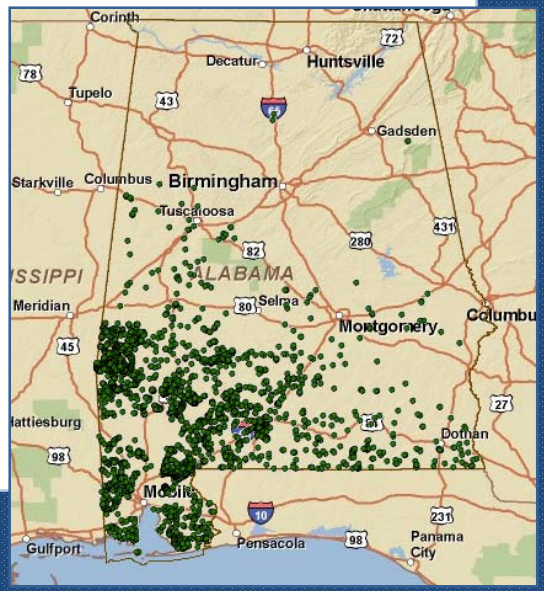
N=2
Range: 0

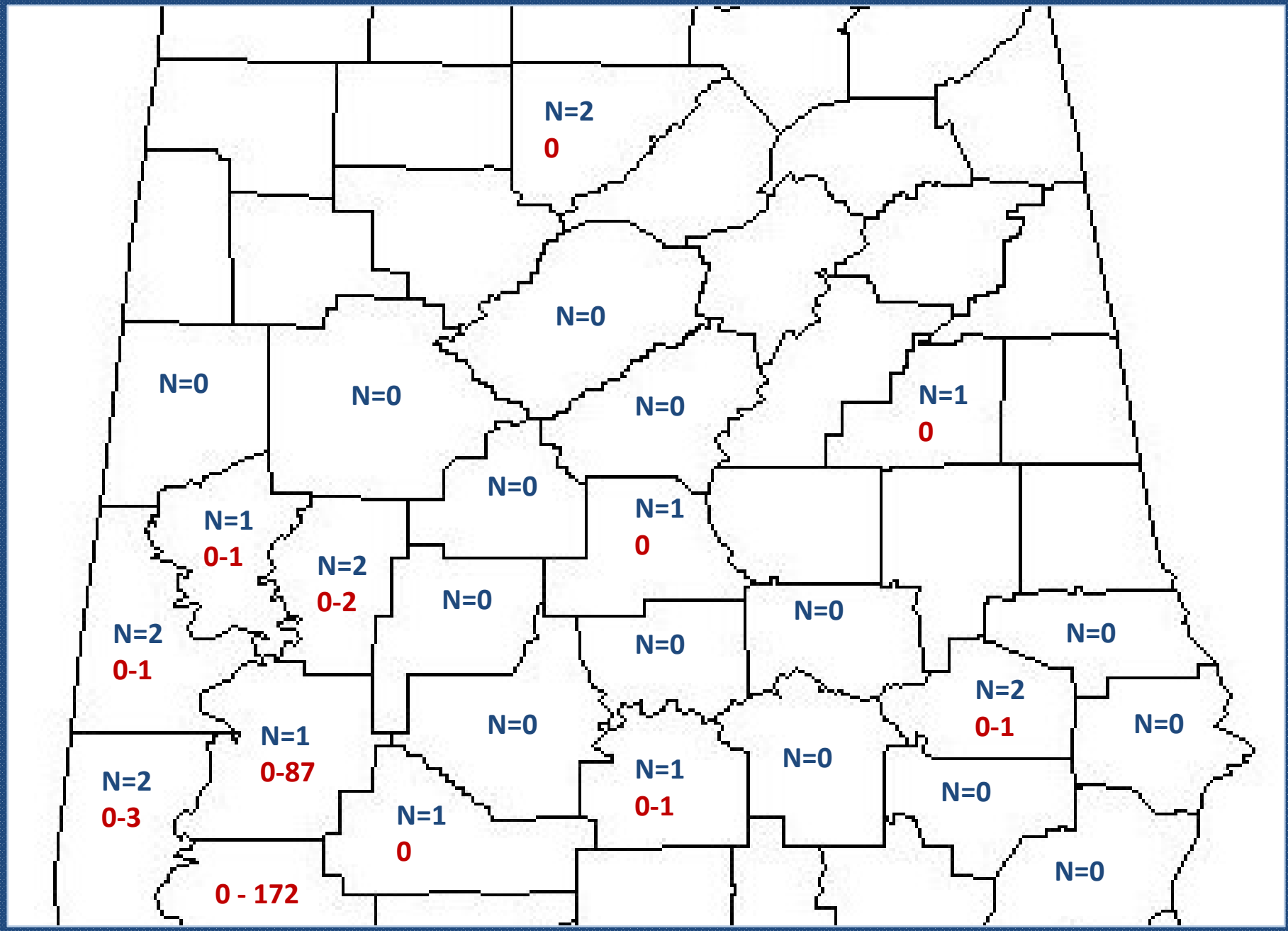
N=0

N=2
Range: 0-1

N=0

N=2
Range:0

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N=0
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0-1
