Supporting Information, Appendix S5

Log-likelihoods and AIC values for multilevel Poisson-normal models with different traits as predictors of trends in net captures. There are two subsets of models: those that used data from both August and January, and one that only used data from January. Models that included both August and January data are of the form:

Null: N = **βInt.**

Year: N = **βInt.+ βYear**\*Year

Year+Trait: N = **βInt.+ βTrait**\*TraitSF **+ βJan\***Jan.Yes/No **+ βYear**\*Year

Year\*Trait: N = **βInt.+ βTrait**\*TraitSF **+ βJan\***Jan.Yes/No **+ βYear**\*Year **+ βYear\*trait \*Year**\*TraitSF

Where N is the number of birds captured in mist nets, TraitSF is a 0/1 indicator for factor levels typical of primary (0) or secondary (1) forest (SF). Jan.Yes/No is an indicator variable for net captures in August (0) or January (1). Since latitudinal migrants occur only in January, these model lacked the **βJan \*** Jan.Yes/No term. For both subsets of models with report AIC and log likelihoods for null models with no fixed effects and models with just year as a predictor to represent an overall trend for all species. For each trait we then report AIC and log likelihoods for the focal model with the Year\*Trait interaction and a nested model that lacks this interaction (Year+Trait). We then report the AIC of a given model minus AIC of the appropriate null model (AIC-AICnull) to gauge whether inclusion of a trait in a model improves the model; negative values indicate improvements in the fit of the model relative to the null. P-values from Table 3 for the focal Year\*trait interaction are also shown for reference.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Months** | **Trait** | **Model type** | **df** | **log Likelihood** | **AIC** | **AIC-AICnull** | **p-values** |
| **January** | Null model (no predictors) | null | 6 | -1031.4 | 2074.9 |  |  |
| Year model | year | 7 | -1031.4 | 2076.7 | -2.9 |  |
|  |  |  |  |  |  |  |
| Migration status | year+trait | 8 | -1031.3 | 2078.5 | -4.7 |  |
|  | year\*trait | 9 | -1030.0 | 2078.0 | -4.1 | 0.11 |
|  |  |  |  |  |  |  |  |
| **August and January** | Null model (no predictors) | null | 8 | -2098.5 | 4213.0 |  |  |
| Year model | year | 9 | -2098.3 | 4214.6 | 1.6 |  |
|  |  |  |  |  |  |  |
| Habitat preference | year+trait | 11 | -2094.5 | 4211.0 | -2.1 |  |
|  | year\*trait | 12 | -2088.8 | 4201.7 | -11.4 | 0.001 |
| Sensitivity to disturbance | year+trait | 11 | -2095.8 | 4213.6 | 0.5 |  |
|  | year\*trait | 12 | -2085.7 | 4195.4 | -17.6 | <0.0001 |
| Conservation priority | year+trait | 11 | -2097.0 | 4216.1 | 3.0 |  |
|  | year\*trait | 12 | -2096.1 | 4216.2 | 3.2 | 0.52 |
| Elevational migrant | year+trait | 11 | -2096.3 | 4214.6 | 1.6 |  |
|  | year\*trait | 12 | -2096.1 | 4216.2 | 3.2 | 0.27 |
| Obligate Canopy Use | year+trait | 11 | -2097.3 | 4216.6 | 3.5 | 0.18 |
|  | year\*trait | 12 | -2096.7 | 4217.3 | 4.3 |  |
| Canopy Use | year+trait | 11 | -2097.3 | 4216.6 | 3.5 |  |
|  | year\*trait | 12 | -2097.1 | 4218.2 | 5.1 | 0.52 |
| Foraging guild-2 levels | year+trait | 11 | -2096.4 | 4214.8 | 1.8 |  |
|  | year\*trait | 12 | -2094.3 | 4212.7 | -0.4 | 0.042 |
| Foraging guild-3 levels | year+trait | 12 | -2094.3 | 4212.6 | -0.4 |  |
|  | year\*trait | 14 | -2091.8 | 4211.7 | -1.4 | 0.085 |
| Habitat breadth | year+trait | 11 | -2097.3 | 4216.6 | 3.5 |  |
|  |  | year\*trait | 12 | -2090.2 | 4204.3 | -8.7 | 0.0002 |