

**KIKA DE LA GARZA
PLANT MATERIALS CENTER
USDA-NATURAL RESOURCES
CONSERVATION SERVICE**



JANUARY 2000

Newsletter published by Kika de la Garza Plant Materials Center Advisory Board Kingsville, Texas.

CAPTAIN FALCON PARK SALINE REVEGETATION PROJECT

The Corpus Christi Parks and Recreation Department has been seeking a solution to an erosion problem at Captain Falcon Park. The Department has been unable to get vegetation to grow successfully on the slopes of a stormwater channel within the park. This problem has led to erosion of soil from the slopes into the channel which feeds into Oso Bay. The Kika de la Garza Plant Materials Center was asked in the spring of 1998 to assess the problem and provide a revegetation plan for the park. Assessment of the soil at the park indicated a severe soil salinity problem. Electrical conductivity (EC) readings ranged from 9.0 to 70.0. The Plant Materials Center developed a list of native plants that would be best adapted to these highly saline conditions of the park. The list of native plants included alkali sacaton (*Sporobolus airoides*), big sacaton (*Sporobolus wrightii*), marshhay cordgrass (*Spartina patens*), gulf cordgrass (*Spartina spartinae*), armed saltbush (*Atriplex acanthocarpa*) and fourwing saltbush (*Atriplex canescens*). In the fall of 1998, over 6,000 plants of these salt tolerant species were grown at the Center. These were transplanted at Captain Falcon Park in the spring of 1999. In conjunction with the revegetation efforts, the Plant Materials Center conducted an evaluation of the native plant materials.

Plant evaluations were done on October 8, 1999. There was no survival from either the 3 inch or 6 inch potted material of alkali sacaton where the EC was around 70.0. The 6 inch potted material of alkali sacaton successfully survived, established and grew at those sites that were closest to an EC of 24.0. At those sites, the 6 inch transplants grew to be about 12 inches tall with a base width of 5 inches. Survival comparisons were done for gulf cordgrass, marshhay cordgrass and big sacaton on sites that averaged an EC of 24.0. There was no significant difference between the various species for survival at this site. Marshhay cordgrass showed a slightly lower survival rate and adaptability on these saline clay soils. Marshhay cordgrass had a survival rate of 38 % while gulf cordgrass and big sacaton both had a survival rate of 54%. There was no significant difference between the survival of armed saltbush without a 6 inch tree shelter compared to either armed saltbush or fourwing saltbush with a tree shelter. Armed saltbush without a tree shelter actually had significantly greater canopy width than the other treatments. The shelter appears to constrict the width of armed saltbush. Fourwing saltbush showed lower

survival rate and growth compared to the armed saltbush. Fourwing saltbush had a survival rate of 37% while armed saltbush with a shelter had a survival rate of 83% and a survival rate of 60% without a shelter.

Planting at this site revealed how difficult it is to establish plants on saline soils. Where soil salinities are around an EC of 24.0, alkali sacaton, big sacaton, gulf cordgrass, marshhay cordgrass and armed saltbush can become established from transplants with additions of weekly one-inch irrigations. Where the EC exceeds 24.0, armed saltbush planted with tree shelters and irrigated weekly has provided the most successful establishment. Further investigation will be conducted on the highly saline soils (EC >24) in the fall of 1999 and spring of 2000 using soil amendments with 3 inch transplants and seeding.

RANGE GRASS COLLECTIONS

The Kika de la Garza Plant Materials Center is currently collecting four grasses for evaluation in seed mixes for rangeland restoration. They are Vine mesquite (*Panicum obtusum*), Hooded windmillgrass (*Chloris cucullata*), Brownseed paspalum (*Paspalum plicatum*) and Pink pappusgrass (*Pappophorum bicolor*). We believe that these mid-successional species offer the best opportunity for developing a native seed mix with good establishment characteristics. Thanks to the great response from the field offices we have received 25 collections of vine mesquite seed with 4 from Zone 1, 6 from Zone 2, 15 from Zone 5 and no collections from either Zone 3 or 4. We have received 34 collections of hooded windmillgrass seed with 6 from Zone 1, 3 from Zone 2, 19 from Zone 3 and no collections from Zones 4 and 5. We have received 25 collections of brownseed paspalum seed with 22 from Zone 3, 3 from Zone 4 and no collections from Zones 1, 2 and 5. We have received only 5 collections of pink pappusgrass seed from Zone 3. We appreciate your efforts to provide seed for this evaluation. We will be planting the collections we received in 1999 at the Center this spring. However, we will continue to accept collections in 2000, so it is not too late to provide a collection. Hopefully 2000 will be a wet year that will find you in good collecting spirits. HAPPY NEW YEAR !

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (Braille, large print, audio tape, etc.) should contact the USDA Office of communications at (202) 720-5881 (voice) or (202) 720-7808 (TD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C., 20250, or call (202) 720-7327 (voice) or (202) 690-1538 (TDD). USDA is an equal employment opportunity employer.