



Native Seed Development at the USDA NRCS East Texas Plant Materials Center

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East Texas Plant Materials Center

- 75 Acres
- Services 42 million acres in 4 states
- Established in 1982
- Cooperative Venture
 - NRCS
 - USFS
 - SFASU
 - SWCDs
 - RC&D Council
- 5 released native plant species



New Release

Coastal Plains Germplasm Little Bluestem

Schizachyrium scoparium

NRCS in Louisiana and Texas needed a little bluestem adapted to the coastal plains to support conservation and environmental programs

Current commercially available cultivars have failed to establish or persist in conservation plantings in east Texas and Louisiana

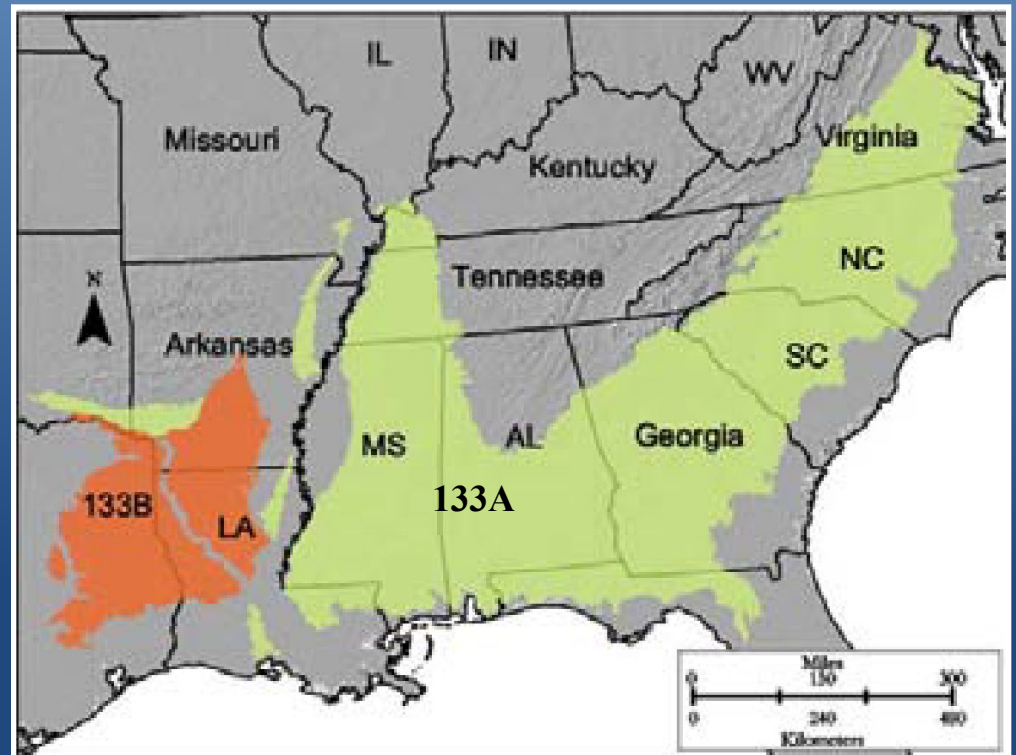


ETPMC Seed Production Field

