SUPPLEMENTARY MATERIAL S1
for: The disconnect between short- and long-term population projections
for plant reintroductions

Delissea waianaeensis (Campanulaceae) is a critically endangered tree endemic to the island of O'ahu. The study site is in the Central Kaluaa gulch of the Honouliuli Forest Reserve, which is located in the northern Wai'anae Mountains, on the island of O'ahu (HON; 21° 28' N, -158°6' W).

From 2010–2015, we collected annual demographic data for a total of 597 permanently tagged plants at the field site. The life cycle of *D. waianaeensis* was categorized into four life stages: reproductively mature (>35 cm and reproductive), large immature (> 35 cm and vegetative), small immature (2 cm – 35 cm), and seedling (< 2 cm with cotyldedons). The population stage structure at the start of the study included 74 reproductively mature plants, 131 small and large immature plants, and 217 seedlings.

We used the demographic data to construct a 4 x 4 Lefkovitch matrix **A** (Caswell, 2001) for five transition years (2010–2011, 2011–2012, 2012–2013, 2013–2014, and 2014–2015). Matrix **A** captured the yearly transition probability of stasis σ, survival and growth to the next stage class γ, shrinkage ρ, and seedling recruitment φ_m for the following discrete life stages: reproductively mature (m), large immature (li), small immature (si), and seedling (s).

Matrix **A** can be decomposed into two matrices: a survival-growth matrix **U** and fertility matrix **F**. The **U** matrix represent the survival-growth transition probabilities from time *t* to *t*+1 and **F** captures seedling recruitment φ_m. Zeros represent transition probabilities that were either not biologically feasible (e.g., seedlings remaining seedlings) or not observed during the study.

Survival-growth **U** matrices:

$$\mathbf{U}\ 2010\text{–}2011 = \begin{pmatrix} 0 & 0 & 0 & \varphi_m \\ 0.1448598 & 0.2972973 & 0 & 0 \\ 0 & 0.2972973 & 0.3055556 & 0 \\ 0 & 0.2432432 & 0.6666667 & 0.8947368 \end{pmatrix}$$

$$\mathbf{U}\ 2011\text{–}2012 = \begin{pmatrix} 0 & 0 & 0 & \varphi_m \\ 0.1551724 & 0.47457627 & 0 & 0.0200000 \\ 0 & 0.13559322 & 0.04347826 & 0.0600000 \\ 0 & 0.08474576 & 0.78260870 & 0.8600000 \end{pmatrix}$$

$$\mathbf{U}\ 2012\text{–}2013 = \begin{pmatrix} 0 & 0 & 0 & \varphi_m \\ .001 & 0.4791667 & 0 & 0 \\ 0 & 0.1666667 & 0.8461538 & 0.1549296 \\ 0 & 0.1250000 & 0.1538462 & 0.7887324 \end{pmatrix}$$

$$\mathbf{U}\ 2013\text{–}2014 = \begin{pmatrix} 0 & 0 & 0 & \varphi_m \\ 0.3766234 & 0.2903226 & 0 & 0 \\ 0 & 0.1935484 & 0.2142857 & 0.07812500 \\ 0 & 0.2580645 & 0.7857143 & 0.89062500 \end{pmatrix}$$

$$\mathbf{U}\ 2014\text{–}2015 = \begin{pmatrix} 0 & 0 & 0 & \varphi_m \\ 0.125 & 0.2978723 & 0 & 0 \\ 0 & 0.1489362 & 0.2222222 & 0.01020408 \\ 0 & 0.1063830 & 0.3333333 & 0.86734694 \end{pmatrix}$$

Fertility **F** for years 2009-2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, and 2014–2015 respectively:

F `<- c(3.09, 0.5686275, 0.1523179, 0.2326284, 0.05592105, 0.02105263)`

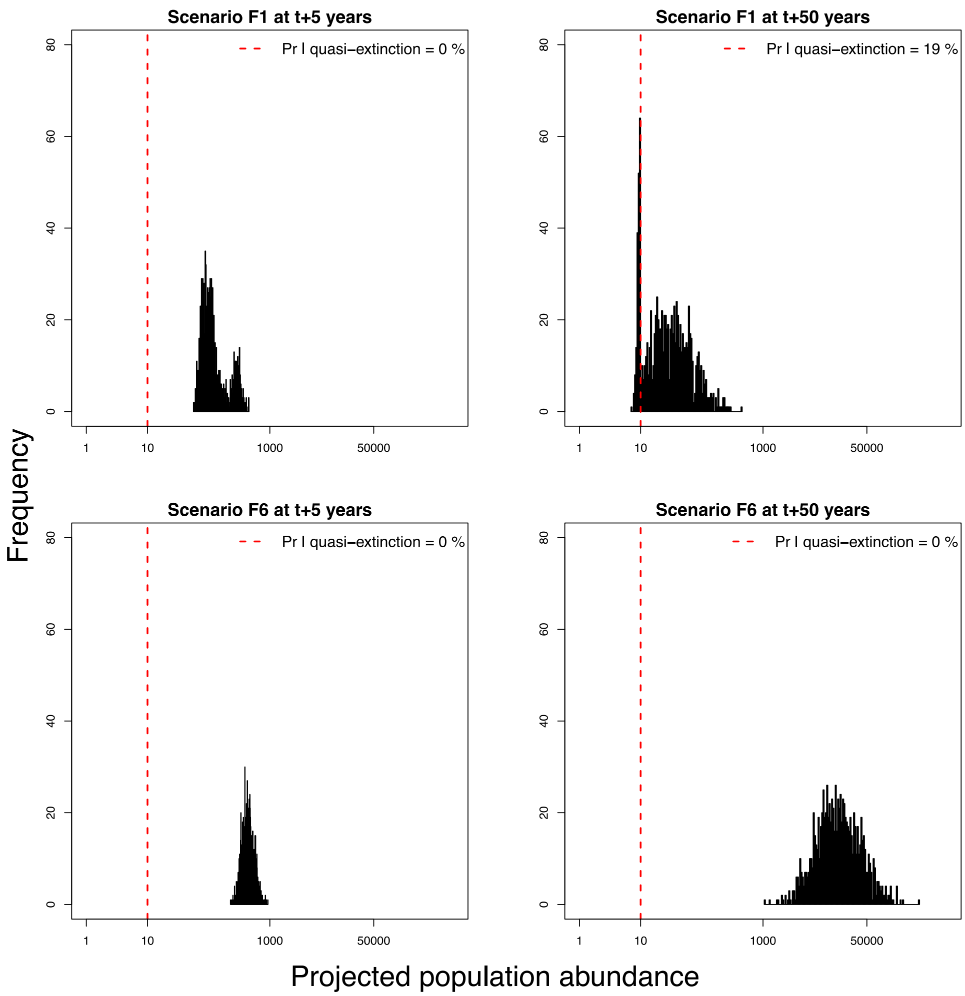

Figure S1: The probability of quasi extinction in a stochastically variable environment for scenarios **F1** and **F6**. The projections were based on 1,000 independent samples paths of length $t = 5$ years and $t = 50$ years respectively. The histograms were plotted on a log10 scale, and the x-axis was back transformed. The red dashed line represents the quasi-extinction threshold of 10 individuals.