

Chapin Mesa Milkvetch (*Astragalus schmolliae*) SSA Report comments

Historical and Current Range and Distribution/Life History

1. SSA needs more detail in the monitoring methods. Regular monitoring has occurred in Mesa Verde National Park since 2001 – however upward or downward trends cannot be detected. A detailed description of the methodology is needed. There is little or no quantitative information regarding recruitment, seedling survival, mortality, prolonged dormancy, and time to first flowering. Life stages need to be defined – in particular seedling vs. yearlings and immature plants vs. adults.
2. Quantitative demographic information is needed. It is a concern that the only monitoring data has occurred on Chapin Mesa and therefore does not cover the entire range of the species. It would be especially important to at least have survey information from the Ute Mountain Ute populations and monitoring data for the future if at all possible.
3. Do quantifiable monitoring/sampling objectives exist for the Chapin Mesa population?? If so, was a power analysis performed to confirm that enough sample units were measured to meet those objectives?
4. Prolonged dormancy – if the Chapin Mesa milkvetch exhibits prolonged dormancy it is necessary to know how long for individuals. It is a useful strategy for a plant to use to survive drought. Several other *Astragalus* species exhibit prolonged dormancy – quantitative information here would greatly enhance the drought/climate change discussions. See Lesica, P and B. M. Steele. 1994. Prolonged dormancy in vascular plants and implications for monitoring studies. *Natural Areas journal* 14: 209-212. Is it possible to link dormancy with climate change to evaluate current condition and future condition.
5. Habitat needs of the population – good discussion on with winter and spring precipitation. Quantitative data is needed for grass cover, exotic species, pinyon-juniper canopy cover.
6. Qualitative data provided cannot answer what things are most important to ensure persistence/survival of the populations.
7. No discussion of current conservation actions that are being implemented. No discussion of future conservation actions.
8. Is there any status assessments from the past that could be used to inform this SSA??
9. Expand the climate change discussion and how it may exacerbate impacts to the species such as wildfire.