SUPPORTING INFORMATION (SI1-5):

Pearse, LaMontagne, Koenig. “Interannual Variation in Seed Set…”



**Supporting Information 1:** A histogram showing a right-skewed distribution of the coefficient of variation of seed set of 1086 records of seed set.

Inclusion of a record of seed set in our database was contingent on several criteria. First, we only included records with more than four consecutive years of seed set from a species at a given site. Second, records of seed set were only included if seed set could be assigned to plants within a species or genus. Third, we excluded records that were measured in such an indirect way that extraneous factors could strongly influence their accuracy; an example is mast production inferred from an anticipated correlation with game abundance. Fourth, we only included records of fruit or seed set and excluded records of floral abundance or pollen production because interannual variation in seed set can vary with flower or pollen abundance [5], but does not do so in all cases [24]. Fifth, we excluded records from agricultural settings (orchards, vineyards, etc.) because changes in management practices could affect variation in crop sizes. Finally, we only included records from iteroparous perennial terrestrial plants, whose interannual variation in seed set could not be explained by changes in density or population size of the plants. We retained records of fruit or seed set measured in a variety of qualitative and quantitative ways, ranging from complete counts per individual, timed counts, seed / fruit traps and funnels, and qualitative assessment of seed set. We recorded whether seed set estimations with a dataset could be treated as quantitative or were categorical estimates. Seed set was recorded in a variety of units including counts / individual, timed (relative) counts / individual, counts / area, mass / area, volume / area, seed energy (calories) / area.

|  |
| --- |
| **Supporting Information 2:** Changes in CV of seed set by time period using alternate approaches to bin time periods. Models included mean seed set as a covariate, species as a random effect, and number of individuals in a record as a weight. Df of all likelihood ratio tests was 1. Related to figure 2. |
| **Bin size** | **Minimum inclusion** | **Offset** | **2** | ***P*-value** |
| years | years | years |  |  |
| 20 | 4 | 0 | 24.9 | <0.001 |
| 20 | 8 | 0 | 19.0 | 0.002 |
| 30 | 4 | 0 | 16.6 | <0.001 |
| 20 | 4 | 10 | 8.0 | 0.005 |



**Supporting Information 3:** The frequency of mast years of plants over 20-year time periods spanning the past 115 years. We observed no significant change in masting frequency over time. Masting frequency within a time period is shown as number of mast years / total number of years observed. Related to figure 2.

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**Supporting information 4**: Simulated null distribution (n=1000) of the slope of CVp over time for a mixed model using time interval to predict CVp of seed set (using randomization of time bins as described in methods). Arrow indicates the observed slope of the CVp – time relationship in a model with the real ordering of time bins, which falls outside of the distribution of null values (P<0.001).

**Supporting information 5:** A bibliography of seed set data used in this study. Related to Methods.

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