

APPENDIX 2. Fine-scale perturbation analysis of input demographic rates in a stochastic population viability analysis for large-bodied woodpeckers. See Appendix 1 for details on calculations.

Model inputs						Extinction rate (e_i)				Change in e_i (Δe_i) ^g		
N_0^a	S^b	σ_S^2	F^c	σ_F	λ^d	Orig. ^e	N_0^f	S^f	F^f	N_0	S	F
5	0.7	0.002	0.67	0.17	0.935	1.000	1.000	1.000	0.995	0.000	0.000	0.005
17	0.7	0.002	0.67	0.17	0.935	1.000	1.000	1.000	0.995	0.000	0.000	0.005
30	0.7	0.002	0.67	0.17	0.935	0.995	0.995	0.995	0.990	0.000	0.000	0.005
5	0.7	0.002	1.16	0.17	1.106	0.385	0.395	0.315	0.315	-0.010	0.070	0.070
17	0.7	0.002	1.16	0.17	1.106	0.140	0.165	0.100	0.080	-0.025	0.040	0.060
30	0.7	0.002	1.16	0.17	1.106	0.125	0.095	0.080	0.115	0.030	0.045	0.010
5	0.7	0.002	1.65	0.17	1.278	0.065	0.080	0.045	0.060	-0.015	0.020	0.005
17	0.7	0.002	1.65	0.17	1.278	0.000	0.005	0.000	0.000	-0.005	0.000	0.000
30	0.7	0.002	1.65	0.17	1.278	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.8	0.016	0.67	0.17	1.068	0.640	0.595	0.585	0.470	0.045	0.055	0.170
17	0.8	0.016	0.67	0.17	1.068	0.335	0.375	0.210	0.230	-0.040	0.125	0.105
30	0.8	0.016	0.67	0.17	1.068	0.315	0.225	0.140	0.175	0.090	0.175	0.140
5	0.8	0.016	1.16	0.17	1.264	0.025	0.020	0.025	0.035	0.005	0.000	-0.010
17	0.8	0.016	1.16	0.17	1.264	0.000	0.000	0.000	0.005	0.000	0.000	-0.005
30	0.8	0.016	1.16	0.17	1.264	0.000	0.000	0.005	0.000	0.000	-0.005	0.000
5	0.8	0.016	1.65	0.17	1.460	0.020	0.005	0.000	0.005	0.015	0.020	0.015
17	0.8	0.016	1.65	0.17	1.460	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.8	0.016	1.65	0.17	1.460	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.9	0.051	0.67	0.17	1.202	0.050	0.035	0.035	0.030	0.015	0.015	0.020
17	0.9	0.051	0.67	0.17	1.202	0.010	0.010	0.000	0.005	0.000	0.010	0.005
30	0.9	0.051	0.67	0.17	1.202	0.000	0.005	0.005	0.000	-0.005	-0.005	0.000
5	0.9	0.051	1.16	0.17	1.422	0.015	0.000	0.005	0.015	0.015	0.010	0.000
17	0.9	0.051	1.16	0.17	1.422	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.9	0.051	1.16	0.17	1.422	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.9	0.051	1.65	0.17	1.643	0.005	0.000	0.005	0.000	0.005	0.000	0.005
17	0.9	0.051	1.65	0.17	1.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.9	0.051	1.65	0.17	1.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000

^a Initial number of adult females.

^b Annual adult survival rate.

^c Fecundity; the number of juvenile females recruited per adult female.

^d Deterministic population growth rate, assuming annual juvenile survival = 0.5; $\lambda = S + F * 0.5 * S$.

^e Predicted extinction rate based on original set of input values.

^f Predicted extinction rate based on augmented set of input values where one parameter increased by small, proportional amount and is expected to decrease extinction rate.

^g Change in extinction rate calculated by subtracting the extinction rate based on an augmented set of input values (i.e., one input value increased by small, proportional amount and is expected to decrease extinction rate) from the extinction rate based on original set of input values.