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0-1
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N=1
0-1
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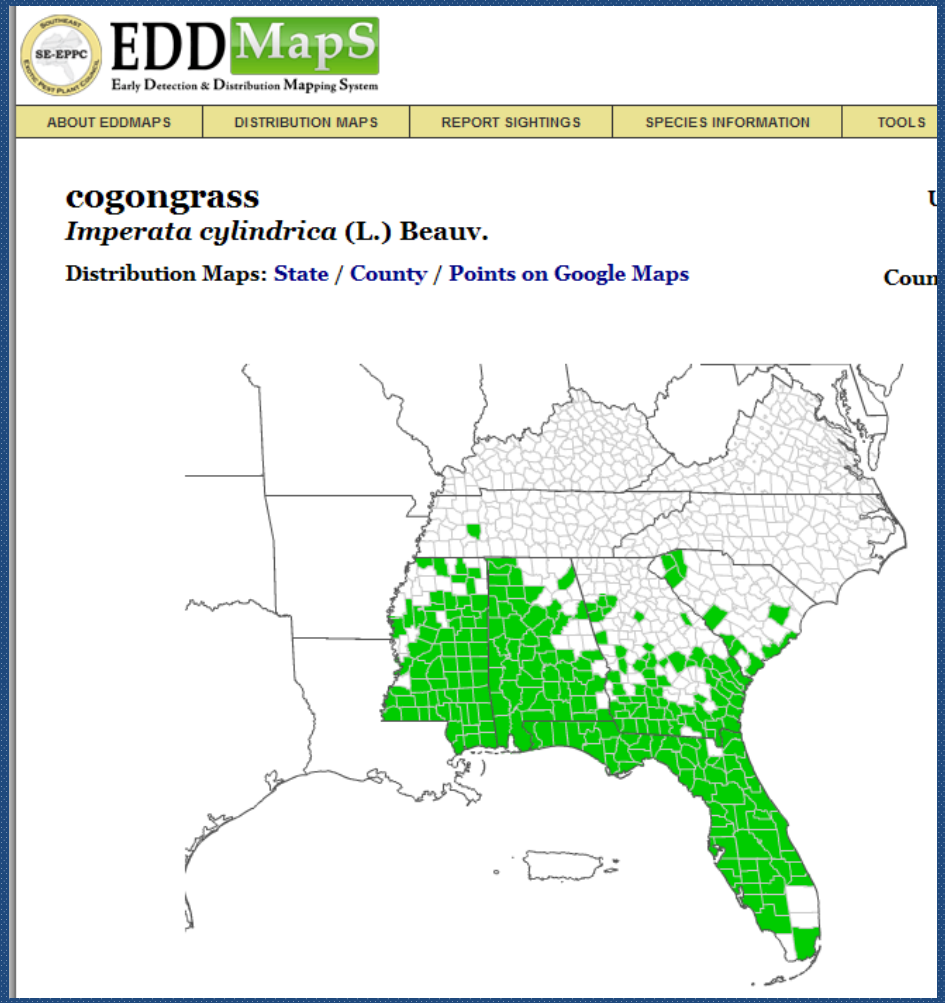
0 - 172

