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Supplementary material

Appendix 1

Geographical coordinate, species richness, sampling effort (hours), and sampling method for sites included in the local scale analysis: 01) Cafuringa (Bagno et al. 2005); 02) Jalapão (Muller 2003); 03) Serra da Tabatinga e Chapada das Mangabeiras (Santos 2001); 04) Barragem da Boa Esperança (Olmos and Brito 2007); 05) Águas Emendadas (Bagno 1998); 06) Jataí e Luis Antônio (Dias 2000); 07) Itirapina (Motta-Junior et al. 2008); 08) Serra das Araras (Silva and Oniki 1988); 09) Fazenda Água Limpa (Braz and Cavalcanti 2001); 10) Fazenda Brejão (Faria et al. 2009); 11) Fazenda Rio Claro (Donatelli et al. 2004); 12) Fazenda São Miguel (Lopes et al. 2008); 13) Fazenda Três Rios (Lopes et al. 2008); 14) Brasília National Park (Antas 1995); 15) Chapada dos Guimarães National Park (Lopes et al. 2009); 16) Emas National Park (Hass 2005); 17) Serra da Canastra National Park (Silveira 1998); 18) Serra do Cipó National Park (Rodrigues et al. 2005); 19) Panga (Marçal-Júnior et al. 2009); 20) IBGE (Negret 1983); 21) Rio das Mortes (Sick 1955); 22) Mata Samuel de Paula (Ferreira et al. 2009); 23) Serra do Lajeado (Bagno and Abreu 2001); 24) Vila Bela da Santíssima Trindade (Silveira and D'Horta 2002). Sampling method: I) Visualization, II) Vocalization, III) Capture, IV) Literature, V) Ornithological collection. Vegetation type: 1) wet grasslands or marshes; 2) grasslands; 3) savannas; 4) dry forests; and 5) riparian forests.

Site	Geographical coordinates	Richness	Sampling effort (h)	Sampling method	Vegetation type
01	15º35’S, 47º56’W	257	-	-	-
02	10°32’S, 46°25’W	267	-	-	1-5
03	10°16’S, 45°35’W	250	664	I- III	1-5
04	06º45’S, 43º44’W	208	76	I-II	3-5
05	15º32’S, 47º37’W	274	8000	I-II, IV-V	1-4
06	21º35’S, 47º48’W	278	-	I-II	1, 3-4
07	22°13’S, 47°53’W	226	580	II, IV	1-3, 5
08	15°39’S, 57°13’W	227	360	I, III	1-5
09	15°45’S, 47°57’W	208	-	IV	-
10	17°01’S, 45°54’W	270	1440	I-II	3-5
11	22°27’S, 48°57’W	219	96	I-II	1-5
12	15°50’S, 46°30’W	226	-	-	-
13	16°56’S, 46°16’W	215	48	I-II	1-5
14	15°35’S, 47°53’W	223	-	-	1-5
15	15°19’S, 55°52’W	228	2280	I, III-V	2-5
16	17°49’S, 52°39’W	336	-	I-III	2-4
17	20º15’S, 46º37’W	312	-	I-II, IV	1-5
18	19°00’S, 43°00’W	224	-	I-III	2-5
19	19°11’S, 48°23’W	230	216	I-III	1-5
20	15°56’S, 47°53’W	263	-	-	-
21	14°40’S, 52°21’W	240	-	-	-
22	20°03’S, 43°52’W	154	236	I-III	2-4
23	10°22’S, 48°37’W	339	-	-	-
24	15°03’S, 59°48’W	309	2055	I-IV	1-5

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Appendix 2

Phylogenies used to improve the resolution of the phylogenetic tree.

