Appendix 1

Simulation results for gradients in K, λ, σ and ϵ and a mixed fragmentation gradient in K and μ

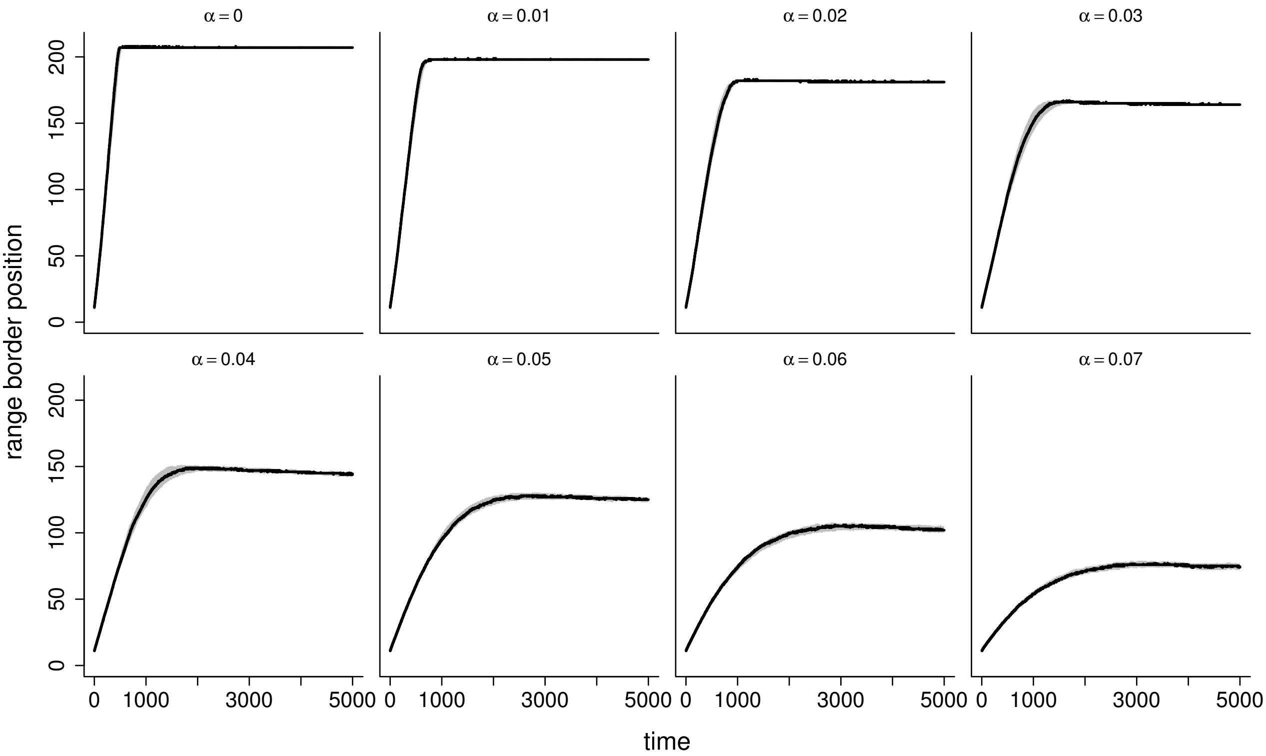

Figure A1: Range border position as a function of simulation time for a gradient in patch size (K). Patch size decreases from $K_{x=1} = 100$ to $K_{x=200} = 0$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

