

Ecography

**ECOG-01576**

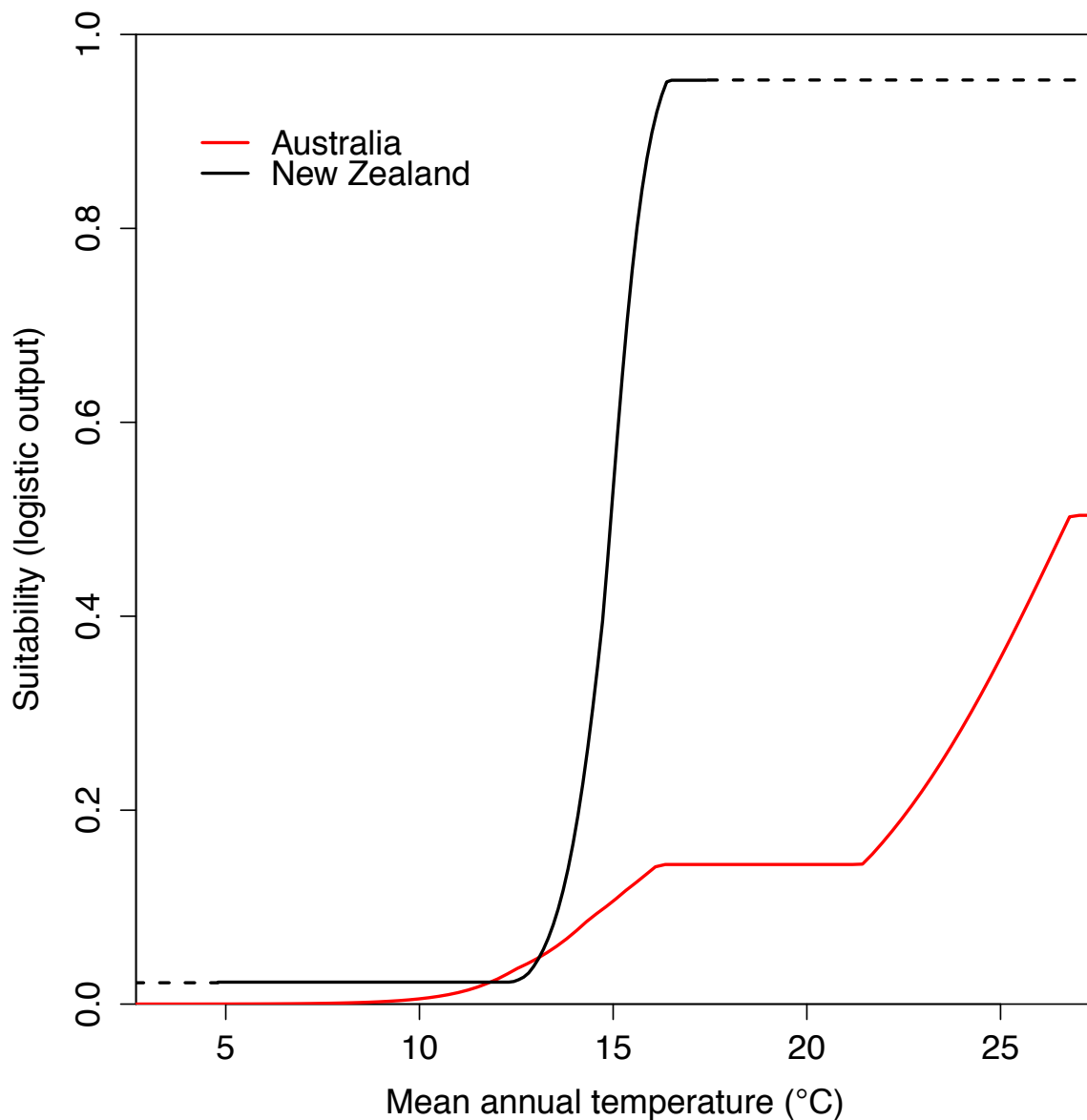
Tingley, R., Thompson, M. B., Hartley, S. and Chapple, D. G. 2015. Patterns of niche filling and expansion across the invaded ranges of an Australian lizard. – Ecography doi: [10.1111/ecog.01576](https://doi.org/10.1111/ecog.01576)

