TABLE 1: Description of parameters for prior distributions at the highest level (hyperparameters).

Parameter	Description	Distribution
VIABILITY TRIALS		
μ_0^g	Population mean germination, age 1	normal(0, 1000)
μ_0^v	Population mean viability, age 1	normal(0, 1000)
$\mu_0^{g_2}$	Population mean germination, age 2	normal(0, 1000)
$\mu_0^{v_2}$	Population mean viability, age 2	normal(0, 1000)
σ_0^g	Population S.D. of germination, age 1	half-normal(0, $3^1/_3$)
σ_0^v	Population S.D. of viability, age 1	half-normal(0, $3^1/_3$)
$\sigma_0^{g_2}$	Population S.D. of germination, age 2	half-normal(0, $3^1/_3$)
$\sigma_0^{v_2}$	Population S.D. of viability, age 2	half-normal(0, $3^1/_3$)
σ^g	Population and year S.D. of germination, age 1	half-normal(0, $3^1/_3$)
σ^v	Population and year S.D. of viability, age 1	half-normal(0, $3^1/_3$)
σ^{g_2}	Population and year S.D. of germination, age 2	half-normal(0, $3^1/_3$)
σ^{v_2}	Population and year S.D. of viability, age 2	half-normal(0, $3^1/_3$)
SEED BAG BURIAL EXPERIMENTS		
μ_0^1	Population mean intact to January 1	normal(0, 1000)
μ_0^2	Population mean germination in January 1	normal(0, 1000)
μ_0^3	Population mean intact to October 1	normal(0, 1000)
μ_0^4	Population mean intact to January 2	normal(0, 1000)
σ_0^1	Population S.D. of intact to January 1	half-normal(0, $3^1/_3$)
σ_0^2	Population S.D. of germination in January 1	half-normal(0, $3^1/_3$)
σ_0^3	Population S.D. of intact to October 1	half-normal(0, $3^1/_3$)
σ_0^4	Population S.D. of intact to January 2	half-normal(0, $3^1/_3$)
σ^1	Population and year S.D. of intact to January 1	half-normal(0, $3^1/_3$)
σ^2	Population and year S.D. of germination in January 1	half-normal(0, $3^1/_3$)
σ^3	Population and year S.D. of intact to October 1	half-normal(0, $3^1/_3$)
σ^4	Population and year S.D. of intact to January 2	half-normal(0, $3^1/_3$)
SEEDLING SURVIVAL TO FRUITING		
μ_0^{survival}	Population mean seedling survival	normal(0, 1000)
$\sigma_0^{\text{survival}}$	Population S.D. of seedling survival	uniform(0, 1.5)
σ^{survival}	Population and year S.D. of seedling survival	uniform(0, 1.5)
FRUITS PER PLANT		
μ_0^{fruits}	Population mean fruits per plant	normal(0, 1000)
σ_0^{fruits}	Population S.D. of fruits per plant	uniform(0, 1.5)
κ^{fruits}	Population and year dispersion of fruits per plant	gamma(0.001, 0.001)
SEEDS PER FRUIT		
μ_0^{seeds}	Population mean fruits per plant	normal(0, 1000)
σ_0^{seeds}	Population S.D. of fruits per plant	uniform(0, 1.5)
κ^{seeds}	Population and year dispersion of fruits per plant	gamma(0.001, 0.001)

TABLE 2: Description of parameters (obtained by marginalizing over hyperparameters).

Parameter	Description
VIABILITY TRIALS	
ν_1^g	Probability that an intact seed germinates in germination tests in October of year $t+1$, for seeds produced in year t
ν_1^v	Probability that an intact seed that did not germinate in tests is viable in October of year $t+1$, for seeds produced in year t
ν_2^g	Probability that an intact seed germinates in germination tests in October of year $t+2$, for seeds produced in year t
ν_2^v	Probability that an intact seed that did not germinate in tests is viable in October of year $t+2$, for seeds produced in year t
SEED BAG BURIAL EXPERIMENTS	
θ_1	Probability that a seed buried in October of year t is intact in January of $t+1$, for seeds produced in year t
θ_2	Probability of emergence of seeds in January in year $t+1$ conditional on being intact in January in year $t+1$, for seeds produced in year t
θ_3	Probability that a seed buried in October of year t is intact in October of $t+1$ conditional on being intact in January of $t+1$, for seeds produced in year t
θ_4	Probability that a seed buried in October of year t is intact in January of $t+2$ conditional on being intact in October of $t+1$, for seeds produced in year t
SEEDLING SURVIVAL TO FRUITING	
σ	Probability that a seedling survives to become a fruiting plant
FRUITS PER PLANT	
F	Number of total fruit equivalents per plant
SEEDS PER FRUIT	
ϕ	Number of seeds per undamaged fruit

TABLE 3: Description of derived quantities (obtained as functions of marginal posterior distributions).

Derived quantity	Description
ν_1	Probability that a seed buried in October of year t is viable in October of year $t+1$ conditional on being intact, for seeds produced in year t
ν_2	Probability that a seed buried in October of year t is viable in October of year $t+2$ conditional on being intact, for seeds produced in year t
s_1	Probability that a seed buried in October of year t is intact and viable in January of $t+1$, for seeds produced in year t
g_1	Probability that a seed germinates in January in year $t+1$ conditional on being intact and viable in January in year $t+1$, for seeds produced in year t
s_2	Probability that a seed buried in October of year t is intact and viable in October of $t+1$ conditional on being intact and viable in January of $t+1$, for seeds produced in year t
s_3	Probability that a seed buried in October of year t is intact and viable in January of $t+2$ conditional on being intact and viable in October of $t+1$, for seeds produced in year t