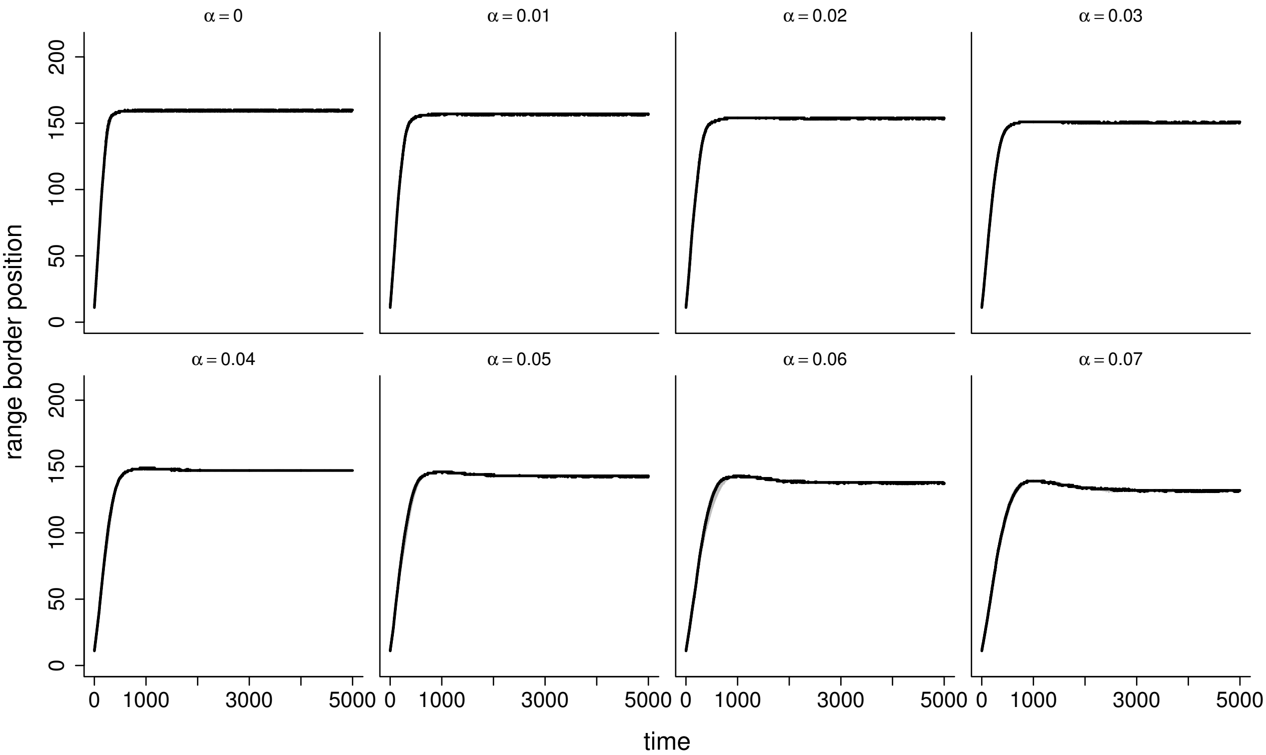

Figure A2: Range border position as a function of simulation time for a gradient in growth rate (λ). Growth rate decreases from $\lambda_{x=1} = 4$ to $\lambda_{x=200} = 0$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

