**Table S2. Number of species for which each modelling framework generated the most accurate hindcasts.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Number (and proportion) of best-predicted species** | | | | | |
|  | **AUC** | **Sensitivity** | **Specificity** | **CCRstable** | **CCRchanged** |
| Mn(PA) | 344 (0.189) | 51 (0.028) | 223 (0.122) | 178 (0.098) | 153 (0.084) |
| RF | 27 (0.015) | 197 (0.108) | 1078 (0.591) | 1017 (0.558) | 622 (0.341) |
| GBM | 136 (0.075) | 71 (0.039) | 84 (0.046) | 90 (0.049) | 107 (0.059) |
| MaxEnt | 357 (0.196) | 109 (0.060) | 101 (0.055) | 86 (0.047) | 133 (0.073) |
| GAM | 382 (0.210) | 132 (0.072) | 63 (0.035) | 101 (0.055) | 99 (0.054) |
| GLM | 262 (0.144) | 149 (0.082) | 64 (0.035) | 88 (0.048) | 103 (0.057) |
| ANN | 193 (0.106) | 465 (0.255) | 81 (0.044) | 139 (0.076) | 197 (0.108) |
| MARS | 117 (0.064) | 79 (0.043) | 101 (0.055) | 96 (0.053) | 110 (0.060) |
| CTA | 5 (0.003) | 122 (0.067) | 118 (0.065) | 97 (0.053) | 188 (0.103) |
| SRE | 0 (0.000) | 576 (0.316) | 4 (0.002) | 12 (0.007) | 330 (0.181) |

Prediction accuracy was measured by AUC, sensitivity, and specificity of the entire range in t1, as well as the correct classification rate of grid squares that have remained occupied or unoccupied (CCRstable) and the correct classification rate of grid squares that have changed occupancy status between time periods (CCRchanged). Values represent the total number (and proportion of the total sample) of species for which each technique performed best. Proportions may exceed 100% of the sample as several species were equally well-predicted by more than one technique.