Table 1: Main model set - all observations (with group interactions)

| Model | Velocity of isotherm shift | Dispersal rate | Parameter | Estimate | Std.Error | Conditional R2 | Marginal R2 | DF | t-value | p-value | n | K | Res.LL | AICc | ΔAICc | AIC weight |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Minimum rate | Mean | Median | Intercept | 2.13 | 0.39 | 0.37 | 0.15 | 251 | 5.5 | 0 | 421 | 6 | -1078.95 | 2170.1 | 0 | 0.39 |
| Minimum rate | Mean | Median | Minimum rate | 0.19 | 0.1 | 0.37 | 0.15 | 166 | 1.83 | 0.07 | 421 | 6 | -1078.95 | 2170.1 | 0 | 0.39 |
| Minimum rate | Mean | Median | Group: plants | -2.11 | 0.46 | 0.37 | 0.15 | 251 | -4.57 | 0 | 421 | 6 | -1078.95 | 2170.1 | 0 | 0.39 |
| Minimum rate | Mean | Median | Minimum rate:group (plants) | -0.09 | 4.87 | 0.37 | 0.15 | 166 | -0.02 | 0.98 | 421 | 6 | -1078.95 | 2170.1 | 0 | 0.39 |
| Minimum rate | Mean | Maximum | Intercept | 2.04 | 0.39 | 0.36 | 0.14 | 251 | 5.26 | 0 | 421 | 6 | -1079.35 | 2170.91 | 0.81 | 0.26 |
| Minimum rate | Mean | Maximum | Minimum rate | 0.19 | 0.09 | 0.36 | 0.14 | 166 | 2.08 | 0.04 | 421 | 6 | -1079.35 | 2170.91 | 0.81 | 0.26 |
| Minimum rate | Mean | Maximum | Group: plants | -2.04 | 0.46 | 0.36 | 0.14 | 251 | -4.41 | 0 | 421 | 6 | -1079.35 | 2170.91 | 0.81 | 0.26 |
| Minimum rate | Mean | Maximum | Minimum rate:group (plants) | 0.11 | 2.28 | 0.36 | 0.14 | 166 | 0.05 | 0.96 | 421 | 6 | -1079.35 | 2170.91 | 0.81 | 0.26 |
| Minimum rate | 3rd quartile | Median | Intercept | 2.06 | 0.41 | 0.38 | 0.15 | 251 | 4.98 | 0 | 421 | 6 | -1080.22 | 2172.64 | 2.55 | 0.11 |
| Minimum rate | 3rd quartile | Median | Minimum rate | 0.17 | 0.09 | 0.38 | 0.15 | 166 | 1.84 | 0.07 | 421 | 6 | -1080.22 | 2172.64 | 2.55 | 0.11 |
| Minimum rate | 3rd quartile | Median | Group: plants | -2.04 | 0.49 | 0.38 | 0.15 | 251 | -4.21 | 0 | 421 | 6 | -1080.22 | 2172.64 | 2.55 | 0.11 |
| Minimum rate | 3rd quartile | Median | Minimum rate:group (plants) | -0.2 | 1.48 | 0.38 | 0.15 | 166 | -0.14 | 0.89 | 421 | 6 | -1080.22 | 2172.64 | 2.55 | 0.11 |
| Minimum rate | 3rd quartile | Maximum | Intercept | 1.97 | 0.41 | 0.36 | 0.14 | 251 | 4.75 | 0 | 421 | 6 | -1080.3 | 2172.79 | 2.7 | 0.1 |
| Minimum rate | 3rd quartile | Maximum | Minimum rate | 0.16 | 0.07 | 0.36 | 0.14 | 166 | 2.11 | 0.04 | 421 | 6 | -1080.3 | 2172.79 | 2.7 | 0.1 |
| Minimum rate | 3rd quartile | Maximum | Group: plants | -1.95 | 0.49 | 0.36 | 0.14 | 251 | -4 | 0 | 421 | 6 | -1080.3 | 2172.79 | 2.7 | 0.1 |
| Minimum rate | 3rd quartile | Maximum | Minimum rate:group (plants) | -0.23 | 1 | 0.36 | 0.14 | 166 | -0.23 | 0.82 | 421 | 6 | -1080.3 | 2172.79 | 2.7 | 0.1 |
| Velocity of isotherm shift | Mean | - | Intercept | 2.06 | 0.39 | 0.36 | 0.15 | 251 | 5.25 | 0 | 421 | 6 | -1080.43 | 2173.06 | 2.97 | 0.09 |
| Velocity of isotherm shift | Mean | - | Velocity of isotherm shift | 0.18 | 0.09 | 0.36 | 0.15 | 166 | 2 | 0.05 | 421 | 6 | -1080.43 | 2173.06 | 2.97 | 0.09 |
| Velocity of isotherm shift | Mean | - | Group: plants | -2.05 | 0.48 | 0.36 | 0.15 | 251 | -4.28 | 0 | 421 | 6 | -1080.43 | 2173.06 | 2.97 | 0.09 |
| Velocity of isotherm shift | Mean | - | Velocity of isotherm shift:group (plants) | -0.12 | 0.92 | 0.36 | 0.15 | 166 | -0.13 | 0.9 | 421 | 6 | -1080.43 | 2173.06 | 2.97 | 0.09 |