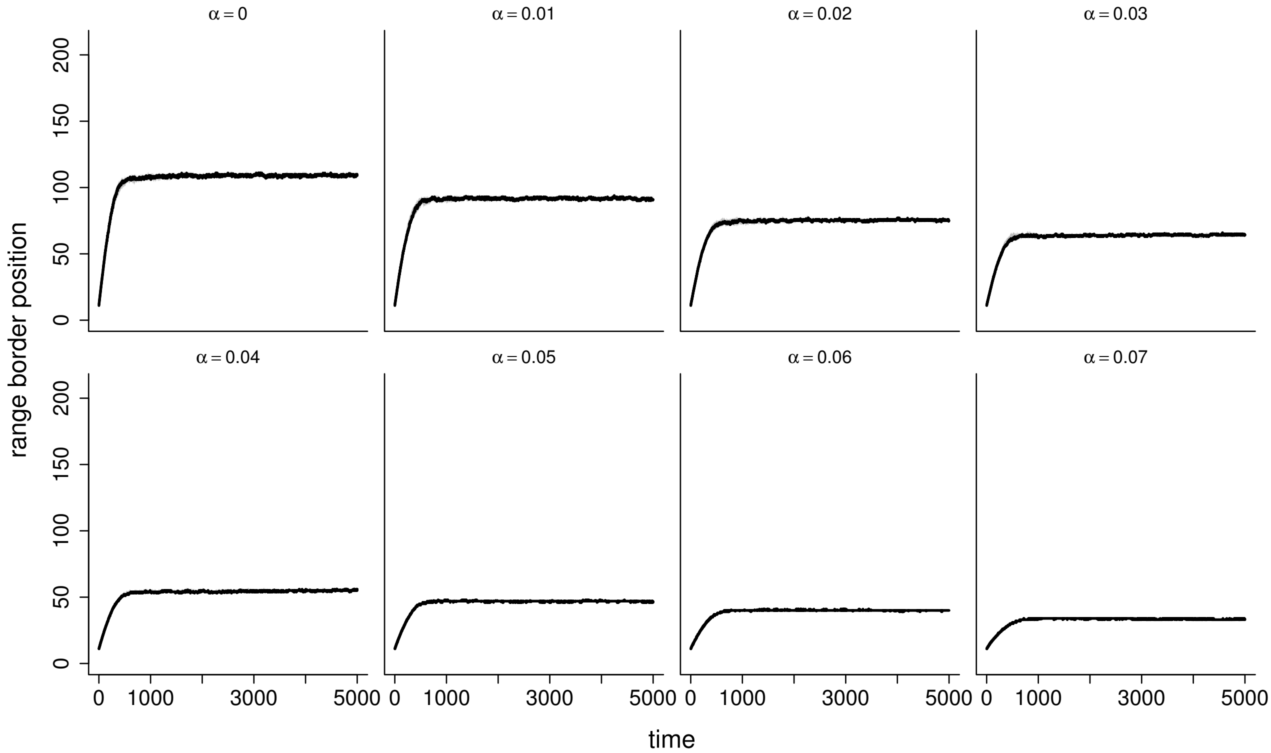

Figure A3: Range border position as a function of simulation time for a gradient in demographic stochasticity (σ). Demographic stochasticity increases from $\sigma_{x=1} = 0$ to $\sigma_{x=200} = 10$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

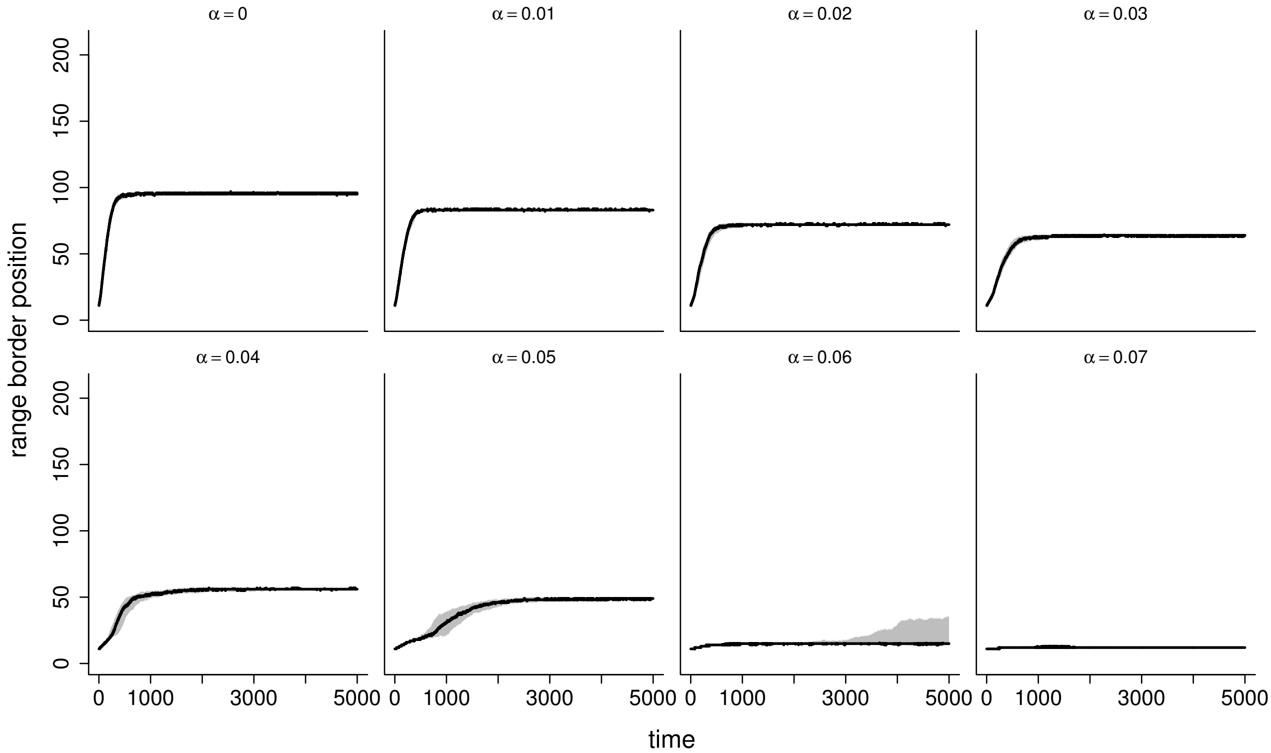

Figure A4: Range border position as a function of simulation time for a gradient in catastrophic extinction risk (ϵ). Extinction risk increases from $\epsilon_{x=1} = 0$ to $\epsilon_{x=200} = 1$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