**Supplementary material**

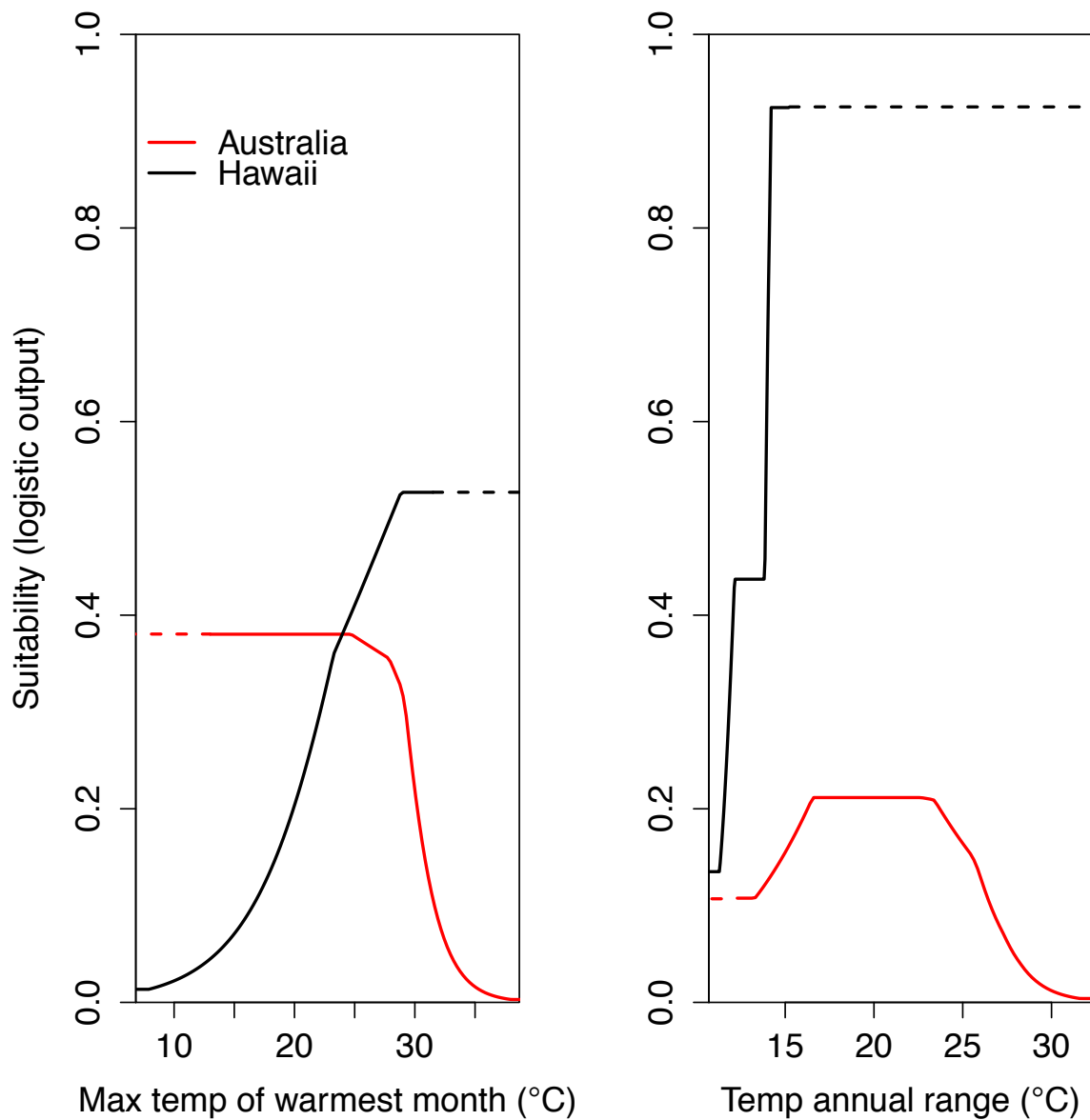
## Appendix 1

**Figure A1.** Global multivariate environmental similarity surfaces based on data from the native (A), New Zealand (B), Hawaiian (C), and global (D) ranges of *Lampropholis delicata*. Negative values

correspond to grid cells in which at least one climate variable has a value that is outside of the reference range. The magnitude of these values indicates how far the least similar predictor is outside of the range of model calibration. Positive values (shown in black) indicate climates that are similar to those within the reference set.

