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How do Plants Do It?

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# Plant Reproduction and Environmental Noise: How Do Plants Do It?

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## Abstract

Plant populations exhibit a wide continuum of reproductive behavior, ranging from nearly constant reproductive output on one end to the extreme of masting (synchronized, highly variable reproduction) on the other. Here, we show that including variability (noise) in density-dependent pollen limitation in current models for pollen-limited plant reproduction may produce any behavior on this continuum. We previously showed that (large) variability in pollination efficiency (a related phenomenon) may induce masting in non-pollen-limited plant populations. Other modeling studies have shown that including variability in accumulated resources (and/or the threshold for reproduction) may induce masting, but do account for masting in non-pollen-limited plant populations. Thus, our results suggest that the range of plant reproductive behavior may be explained with the simple resource budget model combined with the biological realism of variability

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