

## **Restoration Research at the Railway Ranch in the Permian Basin**

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A dramatic expansion of energy infrastructure in the Permian Basin and Panhandle regions of Texas has resulted in tens of thousands of acres of degraded rangeland that are potentially available for habitat restoration. While new seed releases are in development, there is a need for the study and promotion of successful planting methodologies with the currently available seed sources from the region.

In addition to the many recommendations our program makes and our ability to monitor restoration activities, we have been able to install two research projects on the Railway Ranch, located south of Odessa, Texas. Plantings on these plots were completed in fall 2018 and spring 2019. Each planting consists of three replicates totaling 5 acres seeded with a native plant seed mix of 20 species. In each replicate, two methods of seeding are being compared (Trillion broadcaster and Truax no-till native seed drill). A number of exclosures in each planting area have been installed that will allow us to test for the potentially negative effects of rabbits on restoration success. Data for the first year have been collected and analyzed, and data from the second year are being collected.

Initial results between sites with exclosures and sites with no exclosures suggest that herbivory has negatively affected the success of the seedlings. In addition, use of the no-till drill resulted in greater plant establishment than the broadcaster. Further research into nurse crops for stand establishment protection and other ways to curb rabbit herbivory may benefit native plant restoration efforts in the region.

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