Table 1: Results from subset of linear models testing whether species’ observed range expansion rate is best explained by species’ potential dispersal rates, the velocity of climate change, or the minimum of the two (i.e., the minimum rate). The velocity of climate change model fit the response variable (observed range expansion rate; continuous, km/y) as a function of the 90th percentile velocity of climate change across the occupied study area, while the potential dispersal rate models fit the response variable as a function of the 90th velocity of climate change with an additive effect of species’ potential dispersal rate (calculated either using the maximum or median dispersal distance). The minimum rate models fit the response as a function of the minimum of the species’ potential dispersal rate and the 90th velocity of climate change. The full set of model results, including results from models including the mean velocity of climate change, can be found in Table S1.

| Model | Dispersal distance | Parameter | Estimate | Std. Error | t-value | p-value | R2 | n | K | LL | AICc | ΔAICc |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Minimum rate | Max | Intercept | 0.46 | 0.2 | 2.3 | 0.02 | 0.11 | 418 | 3 | -1085.17 | 2176.39 | 0 |
| Minimum rate | 0.32 | 0.04 | 7.14 | 0 | 0.11 | 418 | 3 | -1085.17 | 2176.39 | 0 |
| Velocity of climate change | - | Intercept | 0.27 | 0.22 | 1.23 | 0.22 | 0.1 | 418 | 3 | -1086.91 | 2179.89 | 3.5 |
| Velocity of climate change | 0.32 | 0.05 | 6.86 | 0 | 0.1 | 418 | 3 | -1086.91 | 2179.89 | 3.5 |
| Potential dispersal rate | Max | Intercept | 0.27 | 0.22 | 1.22 | 0.22 | 0.1 | 418 | 4 | -1086.9 | 2181.9 | 5.51 |
| Potential dispersal rate | 0 | 0 | 0.15 | 0.88 | 0.1 | 418 | 4 | -1086.9 | 2181.9 | 5.51 |
| Velocity of climate change | 0.32 | 0.05 | 6.27 | 0 | 0.1 | 418 | 4 | -1086.9 | 2181.9 | 5.51 |
| Potential dispersal rate | Median | Intercept | 0.27 | 0.22 | 1.24 | 0.22 | 0.1 | 418 | 4 | -1086.9 | 2181.91 | 5.52 |
| Potential dispersal rate | 0 | 0 | -0.14 | 0.89 | 0.1 | 418 | 4 | -1086.9 | 2181.91 | 5.52 |
| Velocity of climate change | 0.33 | 0.05 | 6.8 | 0 | 0.1 | 418 | 4 | -1086.9 | 2181.91 | 5.52 |
| Minimum rate | Median | Intercept | 0.55 | 0.2 | 2.77 | 0.01 | 0.09 | 418 | 3 | -1089.54 | 2185.14 | 8.75 |
| Minimum rate | 0.36 | 0.06 | 6.43 | 0 | 0.09 | 418 | 3 | -1089.54 | 2185.14 | 8.75 |