

THE BRACTED TWISTFLOWER, *STREPTANTHUS BRACTEATUS*: FROM GENETIC OBSERVATIONS TO CONSERVATION RECOMMENDATIONS

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The Bracted Twistflower, *Streptanthus bracteatus* Gray (Brassicaceae) is a rare ge endemic plant that is restricted to sites near the Balcones Escarpment of central Texas that are also undergoing rapid urbanization and other human impacts. Only a handful of remaining populations remain. We used DNA-based microsatellite markers to ascertain the population-genetic status of potential sources of seed for the establishment and augmentation of persistent populations.

Based on pairwise *F_{st}*s and Nei's genetic distance, we found significant genetic differentiation *within* the species. Thus, care must be taken in the selection of materials for genetic translocation (for population augmentation or re-establishment efforts aimed at conservation of this species) in order to avoid potential loss of locally adapted genotypes. Further, we identified major clusters of populations in the Medina County and in Austin area that comprise the core genetic diversity for the species. We consider the establishment of multiple, protected 'safe sites' in each of these areas to be critical to the long-term genetic viability of the species (by preventing inbreeding depression and maintaining evolutionary potential).

Finally, our studies showed that some, but not all, of the populations showed levels of inbreeding that are considered to be high for predominantly outcrossing plant. The inbreeding was most prevalent in smaller, more isolated populations. In other populations, inbreeding was not detected, indicating that these populations are genetically healthy, and that pollinators are active and present in sufficient numbers to ensure high levels of outcrossing. This information is being used in the selection of sources for seed collection and banking efforts.