| Velocity of isotherm shift | 3rd quartile | - | Intercept | 2 | 0.42 | 0.37 | 0.15 | 251 | 4.74 | 0 | 421 | 6 | -1081.27 | 2174.74 | 4.65 | 0.04 |
| Velocity of isotherm shift | 3rd quartile | - | Velocity of isotherm shift | 0.15 | 0.07 | 0.37 | 0.15 | 166 | 1.98 | 0.05 | 421 | 6 | -1081.27 | 2174.74 | 4.65 | 0.04 |
| Velocity of isotherm shift | 3rd quartile | - | Group: plants | -1.91 | 0.54 | 0.37 | 0.15 | 251 | -3.52 | 0 | 421 | 6 | -1081.27 | 2174.74 | 4.65 | 0.04 |
| Velocity of isotherm shift | 3rd quartile | - | Velocity of isotherm shift:group (plants) | -0.28 | 0.49 | 0.37 | 0.15 | 166 | -0.58 | 0.56 | 421 | 6 | -1081.27 | 2174.74 | 4.65 | 0.04 |
| Potential dispersal rate | - | Median | Intercept | 2.91 | 0.28 | 0.4 | 0.15 | 249 | 10.25 | 0 | 421 | 6 | -1085.67 | 2183.55 | 13.45 | 0 |
| Potential dispersal rate | - | Median | Potential dispersal rate | -0.01 | 0 | 0.4 | 0.15 | 249 | -1.98 | 0.05 | 421 | 6 | -1085.67 | 2183.55 | 13.45 | 0 |
| Potential dispersal rate | - | Median | Group: plants | -2.9 | 0.38 | 0.4 | 0.15 | 249 | -7.69 | 0 | 421 | 6 | -1085.67 | 2183.55 | 13.45 | 0 |
| Potential dispersal rate | - | Median | Potential dispersal rate:group (plants) | 0.03 | 0.16 | 0.4 | 0.15 | 249 | 0.16 | 0.87 | 421 | 6 | -1085.67 | 2183.55 | 13.45 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Median | Intercept | 2.33 | 0.42 | 0.39 | 0.16 | 249 | 5.6 | 0 | 421 | 7 | -1085.51 | 2185.29 | 15.19 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Median | Potential dispersal rate | -0.01 | 0 | 0.39 | 0.16 | 249 | -1.84 | 0.07 | 421 | 7 | -1085.51 | 2185.29 | 15.19 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Median | Group: plants | -2.34 | 0.47 | 0.39 | 0.16 | 249 | -4.94 | 0 | 421 | 7 | -1085.51 | 2185.29 | 15.19 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Median | Velocity of isotherm shift | 0.16 | 0.09 | 0.39 | 0.16 | 167 | 1.84 | 0.07 | 421 | 7 | -1085.51 | 2185.29 | 15.19 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Median | Potential dispersal rate:group (plants) | 0.03 | 0.16 | 0.39 | 0.16 | 249 | 0.16 | 0.87 | 421 | 7 | -1085.51 | 2185.29 | 15.19 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Median | Intercept | 2.32 | 0.45 | 0.39 | 0.16 | 249 | 5.18 | 0 | 421 | 7 | -1085.97 | 2186.21 | 16.12 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Median | Potential dispersal rate | 0 | 0 | 0.39 | 0.16 | 249 | -1.77 | 0.08 | 421 | 7 | -1085.97 | 2186.21 | 16.12 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Median | Group: plants | -2.37 | 0.49 | 0.39 | 0.16 | 249 | -4.87 | 0 | 421 | 7 | -1085.97 | 2186.21 | 16.12 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Median | Velocity of isotherm shift | 0.12 | 0.07 | 0.39 | 0.16 | 167 | 1.68 | 0.09 | 421 | 7 | -1085.97 | 2186.21 | 16.12 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Median | Potential dispersal rate:group (plants) | 0.02 | 0.16 | 0.39 | 0.16 | 249 | 0.16 | 0.87 | 421 | 7 | -1085.97 | 2186.21 | 16.12 | 0 |
| Potential dispersal rate | - | Maximum | Intercept | 2.79 | 0.31 | 0.39 | 0.15 | 249 | 9.12 | 0 | 421 | 6 | -1087.94 | 2188.08 | 17.99 | 0 |
| Potential dispersal rate | - | Maximum | Potential dispersal rate | 0 | 0 | 0.39 | 0.15 | 249 | -0.73 | 0.47 | 421 | 6 | -1087.94 | 2188.08 | 17.99 | 0 |
