Assessing Population Demographics of Sericea (*Lespedeza cuneata*) in Response to Environmental Variation and Land Management in the Great Plains

Jennifer N. Smith*
Faculty: Gregory R. Houseman
*Department of Biology, Fairmount College of Liberal Arts and Sciences*

Sericea (*Lespedeza cuneata*) is an invasive, perennial legume threatening native grasslands in the Great Plains. Although much is known about Sericea, population demographics (survival, growth, reproduction, and recruitment) have never been assessed over realistic temporal and spatial scales. We quantified Sericea vital rates across eight, large-scale ranching operations representing four cattle management regimes and three soil fertility types. Sericea density was highest among mature individuals relative to juveniles, and in low to medium fertility soils with year-round cow-calf grazing. Survivorship through the growing season was lowest (~60%) among seedlings in low to medium fertility soils with cow-calf grazing. Mature plant survivorship was nearly 100 percent across all treatment combinations. Given low juvenile survivorship, preliminary results suggest control efforts focus on mature plants in low to medium fertility soils. However, these responses need to be verified over additional years to better predict bioeconomic impacts and guide weed management decisions.