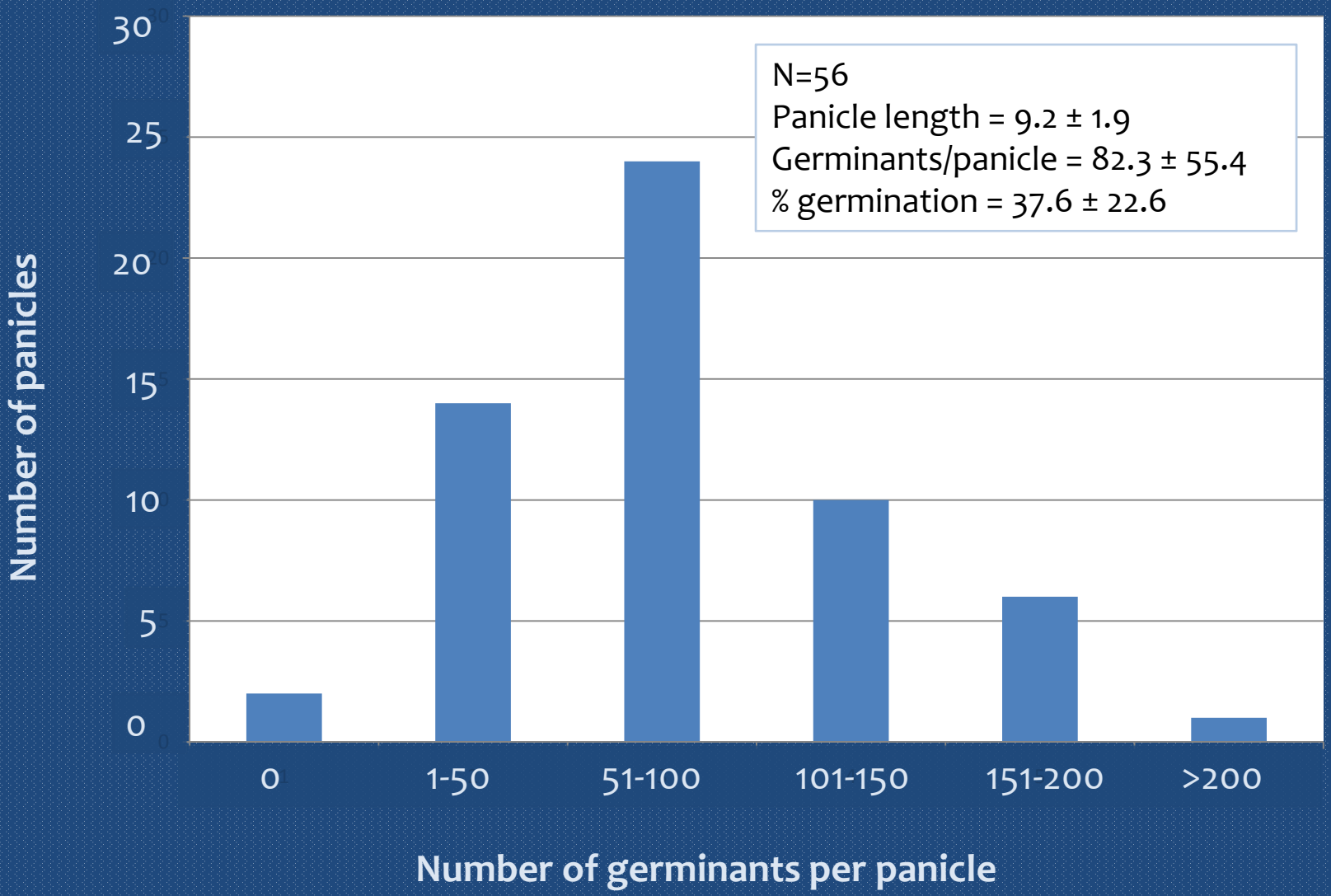



# Georgia

- 16 sites
- No germinants

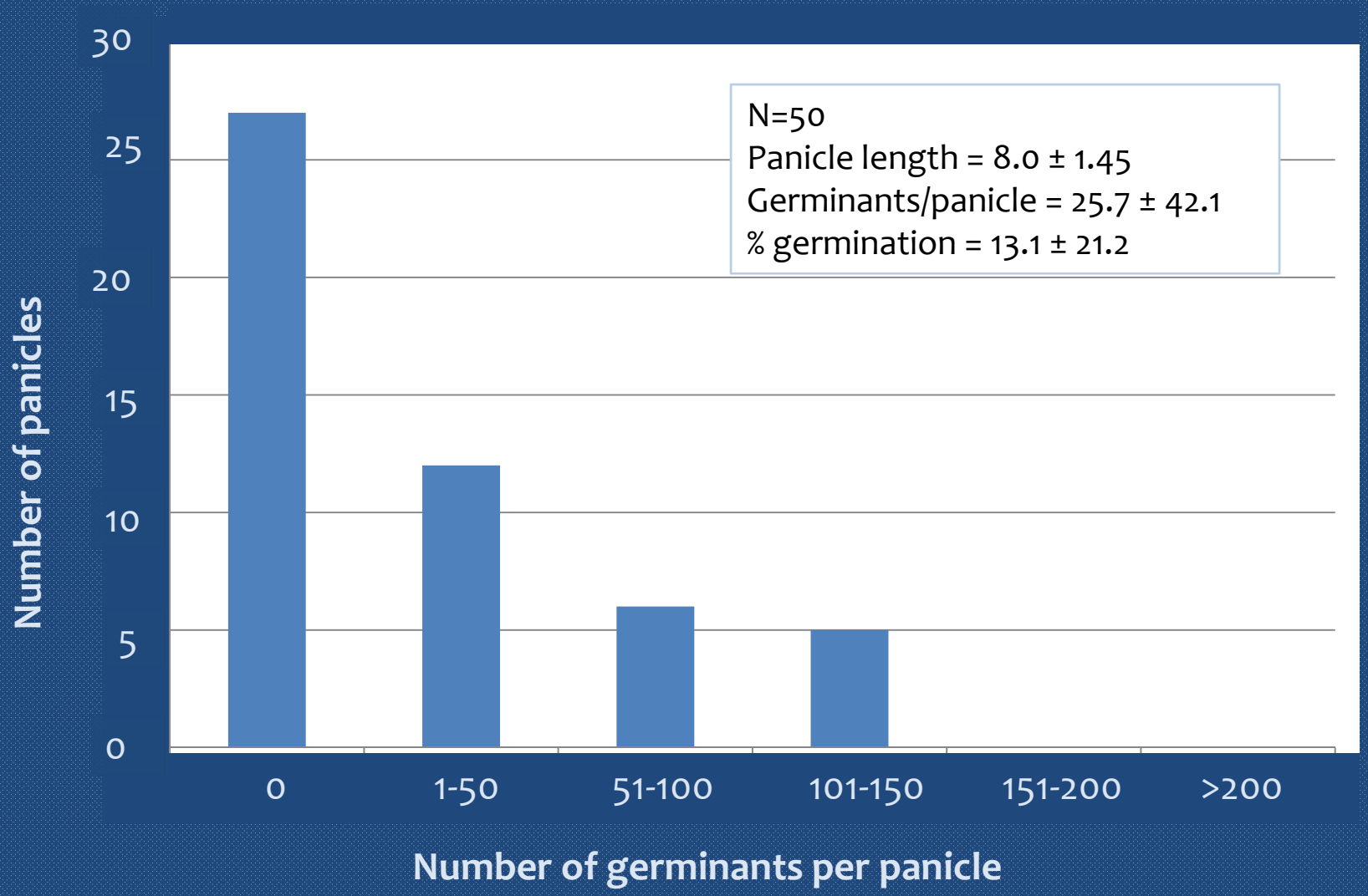
# Mobile County, AL

## Fresh seed



# Mobile County, AL

## 12 month old seed



# Conclusions

- Cogongrass seed production is variable across and within regions
  - Highest seed production occurred within the ‘occupied’ zone
  - Seed production was sporadic outside of the ‘occupied’ zone, but did occur
- Seed germination is high
- Seed longevity (in the lab) exceeded one year

# Acknowledgements


- Funding:
  - USDA Forest Service
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  - Georgia Forestry Commission
- Germination trials (2009):
  - Denise Landers