Primary Goal

Coastal Plain Germplasm Little Bluestem

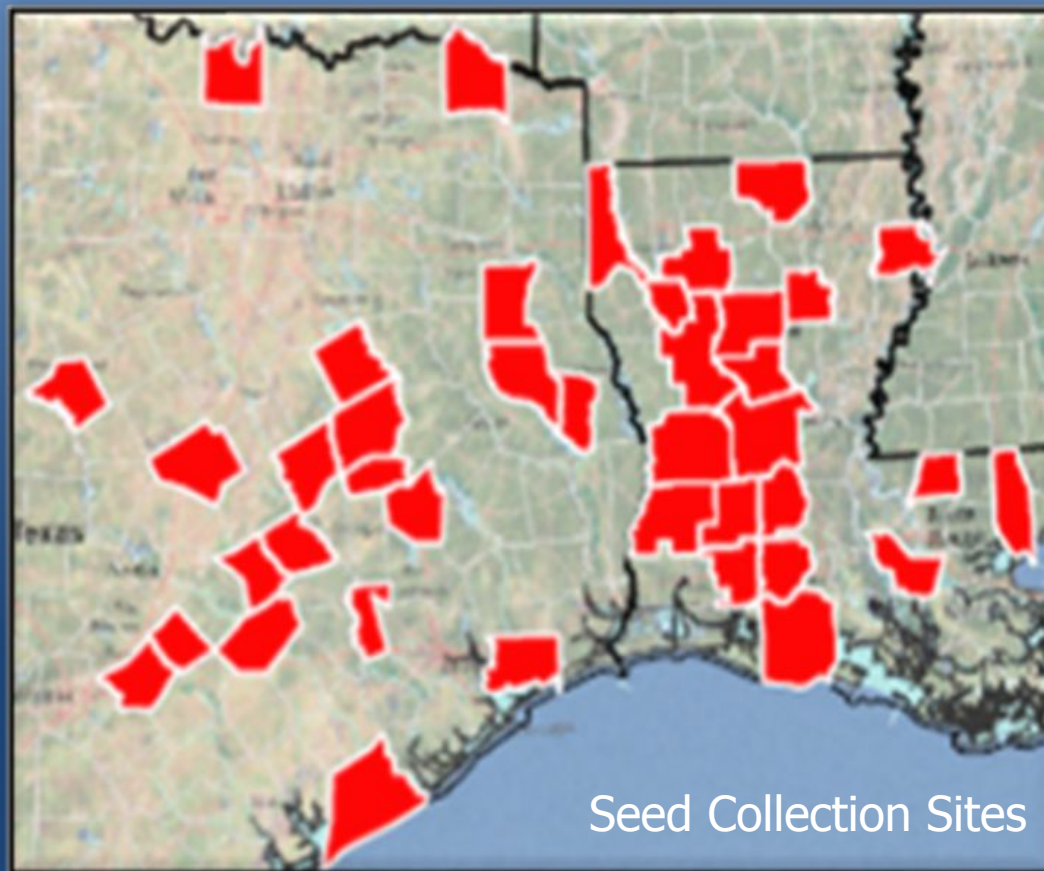
- Develop a little bluestem release adapted to MLRA 133B and surrounding MLRAs
- Most commercially available native seed in the market was developed in areas with vastly different environmental conditions
 - Shorter growing seasons
 - Drier climate
 - Colder winters
 - Drier soils



Development

Coastal Plains Germplasm Little Bluestem

- 87 seed collections from native little bluestem stands were evaluated at the ETPMC for germination and seedling vigor
- 77 collections were selected for seed increase, transplanted to the field, and evaluated for two years
- Seed from the 77 collections was bulk harvested and planted into a seed increase block in 2008



