

## One hundred and six years of population and community dynamics of Sonoran Desert Laboratory perennials

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**Abstract.** This data set constitutes all information associated with the Spalding-Shreve permanent vegetation plots from 1906 through 2012, which is the longest-running plant monitoring program in the world. The program consists of detailed maps of all Sonoran Desert perennial plants in 30 permanent plots located on Tumamoc Hill, near Tucson, Arizona, USA. Most of these plots are 10 m × 10 m quadrats that were established by Volney Spalding and Forrest Shreve between 1906 and 1928. Analyses derived from these data have been pivotal in testing early theories on plant community succession, plant life history traits, plant longevity, and population dynamics. One of the major contributions of this data set is the species-specific demographic traits that derived from estimating individual plant trajectories for more than 106 years. Further use of these data might shed light on spatially explicit population and community dynamics, as well as long-term changes attributable to global change.

Data presented here consist of digital versions of original maps created between 1906 and 1984 and digital data from recent censuses between 1993 and 2012. Attributes associated with these maps include location and coverage of all shrubs, and in some cases, plant height. In addition, we present plot-specific summaries of plant cover and density for each census year and all other information collected, including seedling counts, grass coverage, and annual species enumerations. We reference the repeat photography of these plots, which began in 1906; these images are stored at the Desert Laboratory Collection of Repeat Photography in Tucson. Initial data collection consisted of grid-mapping the plots manually on graph paper; starting in 1993, Total Stations (which allow a direct digitalization, and more accurate mapping) were used to survey root crowns and canopies.

**Key words:** *Arizona; community dynamics; longevity; long-term monitoring; permanent plots; population dynamics; Sonoran Desert; vegetation change.*

The complete data sets corresponding to abstracts published in the Data Papers section of the journal are published electronically in *Ecological Archives* at <http://esapubs.org/archive> (the accession number for each Data Paper is given directly beneath the title).