



Project Summary

Texas Department of Transportation

0-4570: The South Texas Native Plant Restoration Project

Background

Restoring vegetative cover on disturbed or engineered soils following roadway construction is a minor part of the overall workload of the Texas Department of Transportation (TxDOT). But, the resultant plant communities that exist along Texas' 80,000 miles of roadways, may well be the most visible and cared about portion of a roadway to many members of the public, natural resource managers, and especially adjacent landowners. Historic and recent use of exotic grasses for erosion control is a major complaint against the agency.

In south Texas (Laredo, San Antonio, Corpus Christi, and Pharr TxDOT Districts), seed mixture specifications have historically included both native and exotic grass seeds in order to establish necessary permanent vegetation for erosion control on highway rights of way. Many native seed sources available commercially prior to this project performed poorly when planted in south Texas. Substantial evidence suggests native seeds used for restoration and reclamation should originate from populations from the same ecosystem as the planting site for best performance. When this project began, no commercial sources of ecotypic native seeds were available for use by TxDOT along roadways in south Texas.

What the Researchers Did

The research team compiled a list of desired native seeds for TxDOT and other land managers and users in the south Texas region. Researchers then made collections of seeds from various populations of these plants from throughout south Texas, primarily from remnant stands along road right of ways and on private ranches. After cleaning and processing the seed, several evaluation sites were established in the region to compare the various populations of each species, and identify those populations with natural adaptations for successful use in restoration applications such as highway right of way seeding and rangeland restoration, as well as those populations with adequate seed yields and growth characteristics for large-scale commercial seed production. The selected populations were released by the *South Texas Natives* research team in cooperation with the United States Department of Agriculture-Natural Resources Conservation Service-E. "Kika" de la Garza Plant Materials Center and Texas AgriLife Research Station-Beeville. Following selection and release, seeds of each species were increased in field-scale seed production fields, and provided to commercial seed growers for large scale production and eventual availability to consumers.

Research Performed by:

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Research Supervisor:

Forrest Smith, TAMUK

Researchers:

Timothy Fulbright, TAMUK

Project Completed: 8-31-11

What They Found

The research team evaluated collections of 49 different native plant species. Of these 49 species, 17 were found to have the necessary attributes for successful use in erosion control seeding and other uses for native seed sources, *and* the necessary attributes for large scale commercial production of seed. Many native species from south Texas had lower than necessary seed yields, or were physically difficult to grow and harvest at large scales. As of the end of the project, 14 of the 17 seed releases made through the project were being produced commercially and seed of many selections had already been sold commercially.

What This Means

Ecotypic native seed sources of native plants are now available for use by TxDOT for seeding along highways in south Texas. Testing shows these seed sources will perform adequately for this use, allowing for effective seeding projects using native plants adapted to region. These native seeds should help TxDOT reduce the use of exotic species, promote biodiversity, and minimize impacts of roadways to the surrounding landscape. As a result of this project, by autumn 2011, seeding specifications for the Pharr and Corpus Christi TxDOT districts were changed to utilize the seed sources developed by the project, and specifications for the remaining south Texas TxDOT districts will be changed once commercial seed supplies reach needed levels.

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