Supporting Information, Appendix S3

Log-likelihoods and AIC values for multilevel models on log-transformed species richness values for subgroups of species with different traits. 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: R = **βInt.**

Year: R = **βInt.+ βYear**\*Year

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

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

Where R is the number of species captured in mist nest, 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 | 3 | -23.1 | 52.2 |  |  |
| Year model | year | 4 | -23.9 | 55.8 | -4.6 |  |
|  |  |  |  |  |  |  |
| Migration status | year+trait | 8 | 3.8 | 2.4 | 48.8 |  |
|  | year\*trait | 9 | 4.9 | 2.1 | 49.1 | 0.008 |
|  |  |  |  |  |  |  |  |
| **August and January** | Null model (no predictors) | null | 4 | -7.2 | 22.4 |  |  |
| Year model | year | 5 | -9.3 | 28.6 | 6.2 |  |
|  |  |  |  |  |  |  |
| Habitat preference | year+trait | 6 | 12.9 | -13.9 | -36.3 |  |
|  | year\*trait | 7 | 13.6 | -13.1 | -35.5 | <0.001 |
| Sensitivity to disturbance | year+trait | 6 | 21.8 | -27.6 | -50.0 |  |
|  | year\*trait | 7 | 12.4 | -10.9 | -33.3 | <0.0001 |
| Foraging guild-3 levels | year+trait | 10 | 8.3 | 3.3 | -19.1 |  |
|  | year\*trait | 12 | 7.8 | 8.3 | -14.1 | 0.015 |