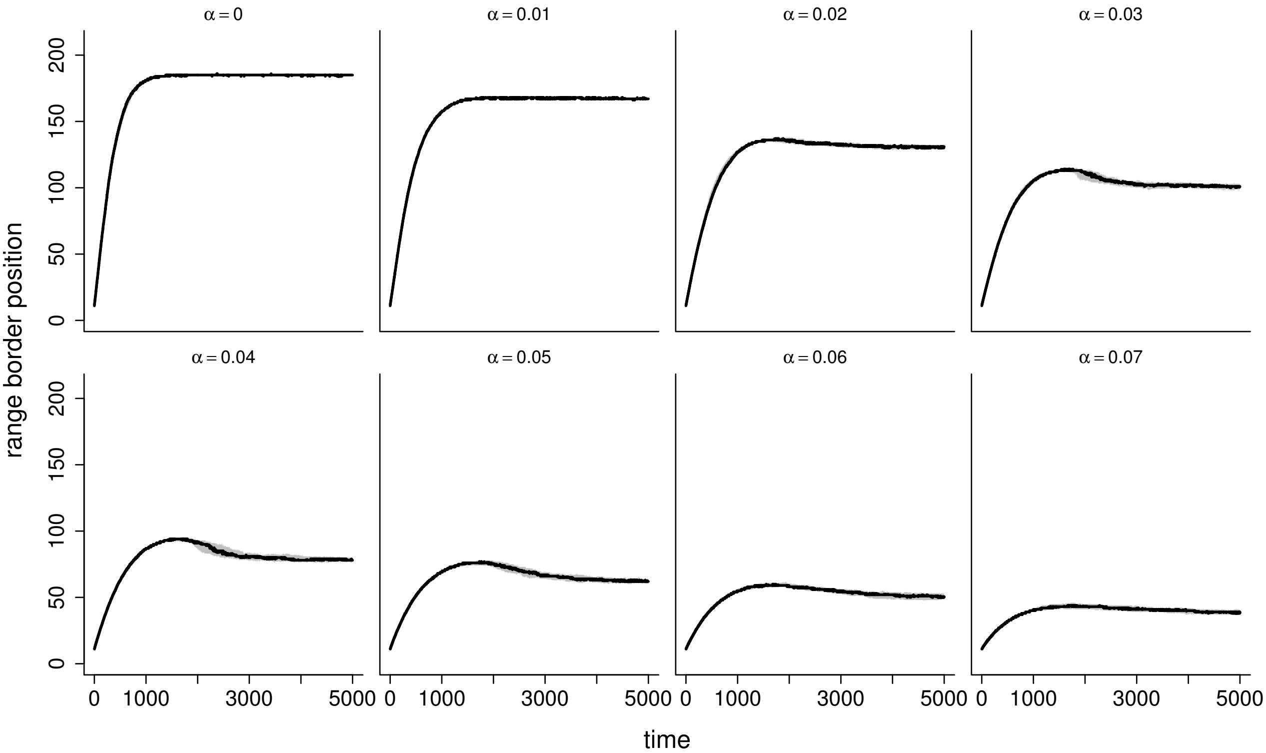

Figure A5: Range border position as a function of simulation time for a gradient in both patch size (K) and dispersal mortality (μ). Patch size decreases from $K_{x=1} = 100$ to $K_{x=200} = 0$ and dispersal mortality increases from $\mu_{x=1} = 0.2$ to $\mu_{x=200} = 1$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

Appendix 2

Simulation results for all gradients assuming the evolution of a negative exponential dispersal kernel