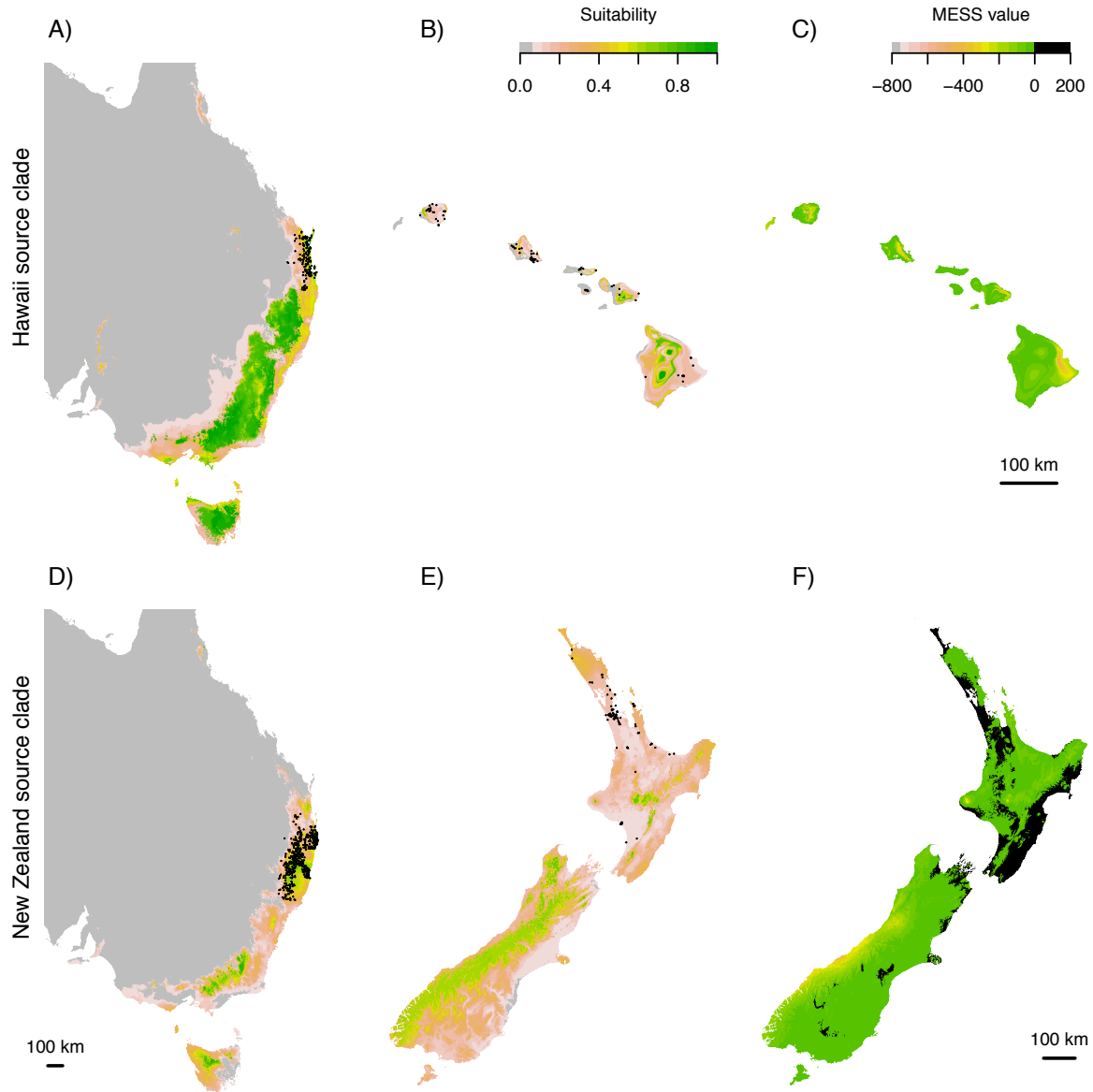


**Figure A2.** Response curves illustrating the relationship between *Lampropholis delicata* occurrence and the strongest predictor in a ecological niche model (ENM) fitted to the species' New Zealand range (mean annual temperature). Response curves are shown for ENMs trained in New Zealand and Australia. Dotted lines show predictor values that are outside the range of values present within each geographic range. The ENM fitted to the species' New Zealand range estimated a much stronger positive relationship between mean annual temperature and relative likelihood of occurrence than the ENM fitted to the Australian range. This relationship needed to be extrapolated when projected into warmer climates in Australia.



**Figure A3.** Response curves illustrating relationships with the two strongest predictors of the occurrence of *Lampropholis delicata* based on an ecological niche model (ENM) fitted to the species' Hawaiian range (A: maximum temperature of the warmest month, B: temperature annual range). Response curves are shown for ENMs trained in Hawaii and Australia. Dotted lines show predictor values that are outside the range of values present within each geographic range. In Hawaii, there was a strong positive effect of maximum temperature of the warmest month on occurrence up to ~29 °C; whereas in Australia, the effect of this variable was constant before it declined above 25 °C. A similar

