

Reconstructing the vegetation history of a Piedmont prairie remnant

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Geum geniculatum Michx., bent avens, is a perennial herb that is restricted to the high elevations of three mountaintops between North Carolina and Tennessee. While geographically restricted, some populations have been reported to have thousands of individuals. In order to address the needs to understand life history, pollination biology and genetic diversity 1) 13 sub-populations were censused, 2) a long-term demography study was established at one population, 3) an insect visitor survey using time-lapse camera was performed and 4) a population genetics study was performed. Results of censusing suggest the most robust populations occur along stream banks with 90 to 95% canopy cover; however, the plant can also withstand varying habitat including grassy balds and trails. Overall, population sizes appear smaller than previously reported. The first-year demography data, while only established for one population, will provide a baseline to understand life history traits for the species and population viability of the smallest metapopulation. The genetic results suggest *G. geniculatum* has high genetic diversity and is comprised of three highly structured metapopulations with moderate differentiation between them. These data can be utilized by land managers and future researchers to conserve and manage the species along with guiding future research questions.