| Potential dispersal rate | - | Maximum | Group: plants | -2.79 | 0.4 | 0.39 | 0.15 | 249 | -7.03 | 0 | 421 | 6 | -1087.94 | 2188.08 | 17.99 | 0 |
| Potential dispersal rate | - | Maximum | Potential dispersal rate:group (plants) | 0.03 | 0.15 | 0.39 | 0.15 | 249 | 0.21 | 0.83 | 421 | 6 | -1087.94 | 2188.08 | 17.99 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Maximum | Intercept | 2.19 | 0.4 | 0.37 | 0.15 | 249 | 5.4 | 0 | 421 | 7 | -1087.08 | 2188.43 | 18.33 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Maximum | Potential dispersal rate | 0 | 0 | 0.37 | 0.15 | 249 | -1.16 | 0.25 | 421 | 7 | -1087.08 | 2188.43 | 18.33 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Maximum | Group: plants | -2.21 | 0.47 | 0.37 | 0.15 | 249 | -4.74 | 0 | 421 | 7 | -1087.08 | 2188.43 | 18.33 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Maximum | Velocity of isotherm shift | 0.2 | 0.09 | 0.37 | 0.15 | 167 | 2.19 | 0.03 | 421 | 7 | -1087.08 | 2188.43 | 18.33 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | Mean | Maximum | Potential dispersal rate:group (plants) | 0.03 | 0.15 | 0.37 | 0.15 | 249 | 0.22 | 0.83 | 421 | 7 | -1087.08 | 2188.43 | 18.33 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Maximum | Intercept | 2.15 | 0.43 | 0.37 | 0.15 | 249 | 4.94 | 0 | 421 | 7 | -1087.61 | 2189.5 | 19.4 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Maximum | Potential dispersal rate | 0 | 0 | 0.37 | 0.15 | 249 | -1 | 0.32 | 421 | 7 | -1087.61 | 2189.5 | 19.4 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Maximum | Group: plants | -2.22 | 0.48 | 0.37 | 0.15 | 249 | -4.64 | 0 | 421 | 7 | -1087.61 | 2189.5 | 19.4 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Maximum | Velocity of isotherm shift | 0.15 | 0.07 | 0.37 | 0.15 | 167 | 2.02 | 0.04 | 421 | 7 | -1087.61 | 2189.5 | 19.4 | 0 |
| Potential dispersal rate and velocity of isotherm shift (additive) | 3rd quartile | Maximum | Potential dispersal rate:group (plants) | 0.03 | 0.15 | 0.37 | 0.15 | 249 | 0.22 | 0.83 | 421 | 7 | -1087.61 | 2189.5 | 19.4 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Intercept | 2.3 | 0.43 | 0.38 | 0.16 | 249 | 5.37 | 0 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Potential dispersal rate | 0 | 0.01 | 0.38 | 0.16 | 249 | -0.66 | 0.51 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Velocity of isotherm shift | 0.18 | 0.1 | 0.38 | 0.16 | 164 | 1.83 | 0.07 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Group: plants | -2.3 | 0.51 | 0.38 | 0.16 | 249 | -4.49 | 0 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Potential dispersal rate:velocity of isotherm shift | 0 | 0 | 0.38 | 0.16 | 164 | -0.33 | 0.74 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Potential dispersal rate:group (plants) | 0.05 | 0.2 | 0.38 | 0.16 | 249 | 0.23 | 0.82 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Velocity of isotherm shift:group (plants) | -0.1 | 0.93 | 0.38 | 0.16 | 164 | -0.11 | 0.92 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Median | Potential dispersal rate:velocity of isotherm shift:group (plants) | -0.12 | 0.68 | 0.38 | 0.16 | 164 | -0.18 | 0.86 | 421 | 10 | -1089.41 | 2199.37 | 29.27 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Intercept | 2.32 | 0.46 | 0.39 | 0.16 | 249 | 5.02 | 0 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Potential