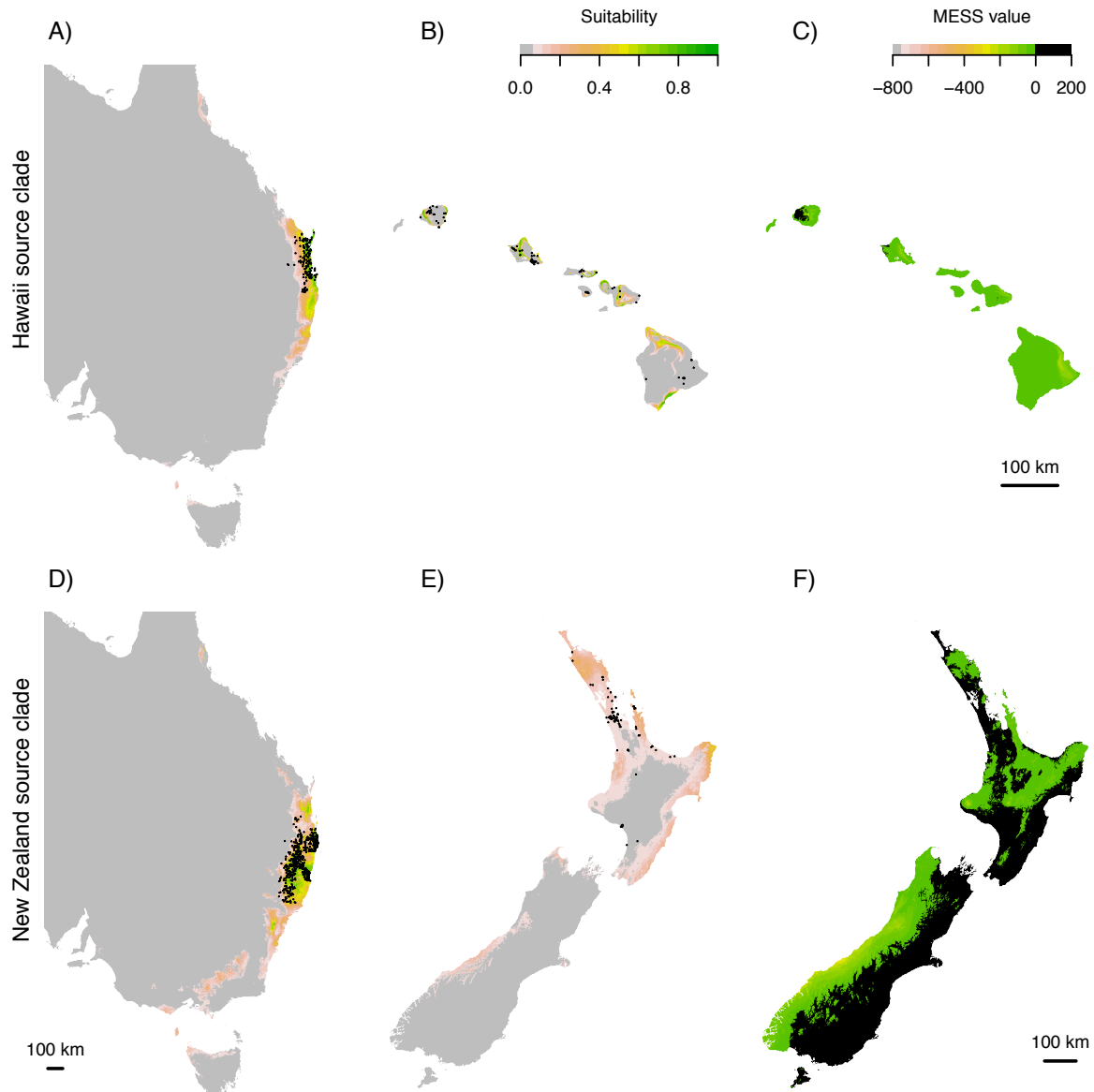
situation was evident for temperature annual range (B), although extrapolation in Australia was much greater than for maximum temperature of the warmest month.



**Figure A4.** Ecological niche model (ENM) projections of the potential distributions of *Lampropholis delicata* based on occurrence data from the native-range clades that were the sources for the Hawaii (A-C) and New Zealand (D-F) introductions. ENM background environments included all bioregions that were occupied by each clade in Australia. Panels (A) and (D) show the geographic origins of each source clade and climatic suitabilities from an ENM trained on data from each clade. Panels (B) and (E) show projections of these ENMs onto Hawaii and New Zealand, respectively. Black dots represent occurrence records of *L. delicata*. Multivariate environmental similarity surfaces (C, F) show areas of novel climatic space. Negative values correspond to grid cells in which at least one climate variable has a value that is outside of the reference range. The magnitude of these values

indicates how far the least similar predictor is outside of the range of model calibration. Positive values (shown in black) indicate climates that are similar to those within the reference set.





**Figure A5.** Ecological niche model (ENM) projections of the potential distributions of *Lampropholis delicata* based on occurrence data from the native-range clades that were the sources for the Hawaii (A-C) and New Zealand (D-F) introductions. In contrast to Fig. S4, ENM background environments included all bioregions that were occupied by the species in Australia. Panels (A) and (D) show the geographic origins of each source clade and climatic suitabilities from an ENM trained on data from each clade. Panels (B) and (E) show projections of these ENMs onto Hawaii and New Zealand, respectively. Black dots represent occurrence records of *L. delicata*. Multivariate environmental similarity surfaces (C, F) show areas of novel climatic space. Negative values correspond to grid cells in which at least one climate variable has a value that is outside of the reference range. The magnitude

of these values indicates how far the least similar predictor is outside of the range of model calibration. Positive values (shown in black) indicate climates that are similar to those within the reference set.