

1154-92-2784

**Amanda N Laubmeier\*** (laubmeier@unl.edu), **Richard Rebarber** and **Brigitte Tenhumberg**. *Applying observers to track Astragalus dynamics with reduced population counts*. Preliminary report.

Ecological data are costly to collect, particularly considering the long timescales over which we might want to observe a study system. We are therefore interested in methods which minimize the burden of data collection, or maximize the information obtained from smaller data sets. In this work, we consider the use of observers to supplement data sets in which we lack population counts for some subpopulations. The benefit to such an approach is that some subpopulations may require time-consuming samples, and only observing select subpopulations can reduce the burden of data collection. Specifically, we utilize a data set tracking *Astragalus* plants over several years, in which large flowering plants are easily counted but small or dormant plants are difficult to count. We demonstrate the utility of an observer based on a discrete-time annual model for *Astragalus* reproduction. (Received September 17, 2019)