Supplementary material to ‘Phyllostomid bats distribution and richness gradient in a subtropical Brazilian state’

**Appendix S1. List of studies consulted in the survey of records and their respective locations.**

|  |  |  |
| --- | --- | --- |
| **Reference** | **Country** | **Locality / Region** |
| Althoff, 2007 | Brazil | Blumenau, SC |
| Althoff et al., 2017 | Brazil | Northern SC |
| Barquez et al., 1999 | Argentina | Missiones Province |
| Bôlla et al., 2017 | Brazil | Southern SC |
| Cirignoli et al., 2011 | Argentina | Missiones Province |
| Carvalho et al., 2013 | Brazil | Pedras Grandes, SC |
| Cherem et al., 2004 | Brazil | SC |
| Cherem et al., 2011 | Brazil | P. E. Serra do Tabuleiro, SC |
| Gonçalves et al., 2018 | Brazil, Argentina | Atlantic Forest |
| Gruener et al., 2012 | Brazil | Blumenau, SC |
| Miretzki, 2003 | Brazil | PR |
| Muylaert et al., 2017 | Brazil, Argentina | Atlantic Forest |
| Noronha, 2016 | Brazil | RS |
| Reus, 2009 | Brazil | RS and SC |
| Sekiama et al., 2001 | Brazil | Parque Nacional do Iguaçu, Paraná |
| Sipinski and Reis, 1995 | Brazil | Itapoá, SC |

Legend: SC = Santa Catarina state, RS = Rio Grande do Sul state, PR = Paraná state

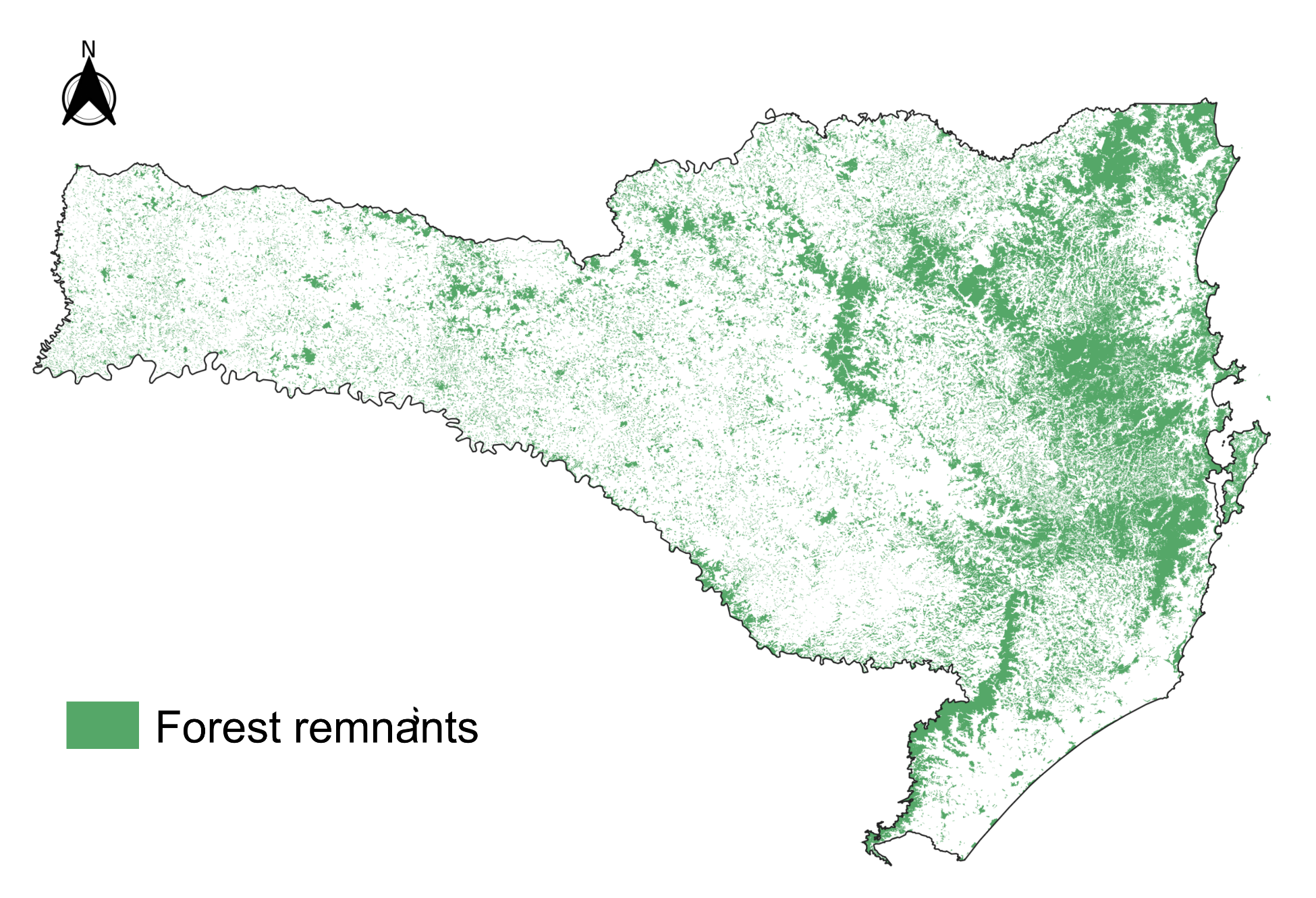
**Appendix S2. Correlations of WorldClim bioclimatic variables with the first four axes of the Principal Component Analysis (PCA). “Variance accounted” indicates how much of the unique variation in the bioclimatic variables set is accounted for by that particular PC. "Cumulative Proportion" shows the accumulated value of the variation accounted for by the first four axes.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Bioclimatic variable | PC1 | PC2 | PC3 | PC4 |
| bio1 - Annual Mean Temperature | 0.10 | 0.38 | 0.18 | -0.05 |
| bio2 - Mean Diurnal Range | 0.29 | -0.09 | -0.01 | -0.51 |
| bio3 - Isothermality | 0.03 | -0.24 | -0.16 | -0.52 |
| bio4 - Temperature Seasonality | 0.34 | 0.12 | 0.21 | -0.01 |
| bio5 - Max Temperature of Warmest Month | 0.20 | 0.32 | 0.19 | -0.18 |
| bio6 - Min Temperature of Coldest Month | -0.14 | 0.36 | 0.13 | 0.19 |
| bio7 - Temperature Annual Range | 0.35 | 0.00 | 0.08 | -0.37 |
| bio10 - Mean Temperature of Warmest Quarter | 0.14 | 0.36 | 0.20 | -0.03 |
| bio11 - Mean Temperature of Coldest Quarter | 0.03 | 0.40 | 0.15 | -0.04 |
| bio12 - Annual Precipitation | 0.26 | 0.12 | -0.39 | 0.11 |
| bio13 - Precipitation of Wettest Month | 0.00 | 0.27 | -0.42 | -0.10 |
| bio14 - Precipitation of Driest Month | 0.37 | -0.04 | -0.14 | 0.23 |
| bio15 - Precipitation Seasonality | -0.32 | 0.18 | -0.14 | -0.28 |
| bio16 - Precipitation of Wettest Quarter | -0.06 | 0.26 | -0.43 | -0.04 |
| bio17 - Precipitation of Driest Quarter | 0.37 | -0.04 | -0.19 | 0.17 |
| bio18 - Precipitation of Warmest Quarter | -0.12 | 0.25 | -0.41 | -0.07 |
| bio19 - Precipitation of Coldest Quarter | 0.35 | -0.08 | -0.16 | 0.27 |
| **Variance Accounted (%)** | **0.34** | **0.34** | **0.18** | **0.11** |
| **Cumulative Proportion (%)** | **0.34** | **0.68** | **0.86** | **0.97** |

