

Quail Ranch Grassland Restoration Research Plantings

Samuel R. Lufy, Colin S. Shackelford, Anthony D. Falk, Jesse Wood, Keith A. Pawelek, and Forrest S. Smith

There has been relatively little native seeding research in the Permian Basin over the last 30 years. Our efforts are changing that, and we are focusing on developing and releasing new native seed sources for the region. We are also working to determine the utility of available seeds for immediate use and to test various hypotheses why restoration seeding has historically been difficult in this region.

We established 20 acres of research plantings on 2 soil series at Concho's Quail Ranch in Upton County. On each soil series, we planted 10-acre plots on degraded rangeland where brush was removed and significant soil disturbance had occurred. We no-till drilled a mix of commercially available native seeds containing 15 species thought to be adapted to this region. Half of each planting site was enclosed with rabbit-proof fencing to determine the effect of rabbit herbivory.

At 1 of the 2 sites, data indicated acceptable adaptation of 2 seed varieties in terms of early establishment: Nueces Germplasm sand dropseed and Van Horn green sprangletop. Eight other native grasses also had some first-year establishment. In the rabbit enclosure, native grasses reached 20% cover, whereas the non-exclosures had almost no native grass establishment, and non-native Lehman lovegrass dominated. At the second site, very poor establishment was measured in the first growing season. Future research and second-year data will help us better understand the relationships between seed adaptation to various soil series in the Permian Basin and better understand the effects of rabbit herbivory on reseeding success.

Cooperative funding provided by Concho Resources, Inc.