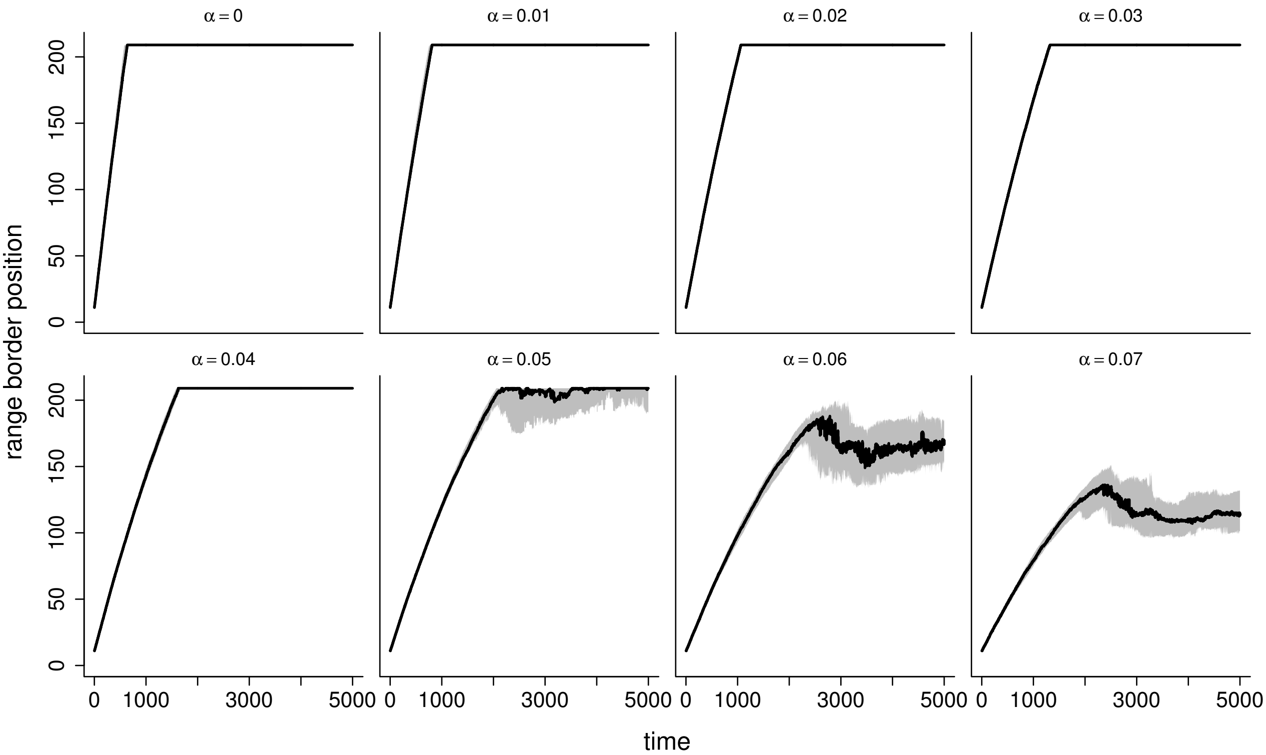

Figure A6: Range border position as a function of simulation time for a gradient in dispersal mortality (μ) assuming the evolution of a negative exponential dispersal kernel instead of emigration propensity. Dispersal mortality increases from $\mu_{x=1} = 0.2$ to $\mu_{x=200} = 1$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

