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Oral Presentation

HABITAT CHARACTERIZATION AND PILOT REINTRODUCTION OF STAR CACTUS (*ASTROPHYTUM ASTERIAS*)

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Abstract—*Astrophytum asterias* is federally listed as endangered and in the United States is found only in Starr County, Texas. The species has a priority ranking of 2 by the United States Fish & Wildlife Service which means it has high recovery potential. One means to achieve recovery is by reintroduction. To establish a successful reintroduction, it is important to know the species' habitat. Therefore, this study characterized *A. asterias* habitat by conducting vegetation transects and collecting soil samples in 15 subpopulations. The top five plant species with greatest dominance included: *Varilla texana*, *Prosopis glandulosa*, *Acacia rigidula*, *Opuntia leptocaulis*, and *Castela erecta* subsp. *texana*. *Astrophytum asterias* has been found in the following soils: Catarina soils; Garceno clay loam; Jimenez-Quemado association; Maverick soils, eroded; Montell clay, saline; and Ramadero loam. Of the 15 subpopulations sampled, 9 were classified as saline-sodic; 2 saline; 2 sodic; and 3 non-saline, non-sodic. In this study a pilot reintroduction was also established to test the feasibility of reintroducing *A. asterias*. Seeds and seedlings were used as propagules for the pilot reintroduction. Four treatments were established: seeds planted in the spring; seedlings planted in the spring; seeds planted in the fall; seedlings planted in the fall. Each treatment consisted of 120 individuals. Overall less than 4% of the planted seeds produced seedlings. Seedling survivorship of the spring and fall treatments was 55% and 72.5%, respectively. Mortality of seedlings was due to desiccation, herbivory, infestation by weevils, burying by Mexican ground squirrel, and other miscellaneous causes. Based upon the research of this study, a draft reintroduction plan for *A. asterias* was developed to guide future reintroductions.