Supplementary Material

# Supplementary Figures



**Figure S1.** Graduated cylindric box used to estimate litter volume.



**Figure S2.** Principal component analysis of habitat structure variables describing habitat quality of semideciduous forest patches in the Brazilian Cerrado in central Goiás. vines – number of vines; b\_area – basal area (m²); height – tree height (m); understory – understory clutter (%); canopy – canopy cover (%); litter – litter volume (m³);

# Supplementary Tables

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| **Table S2.** Morphological and behavioral traits used to estimate functional diversity of small mammals captured in semideciduous patches in the Brazilian Cerrado between 2018 and 2019. Habitat specificity is shown as habitat use: habitat generalist (G), Forest specialist (S); | | | | | | |
| **Species** | **Habitat useᴪ** | **Dietᵠ** | **Tail length** | **Hind feet width** | **Body weight (g)** | **Arboreality** |
| *Cryptonanus agricolai* | G | In/Om | 1.48 | 0.58 | 19 | 0.83 |
| *Calomys expulsus* | G | Fr/Gr | 0.83 | 0.29 | 26 | 0.08 |
| *Calomys tener* | G | Fr/Gr | 0.86 | 0.24 | 15 | 0.00 |
| *Didelphis albiventris* | G | Fr/Om | 1.04 | 0.54 | 558 | 0.04 |
| *Gracilinanus agilis* | G | In/Om | 1.42 | 0.61 | 26 | 0.85 |
| *Hylaeamys megacephalus* | S | Fr/Gr | 1.01 | 0.24 | 44 | 0.07 |
| *Marmosa demerarae* | S | In/Om | 1.47 | 0.60 | 78 | 0.88 |
| *Marmosa murina* | S | In/Om | 1.42 | 0.58 | 36 | 0.75 |
| *Oecomys catherinae* | S | Fr/Se | 1.09 | 0.31 | 54 | 0.75 |
| *Oecomys cleberi* | S | Fr/Se | 1.15 | 0.34 | 30 | 0.86 |
| *Oligoryzomys mattogrossae* | S | Fr/Gr | 1.45 | 0.23 | 19 | 0.20 |
| *Oligoryzomys moojeni* | S | Fr/Gr | 1.48 | 0.25 | 16 | 0.00 |
| *Oligoryzomys nigripes* | G | Fr/Gr | 0.94 | 0.17 | 30 | 0.00 |
| *Rhipidomys macrurus* | S | Fr/Se | 1.28 | 0.37 | 54 | 0.86 |
| *Rattus rattus* | G | Fr/Om | 1.24 | 0.27 | 58 | 0.00 |
| Followingᴪ: Gomes et al. (2015), Bezerra et al. (2009), Ribeiro (2015), Rossi & Bianconi (2011), Cáceres et al. (2010), Marinho-Filho et al. (2002), Pardini et al. (2004), Oliveira & Bonvicino (2011), Bonvicino et al. (2002), Bovendorp et al. (2009); ᵠ Paglia et al. (2012), Shiels et al. 2014, RioFrío-Lazo & Paez-Rosa (2015). | | | | | | |

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| **Table S3.** Autocorrelation test values based on Moran´s I, overdispersion test values based on Pearson residuals for residuals of all fitted GLM models (landscape structure analyses and habitat quality analyses) and significance of global models. Test results are expressed as p-values. Significant values are in bold. | | | | |
| **Global regression model** | | **Moran´s I test** | **Overdispersion test** | **Model significance** |
| *Landscape structure analyses:*  Y ~ log (patch area) \* landscape + isolation | |  |  |  |
| Y | Generalists abundance | **0.17** | 0.44 | **4 x 10-4** |
|  | Specialists abundance | **1.6 x 10-2** | 0.58 | 0.08 |
|  | Estimated generalist species richness | 0.64 | 0.99 | 0.33 |
|  | Estimated specialist species richness | **9.2 x 10-3** | 0.32 | 0.57 |
|  | Species diversity (Shannon) | 0.57 | 0.80 | 0.74 |
|  | FD | 0.74 | 1.00 | 0.82 |
| *Habitat quality analyses*  Y ~ PC1 + PC2 | |  |  |  |
| Y | Generalists abundance | **0.02** | 0.54 | 0.32 |
|  | Specialists abundance | **6 x 10-4** | 0.45 | 0.85 |
|  | Estimated generalist species richness | 0.44 | 0.99 | 0.93 |
|  | Estimated specialist species richness | 0.02 | 0.61 | **0.05** |
|  | Species diversity (Shannon) | 0.49 | 0.86 | 0.43 |
|  | FD | 0.99 | 1.00 | 0.49 |

