**Quantifying the relationship between soil seed bank and plant community assemblage in Ivesia webberi A. Gray populations  
  
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 **Abstract:**The soil seed bank is an important ecosystem component that can be pivotal for long-term persistence of many plant species. However, many Great Basin Desert perennials invest in clonal regeneration at the expense of seed production, which could limit the importance of their soil seed banks for species persistence. Furthermore, large areas of the Great Basin are currently invaded by alien weeds. Therefore, this study evaluates the relationship between the aboveground flora and the soil seed bank in 10 sites containing populations of the federally-threatened perennial forb Ivesia webberi. We used redundancy analysis, multiple regression on distance matrices, and variation partitioning to quantify the relationship between the aboveground flora and the soil seed bank, accounting for the effects of spatial processes and environmental variables describing the climatic and site conditions in the 10 studied sites. Findings reveal high dissimilarity in species assemblage and abundance between the aboveground plant communities and the soil seed bank. This is largely driven by the abundance of invasive alien weeds that are prevalent in the seed bank. The majority of the dominating native plants sampled in the standing vegetation were absent in the soil seed bank, suggesting high seedling mortality, possibly exacerbated by the competitive effects of invasive weeds. Overall, the plant community structure in the sampled sites is influenced by climatic factors, while floristic dissimilarity between the standing vegetation and the soil seed bank may be due to the abundance of invasive weeds. This indicates low resilience and high risk of native species loss following perturbation. Post-disturbance succession in these plant communities will be largely dominated by invasive annual species, and therefore native plant seeding may be necessary to sustain the ecological legacies of the desert ecosystem.