Development

Coastal Plains Germplasm Little Bluestem

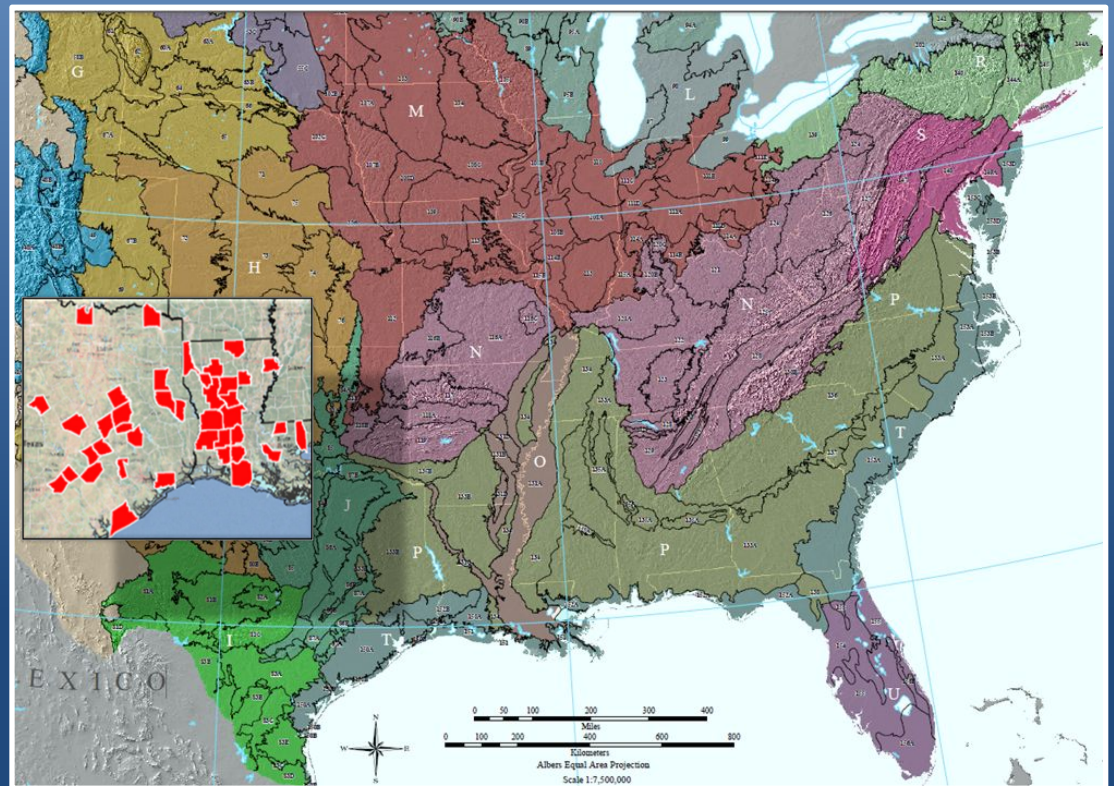
- No significant disease or other problems noted in seed increase block
- Seed yield averages 65 PLS pounds per acre with some years producing greater than 80 PLS pounds.
- Seed increase block is phenotypically diverse
- Sent to commercial producer for production in 2016



Area of Adaptation Coastal Plains Germplasm Little Bluestem

- Collections were sourced from MLRAs 85, 86A,B, 87A, 131A,B,C,D, 133B, 134, 150A,B, 152B

- Testing adaptation throughout Land Resource Region P



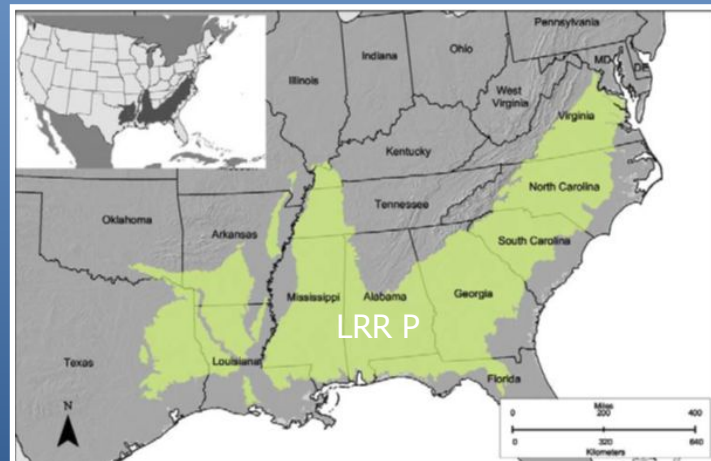
Conservation Uses Coastal Plains Germplasm Little Bluestem

•Potential for use in multiple NRCS conservation practices

- Field Borders
- Critical Area Planting
- Upland Wildlife Habitat
- Conservation Cover
- Range Plantings
- Restoration and Management of Declining Habitats

