Appendix title

Appendix A. Sensitivity analysis for spore loss rates.

Appendix description

Appendix A. Our results were highly robust to variation in daily proportional spore loss rates. For all tested values of l (from 0.5 to 0.99 d^{-1} in increments of 0.01) in Eq. 1, the most parsimonious models were consistently the best GLMMs described in the results (see Table 1) for probabilities of occupancy ($w_i \geq 0.999$; $\Delta_i \geq 84.2$ for competing models), extinction ($w_i \geq 0.998$; $\Delta_i \geq 12.3$ for competing models), and colonization ($w_i \geq 0.778$; $\Delta_i \geq 2.5$ for competing models).

Connectivity and patch size were significant predictors of probabilities of local giant kelp occupancy ($P < 0.001$; likelihood-ratio $\chi^2 \geq 40.41$), extinction ($P < 0.001$; likelihood-ratio $\chi^2 \geq 14.52$), and colonization ($P \leq 0.002$; likelihood-ratio $\chi^2 \geq 9.16$) irrespective of l. For probabilities of occupancy, extinction, and colonization, increasing values of l had little influence on the relative effect of patch size. However, increases in l were associated with an increase in the relative effect of connectivity on probabilities of occupancy and extinction until $l \approx 0.93$ and $l \approx 0.81$, respectively, at which point the effect of connectivity declined slightly (Fig. B1). Increases in l were matched by slight increases in the effect of connectivity of the probability of colonization (Fig. B1). The qualitative relationship between the effect sizes of connectivity and patch size were unchanged by variation in l, with connectivity having 0.75–1.00×, 0.61–0.80×, and 0.03–0.17× the effect of patch size on probabilities of occupancy, extinction, and colonization, respectively.

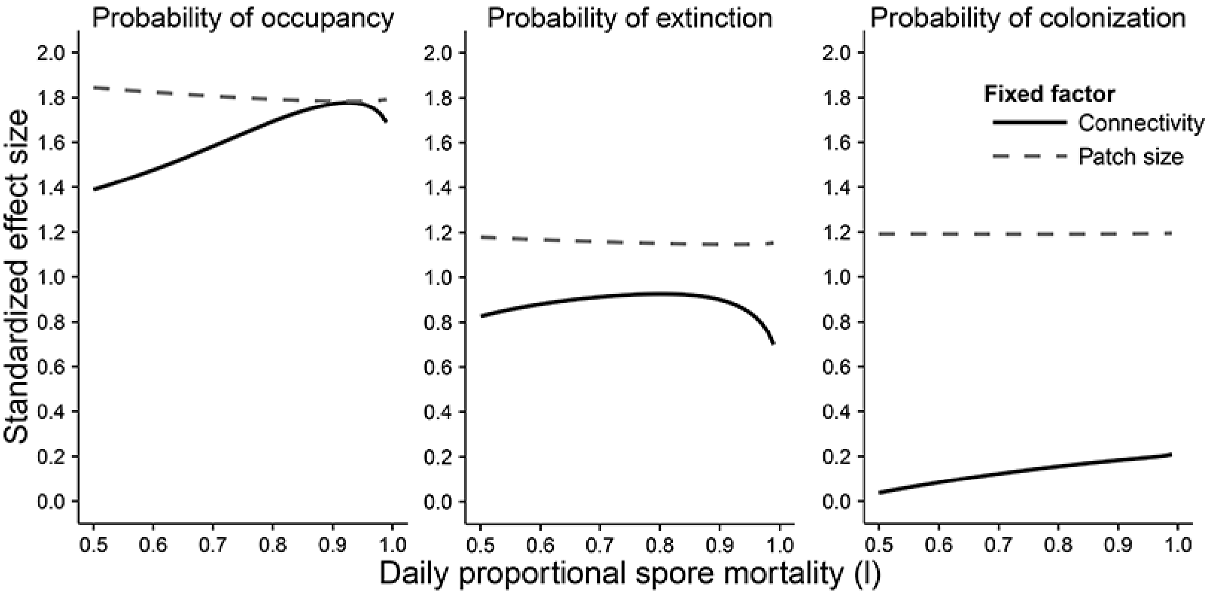

FIG. A1. Line graphs showing the relationships between variation in the daily proportional spore loss rate (*l* in Eq. 1) and standardized effect sizes for each fixed factor (*Connectivity* and *Patch size* (i.e., the log of patch area, *ln*[*Area*])) in the most parsimonious model (see Table 1).