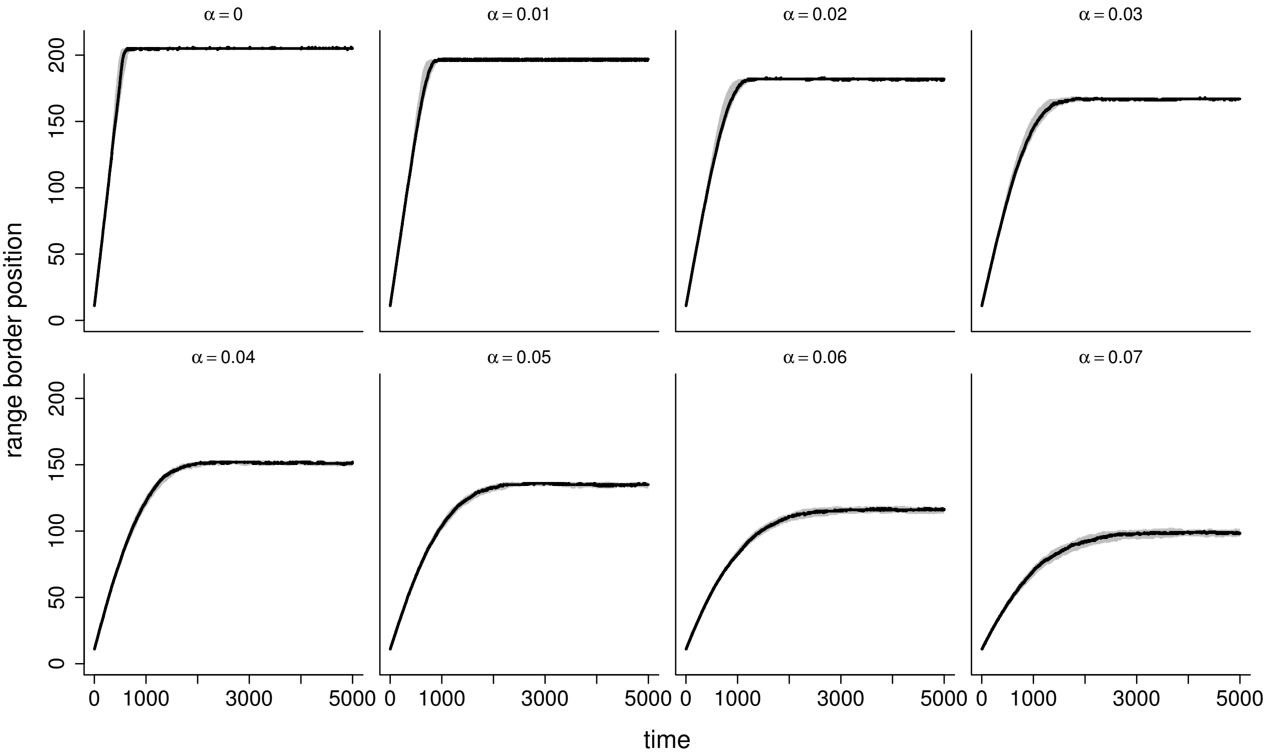

Figure A7: Range border position as a function of simulation time for a gradient in patch size (K) assuming the evolution of a negative exponential dispersal kernel instead of emigration propensity. Patch size decreases from $K_{x=1} = 100$ to $K_{x=200} = 0$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