dispersal rate | -0.01 | 0.01 | 0.39 | 0.16 | 249 | -1.06 | 0.29 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Velocity of isotherm shift | 0.12 | 0.08 | 0.39 | 0.16 | 164 | 1.47 | 0.14 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Group: plants | -2.24 | 0.58 | 0.39 | 0.16 | 249 | -3.87 | 0 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Potential dispersal rate:velocity of isotherm shift | 0 | 0 | 0.39 | 0.16 | 164 | 0.36 | 0.72 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Potential dispersal rate:group (plants) | 0.04 | 0.22 | 0.39 | 0.16 | 249 | 0.18 | 0.86 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Velocity of isotherm shift:group (plants) | -0.25 | 0.49 | 0.39 | 0.16 | 164 | -0.51 | 0.61 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Median | Potential dispersal rate:velocity of isotherm shift:group (plants) | -0.02 | 0.25 | 0.39 | 0.16 | 164 | -0.07 | 0.94 | 421 | 10 | -1091.35 | 2203.24 | 33.15 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Intercept | 2.15 | 0.46 | 0.37 | 0.15 | 249 | 4.65 | 0 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Potential dispersal rate | 0 | 0 | 0.37 | 0.15 | 249 | -0.53 | 0.59 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Velocity of isotherm shift | 0.21 | 0.11 | 0.37 | 0.15 | 164 | 1.9 | 0.06 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Group: plants | -2.17 | 0.54 | 0.37 | 0.15 | 249 | -3.98 | 0 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Potential dispersal rate:velocity of isotherm shift | 0 | 0 | 0.37 | 0.15 | 164 | -0.13 | 0.89 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Potential dispersal rate:group (plants) | 0.05 | 0.19 | 0.37 | 0.15 | 249 | 0.29 | 0.77 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Velocity of isotherm shift:group (plants) | -0.11 | 0.95 | 0.37 | 0.15 | 164 | -0.11 | 0.91 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | Mean | Maximum | Potential dispersal rate:velocity of isotherm shift:group (plants) | -0.13 | 0.66 | 0.37 | 0.15 | 164 | -0.19 | 0.85 | 421 | 10 | -1092.32 | 2205.19 | 35.09 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Intercept | 2.14 | 0.5 | 0.37 | 0.15 | 249 | 4.3 | 0 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Potential dispersal rate | 0 | 0 | 0.37 | 0.15 | 249 | -0.61 | 0.54 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Velocity of isotherm shift | 0.15 | 0.09 | 0.37 | 0.15 | 164 | 1.72 | 0.09 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Group: plants | -2.07 | 0.61 | 0.37 | 0.15 | 249 | -3.39 | 0 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Potential dispersal rate:velocity of isotherm shift | 0 | 0 | 0.37 | 0.15 | 164 | 0.09 | 0.93 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Potential dispersal rate:group (plants) | 0.05 | 0.2 | 0.37 | 0.15 | 249 | 0.24 | 0.81 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Velocity of isotherm shift:group (plants) | -0.27 | 0.51 | 0.37 | 0.15 | 164 | -0.54 | 0.59 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |
| Potential dispersal rate and velocity of isotherm shift (interactive) | 3rd quartile | Maximum | Potential dispersal rate:velocity of isotherm shift:group (plants) | -0.03 | 0.24 | 0.37 | 0.15 | 164 | -0.12 | 0.91 | 421 | 10 | -1094.5 | 2209.53 | 39.44 | 0 |