Figure 1: A MAP

A diagram of a seedling process

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Figure 2: A timeline of hypothesized pinyon jay responses (top) and the progression of seed and cone development (bottom) following a favorable climate year for cone development. We outline three hypotheses driving the temporal relationships between pinyon jay and seed availability, including H1: jays ‘anticipate’ seed availability through utilization of other foods (e.g., acorns, juniper berries) or because they see cones developing in an area; H2: jays ‘respond’ to seed availability in the nesting season after they cache seeds and H3: jays have a ‘delayed response’ to seed availability with a delay as the young from the caching year enter the breeding population 1.5-2 years later.

A graph of a graph showing the effects of covariate

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Figure 3: Covariate effects for all main covariates and their interactions with cones. All covariates were scaled and so their relative magnitudes of effect can be compared. All values represent posterior median and 95% Bayesian Credible Intervals and any covariate ranges that cross the dashed line at zero have no clear effect on pinyon jay abundance.

A graph showing the growth of seedlings

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Figure 4: Importance weights for the years considered for the relationship between pinyon jays and pinyon cone (seed) availability. Colored boxes indicate the three ecological hypotheses about the time period(s) of the relationship between jays and cones. The dashed line indicates the distinction between the years before cones (left) and years after cones (right).

Figure 5: Interaction plots for the four covariates with significant interactive effects with cone (seed) availability, including: a) precipitation, b) maximum temperature, c) monsoonality, and d) pinyon basal area. Darker pink/red color corresponds to a greater number of birds in that combination of covariates. Black circles represent the distribution of the observed data. The predicted number of birds, lambda, is presented on the log scale to better highlight differences.