

Longleaf Pine Understory Survival Study

The East Texas Plant Materials Center (ETPMC), in cooperating with the Longleaf Alliance and Texas Parks and Wildlife Department (TPWD), is conducting a longleaf pine establishment study. The study site is located on the TPWD Alazan Wildlife Management Area, adjacent to the ETPMC, and is duplicated on longleaf pine sites in Americus, Georgia and Brooksville, Florida. The objective is to compare seeding rates of Lark Selection and 'Comanche' partridge pea in native warm season perennial grass mixtures and determine the effect on longleaf pine seedling establishment. Failure of recent longleaf restoration plantings have been blamed on the aggressive growth of Lark Selection partridge pea smothering or creating fungal problems due to excessive moisture while trees are in the grass stage. Seeding rates of Lark Selection were reduced to 25%, 50%, and 75% of the recommended seeding rate, which was also included in the study. 'Comanche' partridge pea was planted on the same seeding rate gradient and was included due to its less aggressive growth form, compared to Lark Selection. The warm season grass mixture consisted of 'Kaw' big bluestem, 'Aldous' little bluestem, 'Cheyenne' indiagrass, and 'Alamo' switchgrass. Tree survival and emergence from the grass stage will be recorded at the end of each growing season. Special thanks to the Plant Materials Centers located in Manhattan KS, Knox City, Texas, and Coffeerville, MS for seed contributions.



Above: Longleaf pine seedlings planted to scalped strips
Below: Planting the warm season grass



Center Expansion and Improvement



The US Forest Service, as part of an agreement made during the development of the ETPMC, donated 40 acres of land after harvesting mature timber 3 years ago. The area has been under development, and is in its final phase of site preparation. Precision grading is complete, creating a gentle, uniform slope which will improve water usage, reduce soil erosion, and decrease statistical errors by limiting site variation. Water ways and a low water crossing have been installed to facilitate drainage, and irrigation is

planned for installation on 10 acres, with more to come in following years. This property has more than doubled the size of the ETPMC and will allow room for increased production, technology based studies, large scale demonstration plantings, and cooperative studies with local universities. Stephen F. Austin State University graduate student, Jodie Hill, is scheduled to start a silvopasture study this summer to determine the effects of various levels of shading on introduced and native forage grasses.

Native Warm Season Grass Adaptation and Demonstration Study



The ETPMC has developed an adaptation study of commercially produced, cultivar releases from Plant Materials Centers across the southeastern United States. Releases will be evaluated for disease resistance, adaptation / persistence, biomass production, seed production, and growth rate. This will increase efficiency at the ETPMC by eliminating duplication of plant material. If commercially produced releases from other service areas perform well in east Texas, there is little need in developing a new release of the same material for the ETPMC Service area. The evaluation will focus on the big 4 tall grass prairie species, little bluestem, big bluestem, indiagrass, and switchgrass. Eastern gamagrass releases are also included in the study. This work will allow the ETPMC to provide support and technical information to field offices, giving them the information needed to make recommendations for use of Plant Materials Program releases in conservation plantings. Upon

completion of the study, one replication will be saved and used as a demonstration allowing field office employees and landowners an opportunity to see exactly how each release performs in east Texas during field tours. The ETPMC hope to further this work by evaluating major forb and legume releases from the southeastern United States in the future. The ETPMC would like to thank all the Plant Materials Centers that sent seed for use in the study.

Outreach



Mr. Oscar Berrios, LifeSkills educator and garden coordinator at Stephen F Austin High School with (R-L) Blanca Garcia, Nalleli Hidalgo and student participant, Edna Rodriguez show wildflowers donated by the ETPMC

Tamberly Conway, Conservation Education Specialist for the US Forest Service, contacted the ETPMC to aid in the Green Schools Garden Program by providing seed and seedlings of native plants and wildflowers. The plants were distributed to the American Forest Foundation Project Learning Tree GreenSchools! (Stephen F. Austin HS, Jackson Middle School and Berry Elementary Environmental Science Magnet School in Houston and TJR Elementary PollinatorLIVE! garden in Nacogdoches). The ETPMC has hosted center tours for school groups participating in the program focused on conservation uses of native plants and their importance to the ecosystem, and we look forward to partnering with the group in the future.

Cover Crops

The ETPMC coordinated a cover crop demonstration planting with State Agronomist Willie Durham 2 years ago, and is expanding this demonstration to a larger scale for 2012. The demonstration will highlight the benefit of using multiple species in fall cover crop mixes by monitoring soil health and commodity crop yields. The ETPMC will grow soybeans as a commodity crop and record yield differences between no-till, multi-specie, winter cover crop plots and traditional tillage plots left fallow in the fall. Winter cover crop mixes have shown to greatly improve soil health by increasing organic matter, nutrient cycling, decreasing weed competition, increased moisture retention and infiltration, and aerating the soil. Species such as tillage radish, inset photo at right, can be used to penetrate heavily compacted soils and hard pans with their deep reaching tap roots. The ETPMC is currently using a variety of summer and fall cover crops to improve soil health and structure, reduce weed competition, and control erosion.



Featured Plant – May Hawthorn (*Crataegus aestivalis*)



May hawthorn showing immature fruit, leaves, and thorny branch

May Hawthorn is a member of the Rosaceae family. This plant is a deciduous, small, round topped tree which grows to 30 feet in height. Leaves are dark green, simple and alternately arranged. The white flowers grow in clusters of 2 or 3 or singly. Twigs are brown to gray and spiny. May hawthorn is adapted to full sun, but will tolerate partial shade. It grows in a variety of soils preferring well drained, slightly acidic conditions. The tree provides nesting sites and cover for small birds. Birds and small mammals eat the fruit. Whitetail deer browse the leaves and young stems. The fruit is frequently used for preserves and jellies and can be dried for future use. May hawthorn is susceptible to some of the same insects and diseases that attack other pome fruits. These include insects such as the hawthorn lace bug and roundheaded appletree borer along with leaf miners and mealy bugs. Two commercially available selections are Lori and Linsey.

Who We Are

The USDA Natural Resources Conservation Service (NRCS) collects, selects and releases plants and develops plant technology to address our nation's most critical soil and water problems through the agency's Plant Materials Program. The East Texas Plant Materials Center in Nacogdoches, Texas serves east Texas, western Louisiana, southwest Arkansas, and southeast Oklahoma. The Plant Materials Center is a partnership between the NRCS, US Forest Service, Stephen F. Austin State University, and Soil and Water Conservation Districts in east Texas and western Louisiana.

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