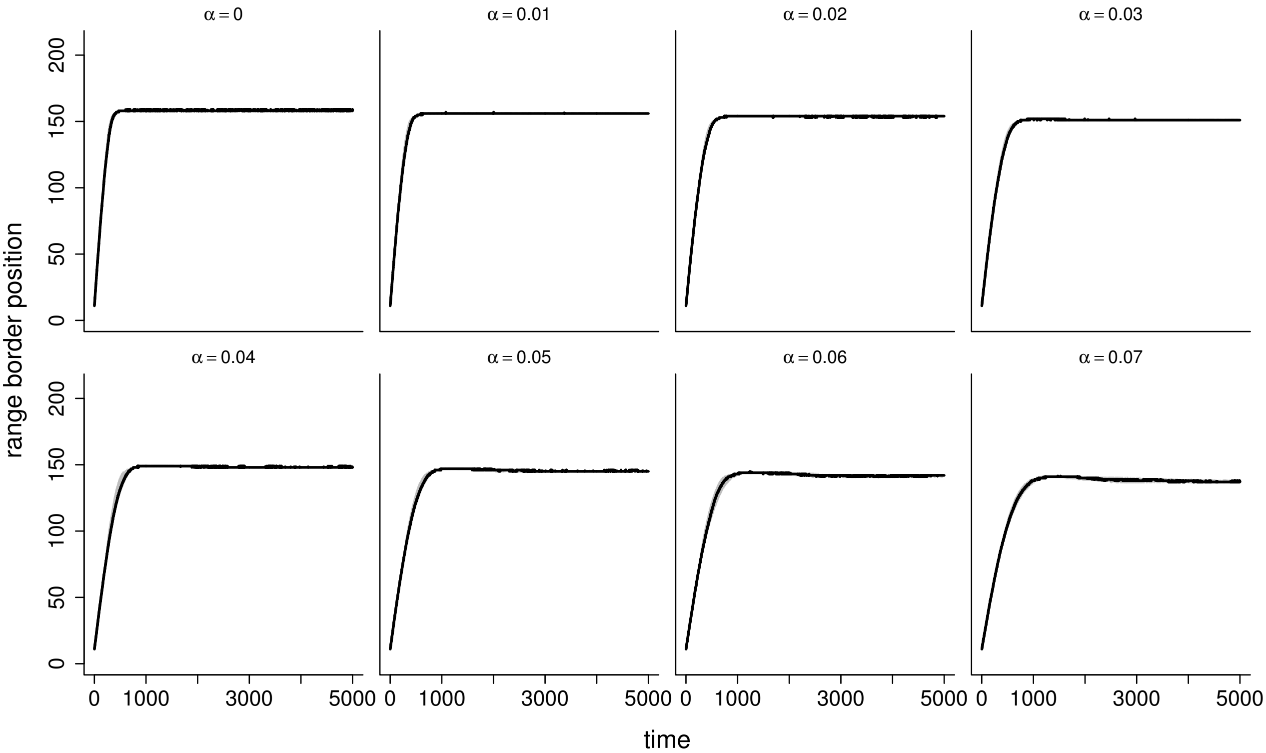

Figure A8: Range border position as a function of simulation time for a gradient in growth rate (λ) assuming the evolution of a negative exponential dispersal kernel instead of emigration propensity. Growth rate decreases from $\lambda_{x=1} = 4$ to $\lambda_{x=200} = 0$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

