White, E.R. and A.T. Smith. 2018. The role of spatial structure in the collapse of regional metapopulations. *Ecology*.

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Corresponding R scripts and data can be found at https://github.com/erwhite1/BodiePikaMetapop

# Appendix S7 Long-term trends

In the main manuscript, we presented results comparing the model to census data starting in 1972. We also examined model predictions into the future. We see that the northern population of pikas in Bodie rarely goes extinct in model projections (Fig. S1). Conversely, the southern area population usually goes extinct within a couple of decades (Fig. S1). Here we still assume that pikas can only move a maximum of 300 meters (Smith 1974). On longer time-scales long-distance dispersal events may be more important. For example, there is one recent report of a pika at Bodie having successfully colonized an isolated patch a minimum of 1.2 km from the nearest source population (Nichols et al. 2016).

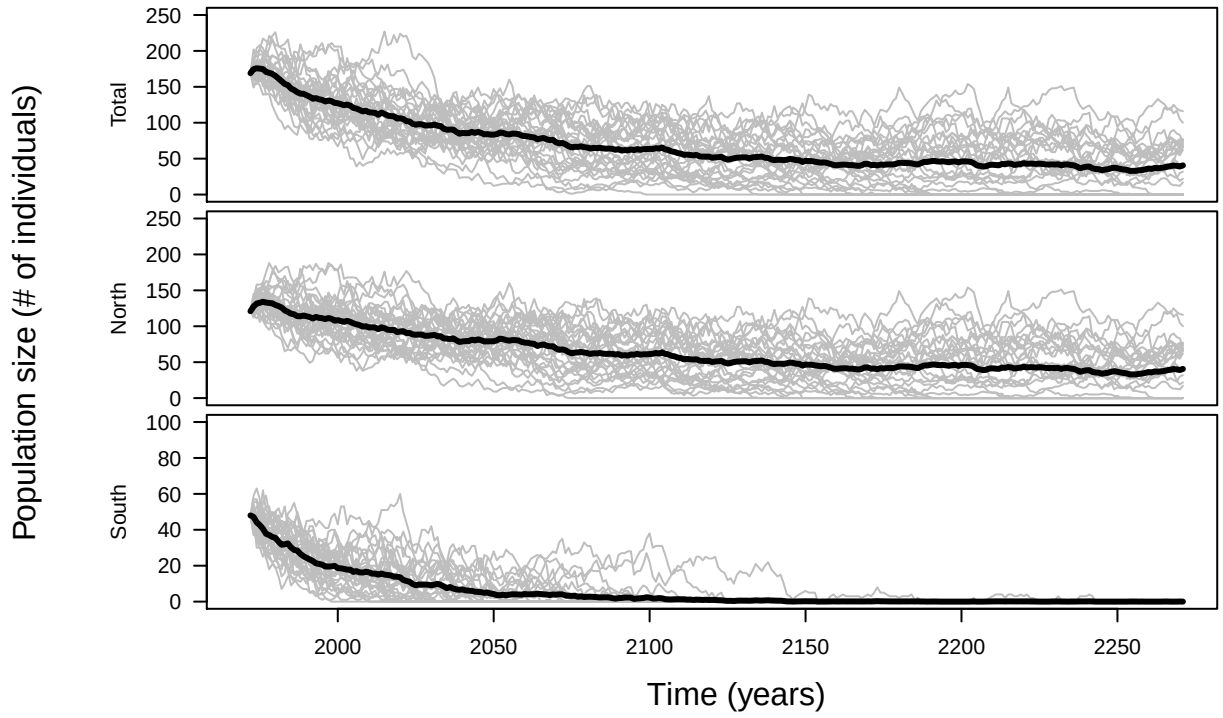


Figure S1: Projected long-term dynamics of pikas at Bodie, California. Individual grey lines denote individual model runs and the dark black line is the average population size across 1000 trials.

# References

Nichols, L. B., K. B. Klingler, M. M. Peacock, S. Western, and N. American. 2016. American pikas (*Ochotona princeps*) extirpated from the historic masonic mining district of eastern California. Western North American Naturalist 76:163–171.

Smith, A. T. 1974. The distribution and dispersal of pikas: Consequences of insular population structure. Ecology 55:1112–1119.