•Land Resource Region P correlates strongly to the historic longleaf pine range

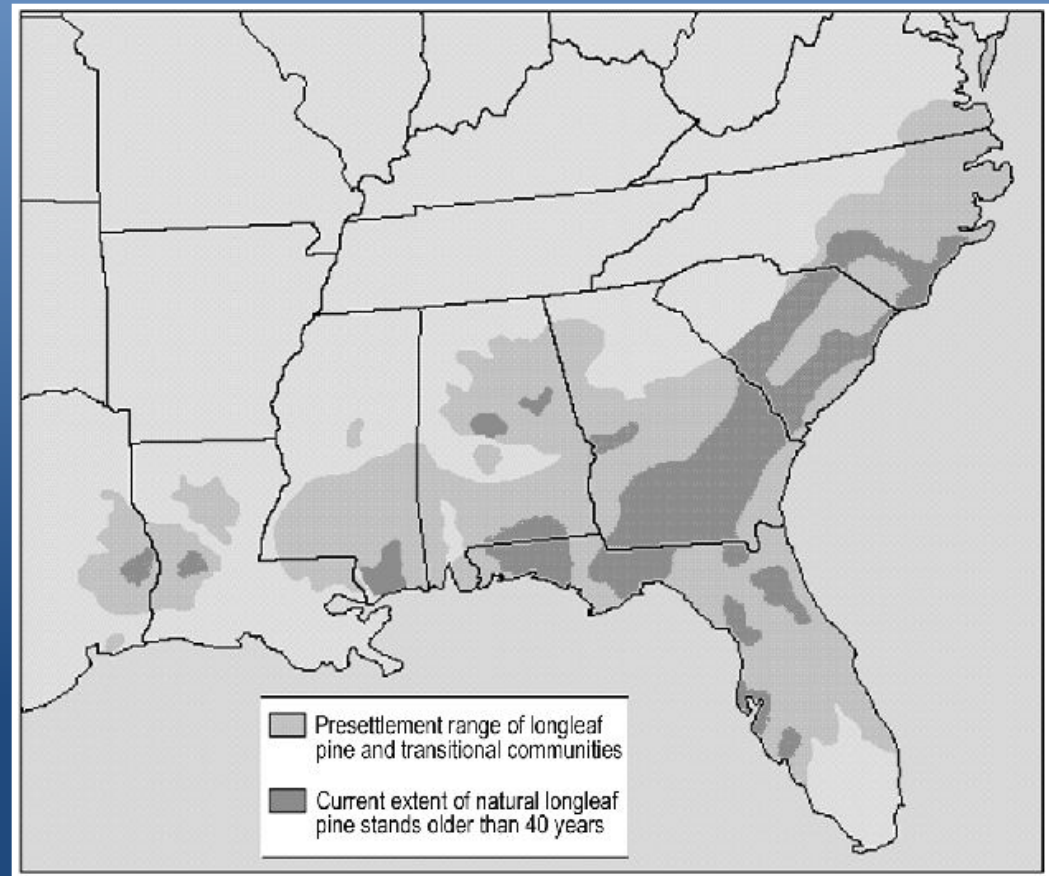
•Adaptation to LRR P would make Coastal Plains Germplasm ideal for use in longleaf pine understory restoration



USFS/NRCS Longleaf Pine Understory

- Longleaf pine is a declining eco-system
 - 92 million acres down to 4.3 million acres
 - Economically valuable
 - Timber
 - Grazing 2,000-3,000 lbs/acre
 - Wildlife

- System is fire driven, fine fuels are important



USFS/NRCS Longleaf Pine Understory Goals

- Develop a seed source of locally adapted understory species for LLP restoration in east Texas
 - USFS making seed collections of native grasses, forbs, and legumes in existing longleaf pine stands
- NRCS evaluates seed collections and develops seed increase fields at the ETPMC
- Seed from increase fields tested for adaptation to LRR P
- Release made available for commercial production



USFS/NRCS Longleaf Pine Understory Current Work

- Pinehill Bluestem (*Schizachyrium scoparium* var. *divergens*)
 - Dominate understory species in east Texas longleaf pine
 - Increased shade tolerance vs little bluestem
- 5 acre seed increase field established
- NRCS testing adaptation to LRR P
- Preparing to release



USFS/ NRCS Longleaf Pine Understory Future Work

- Pinewoods dropseed (*Sporobolus junceus*)
- Gayfeather (*Liatris pycnostachya*)
- Yellow Indiangrass (*Sorghastrum nutans*)
- Big bluestem (*Andropogon gerardii*)
- Splitbeard bluestem (*Andropogon ternarius*)
- Swamp sunflower (*Helianthus angustifolius*)
- Multi-bloom tephrosia (*Tephrosia onobrychoides*)





United States Department of Agriculture

USDA NRCS East Texas Plant Materials Center

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<https://www.nrcs.usda.gov/wps/portal/nrcs/main/plantmaterials/pmc/central/etpmc/>

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