**Appendix S3. Average performance of the models of each species in the geographically structured cross-validation procedure, according to Area Under Curve of the Receiver Operating Characteristic (AUC) and Continuous Boyce Index (CBI).**

|  |  |  |
| --- | --- | --- |
| **Species** | **AUC** | **CBI** |
| *Anoura caudifer* | 0.793 | 0.598 |
| *Anoura geoffroyi* | 0.822 | 0.425 |
| *Artibeus fimbriatus* | 0.725 | 0.602 |
| *Artibeus lituratus* | 0.733 | 0.869 |
| *Artibeus obscurus* | 0.754 | 0.522 |
| *Artibeus planirostris* | 0.829 | 0.496 |
| *Carollia perspicillata* | 0.762 | 0.853 |
| *Chiroderma doriae* | 0.968 | 0.864 |
| *Chrotopterus auritus* | 0.702 | 0.668 |
| *Desmodus rotundus* | 0.712 | 0.628 |
| *Diphylla ecaudata* | 0.846 | 0.886 |
| *Glossophaga soricina* | 0.813 | 0.412 |
| *Micronycteris megalotis* | 0.785 | 0.860 |
| *Mimon bennettii* | 0.740 | 0.840 |
| *Platyrrhinus lineatus* | 0.695 | 0.701 |
| *Platyrrhinus recifinus* | 0.831 | 0.907 |
| *Pygoderma bilabiatum* | 0.775 | 0.801 |
| *Sturnira lilium* | 0.752 | 0.906 |
| *Sturnira tildae* | 0.813 | 0.809 |
| *Vampyressa pusilla* | 0.820 | 0.841 |
| **Mean** | **0.783** | **0.725** |
| **Standard deviation** | **0.06** | **0.17** |

**Appendix S4. Forest remnants present in Santa Catarina state.**



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