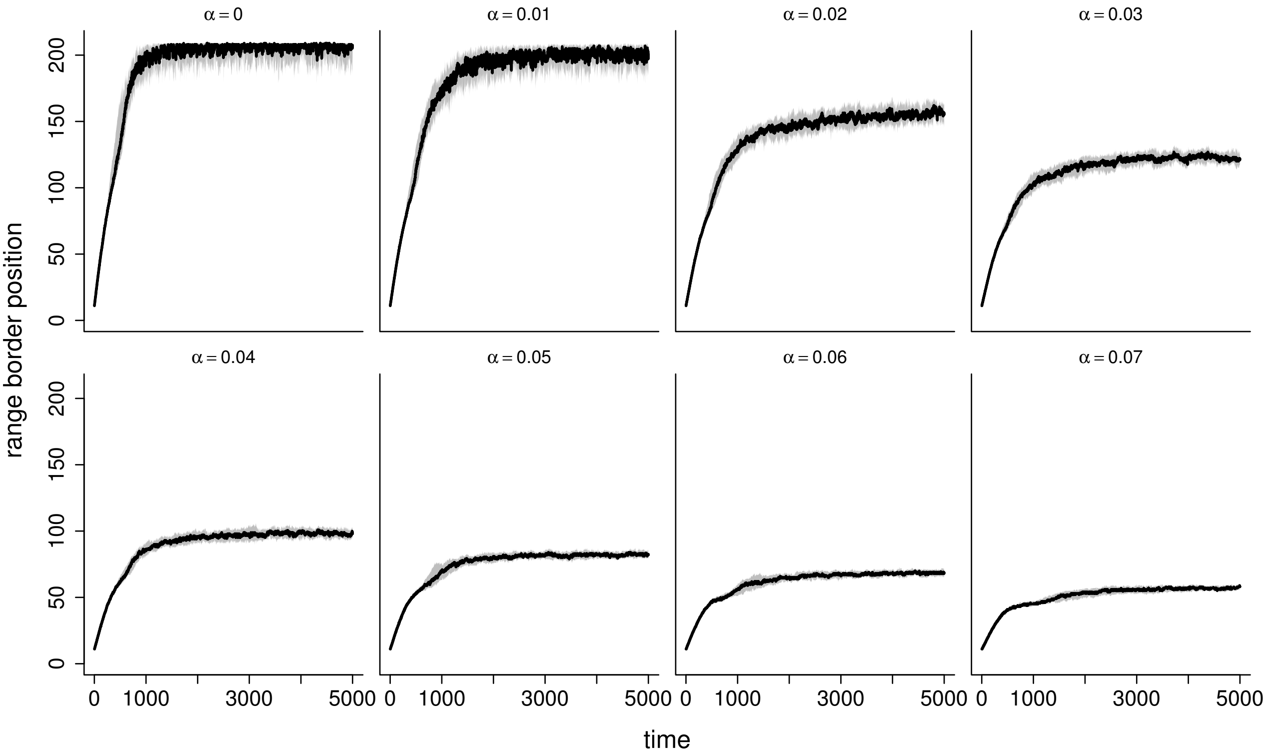

Figure A9: Range border position as a function of simulation time for a gradient in demographic stochasticity (σ) assuming the evolution of a negative exponential dispersal kernel instead of emigration propensity. Demographic stochasticity increases from $\sigma_{x=1} = 0$ to $\sigma_{x=200} = 10$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.

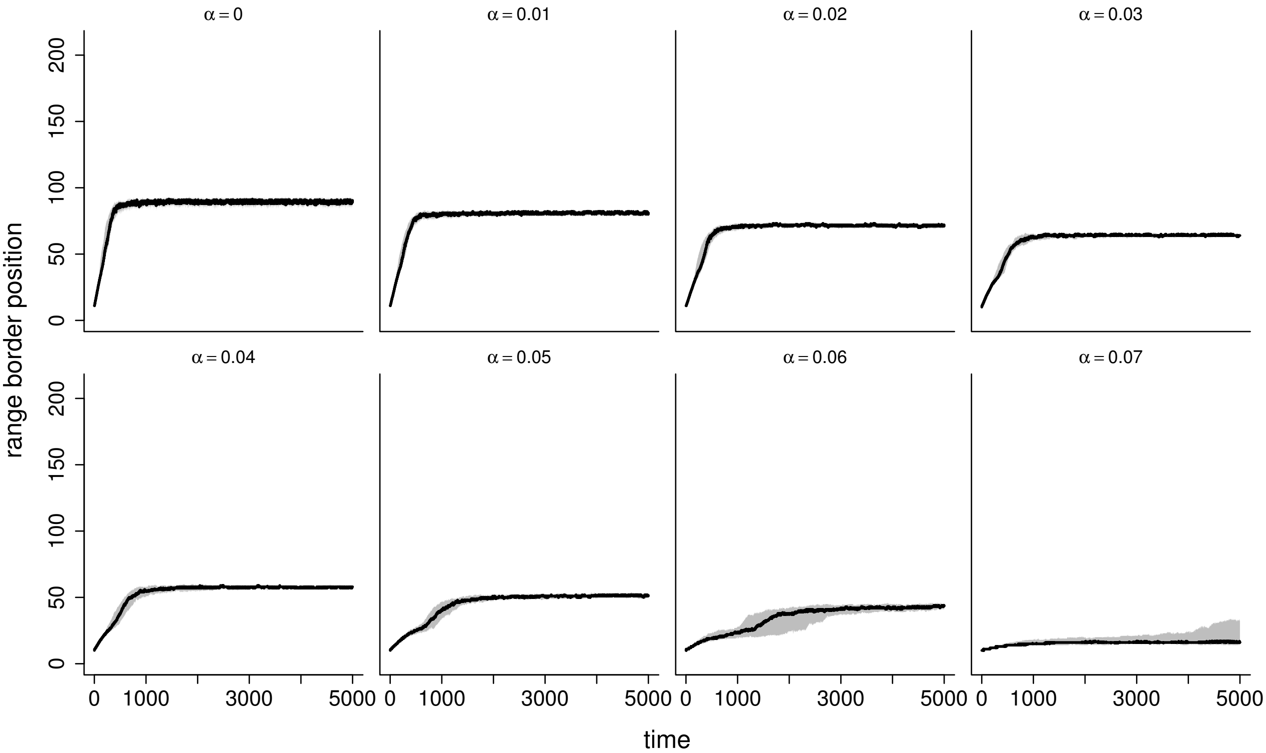

Figure A10: Range border position as a function of simulation time for a gradient in catastrophic extinction risk (ϵ) assuming the evolution of a negative exponential dispersal kernel instead of emigration propensity. Extinction risk increases from $\epsilon_{x=1} = 0$ to $\epsilon_{x=200} = 1$. Allee effect strength increases from the top left to the bottom right panel. For parameter values see main text. The black lines show the median values of 50 replicate simulations, the shaded grey areas denote 25% - and 75% quantiles.