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Oral Presentation

DEMOGRAPHICS, LIFE HISTORY, AND TRASPLANTATION METHODS FOR AN ENDANGERED ORCHID ENDEMIC TO TEXAS, NAVASOTA LADIES' TRESSES (*SPIRANTHES PARKSII* CORRELL)

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Abstract- *Spiranthes parksii* Correll (Navasota ladies' tresses) is a federally endangered orchid endemic to the post oak savannah of Texas. Destruction of individuals and habitat during the construction of the Bryan/College Station Twin Oaks Landfill has provided funding to study *S. parksii*. Plant demographics and life history characteristics were observed on *S. parksii* over several years at Twin Oaks. Numbers of flowering plants were 32, 774, 18, 118, and 240 in 2000, 2001, 2006, 2007, and 2008, respectively. Rainfall in August, and combined rainfall in the rosette and flowering growing season showed the high correlations with number of flowering plants for 2000, 2001, 2006, and 2007 ($R^2=0.93$ & 0.67 , respectively). Of the 118 that flowered in 2007, 1 (10.%) had previously flowered in 2006. Of the 240 that flowered in both 2008, 19 (8.0%) had previously flowered in 2007, and 1 (0.5%) had previously flowered in both 2006 and 2007. Two methods of transplantation were conducted to preserve individuals that would be destroyed during construction of the landfill, in agreement with the U.S. Fish and Wildlife Service mitigation plan. Unknown *S. parksii* or *S. cernua* rosettes were transplanted into protected areas where *S. parksii* was known to occur. Soil-intact (n=63 plants) and bare-root (n=59 plants) methods were applied. Re-appearance of transplanted individuals as a rosette in subsequent years ranged from 40 to 60 percent for both methods, while emerging flowering stalks were 16 to 31 percent. This was similar to rosette and flowering re-appearance of undisturbed rosettes on site, also found during years of transplantation. PAR during the growing season was significantly lower at soil-intact transplants that produced a rosette both subsequent seasons than plants that did not produce a rosette either of the two subsequent seasons. There was no difference for bare-root transplants after one season.