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| **Table S4.** Significance of model predictors in model selection procedure of the analyses on the effects of habitat fragmentation and habitat loss in small mammal community metrics in semideciduous forest patches in the Brazilian Cerrado in central Goiás. The significance of a predictor was determined by likelihood ratio tests (LRT) or changes in Scaled deviance (depending on model error family) and by p-values generated by comparing nested models that drop variables in a stepwise approach. Significant values are in bold. Global model in all analyses: Y ~ landscape\*log (patch area) + isolation. | | | | |
| **Response variable/ family distribution** | **Predictors** | **df** | **Test** | **p** |
|  |  |  | **LRT** |  |
| **Generalist abundance/** Negative binomial | landscape : log (patch area) | 1 | 1.207 | 0.272 |
|  | isolation | 1 | 1.305 | 0.253 |
|  | landscape | 1 | 5.493 | **0.019** |
|  | log(patch area) | 1 | 19.470 | **1.022 x 10-5** |
| **Specialist abundance/** Negative binomial | landscape : log (patch area) | 1 | 0.0044 | 0.947 |
|  | isolation | 1 | 1.497 | 0.221 |
|  | landscape | 1 | 0.509 | 0.476 |
|  | log (patch area) | 1 | 7.311 | **0.007** |
|  |  |  | **Scaled deviance** |  |
| **Estimated richness for generalists/**Gamma | landscape : log(patch area) | 1 | 0.002 | 0.965 |
|  | isolation | 1 | 0.049 | 0.824 |
|  | landscape | 1 | 4.079 | **0.043** |
|  | log(patch area) | 1 | 0.488 | 0.498 |
| **Estimated richness for specialists/** Poisson | landscape : log(patch area) | 1 | 0.966 | 0.325 |
|  | isolation | 1 | 1.451 | 0.228 |
|  | landscape | 1 | 0.341 | 0.559 |
|  | log(patch area) | 1 | 0.123 | 0.725 |
| **Shannon diversity/** Gaussian | landscape : log(patch area) | 1 | 0.461 | 0.497 |
|  | isolation |  | 0.092 | 0.761 |
|  | landscape | 1 | 0.005 | 0.944 |
|  | log(patch area) | 1 | 1.651 | 0.199 |
| **Functional diversity/** Gamma | landscape : log(patch area) | 1 | 0.461 | 0.496 |
|  | isolation | 1 | 0.041 | 0.838 |
|  | landscape | 1 | 0.005 | 0.944 |
|  | log(patch area) | 1 | 1.651 | 0.198 |

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| **Table S5.** Results of the Principal Component Analysis (PCA) obtained from six habitat variables to compare forest structure in 36 semideciduous forest patches in the Brazilian Cerrado. Values are the coefficient of the corresponding eigenvectors. More heavily loaded variables are in bold (loading ≥ 0.5). | | |
| **Variables** | **PC1** | **PC2** | |
| Vines (vines) | 0.38 | 0.42 | |
| Basal area (b\_area) | **0.52** | 0.00 | |
| Mean tree height (height) | **0.54** | -0.21 | |
| Understory clutter (understory) | -0.15 | 0.48 | |
| Canopy cover (canopy) | 0.27 | **0.65** | |
| Litter volume (litter) | -0.45 | 0.35 | |
| Variance explained (%) | 29.55 | 23.45 | |

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| **Table S6.** Significance of model predictors in model selection procedure of the analyses on the effects of habitat quality in small mammal community metrics in semideciduous forest patches in the Brazilian Cerrado in central Goiás. The significance of a predictor was determined by likelihood ratio tests (LRT) or changes in deviance (depending on model error family) and by p-values generated by comparing nested models that drop variables in a stepwise approach. Significant values are in bold. Global model in all analyses: Y ~ PC1 + PC2. | | | | |
| **Response variable/ family distribution** | **Predictors** | **df** | **Test** | **p** |
|  |  |  | **LRT** |  |
| **Generalist abundance/** Negative binomial | PC1 | 1 | 0.993 | 0.318 |
|  | PC2 | 1 | 0.252 | 0.615 |
| **Specialist abundance/** Negative binomial | PC1 | 1 | 0.135 | 0.713 |
|  | PC2 | 1 | 0.192 | 0.661 |
|  |  |  | **Scaled deviance** |  |
| **Estimated richness for generalists/**Gamma | PC1 | 1 | 0.091 | 0.762 |
|  | PC2 | 1 | 0.048 | 0.825 |
| **Estimated richness for specialists/** Poisson | PC1 | 1 | 0.300 | 0.583 |
|  | PC2 | 1 | 5.536 | **0.018** |
| **Shannon diversity/** Gaussian | PC1 | 1 | 1.464 | 0.226 |
|  | PC2 | 1 | 0.327 | 0.566 |
| **Functional diversity/** Gamma | PC1 | 1 | 0.888 | 0.345 |
|  | PC2 | 1 | 0.517 | 0.472 |