Family	Reference
Accipitridae	▪ Lerner, H. R. L. and Mindell, D. P. 2005. Phylogeny of eagles, Old World vultures, and other Accipitridae based on nuclear and mitochondrial DNA. - Mol. Phylogenet. Evol. 37: 327–46.
Apodidae	▪ Price, B. et al. 2010. The importance of fine-scale savanna heterogeneity for reptiles and small mammals. - Biol. Conserv. 143: 2504–2513.
Cardinalidae	▪ Klicka, J. et al. 2007. Defining a monophyletic Cardinalini: A molecular perspective. - Mol. Phylogenet. Evol. 45: 1014–32.
Coerebidae	▪ Klicka, J. et al. 2007. Defining a monophyletic Cardinalini: A molecular perspective. - Mol. Phylogenet. Evol. 45: 1014–32.
Corvidae	▪ Bonaccorso, E. et al. 2010. Molecular systematics and evolution of the Cyanocorax jays. - Mol. Phylogenet. Evol. 54: 897–909.
Emberizidae	▪ Campagna, L. et al. 2011. A molecular phylogeny of the Sierra-Finches (Phrygilus, Passeriformes): Extreme polyphyly in a group of Andean specialists. - Mol. Phylogenet. Evol. 61: 521–33.
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Family	Reference
	562–79.
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Fringillidae	▪ Yuri, T. and Mindell, D. P. 2002. Molecular phylogenetic analysis of Fringillidae, "New World nine-primaried oscines" (Aves: Passeriformes). - Mol. Phylogenet. Evol. 23: 229–43.
Hirundinidae	▪ Sheldon, F. H. et al. 2005. Phylogeny of swallows (Aves: Hirundinidae) estimated from nuclear and mitochondrial DNA sequences. - Mol. Phylogenet. Evol. 35: 254–270.
Mimidae	▪ Lovette, I. J. et al. 2010. A comprehensive multilocus phylogeny for the wood-warblers and a revised classification of the Parulidae (Aves). - Mol. Phylogenet. Evol. 57: 753–70.
Motacillidae	▪ Voelker, G. 1999. Molecular evolutionary Relationships in the Avian Genus Anthus (Pipits: Motacillidae). - Mol. Phylogenet. Evol. 11: 84–94.
Parulidae	▪ Lovette, I. J. et al. 2010. A comprehensive multilocus phylogeny for the wood-warblers and a revised classification of the Parulidae (Aves). - Mol. Phylogenet. Evol. 57: 753–70.
Thraupidae	▪ Burns, K. J. 1997. Molecular systematics of Tanagers (Thraupinae): Evolution and Biogeography of a Diverse Radiation of Neotropical Birds. - Mol. Phylogenet. Evol. 8: 334–48.
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Family	Reference
	of Neotropical tanagers in the genus Tangara. - Mol. Phylogenet. Evol. 32: 838–54.
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Trochilidae	▪ McGuire, J. A. et al. 2009. A higher-level taxonomy for hummingbirds. - J. Ornithol. 150: 155–165.
Turdidae	▪ Nylander, J. A. A. et al. 2008. Accounting for Phylogenetic Uncertainty in Biogeography : A Bayesian Approach to Dispersal-Vicariance Analysis of the Thrushes (Aves : Turdus). - Syst. Biol. 57: 257–268.
Vireonidae	▪ Cicero, C. and Johnson, N. K. 2001. Higher-Level Phylogeny of New World Vireos (Aves: Vireonidae) Based on Sequences of Multiple Mitochondrial DNA Genes. - Mol. Phylogenet. Evol. 20: 27–40.

Appendix 3

Correlations between phylogenetic and functional structure of forest and savanna bird assemblages at the regional and local scales according to the null models that consider: forest and savanna birds in the same species pool (forest + savanna); and forest and savanna birds in distinct species pools (forest - savanna).

Null model	Assemblage	Scale	Correlation (r)	P-value
Forest + Savanna (Fig. 1B)	Forest	Regional	0.61	< 0.01
		Local	0.22	0.31
	Savanna	Regional	0.06	0.70
		Local	0.06	0.78
Forest - Savanna (Fig. 1C)	Forest	Regional	- 0.21	0.17
		Local	0.37	0.07
	Savanna	Regional	- 0.07	0.64
		Local	0.20	0.34

Appendix 4

Analysis of covariance (ANCOVA) between species richness (SR) and standardized effect size of functional (FD (SES)) and phylogenetic (PD (SES)) diversity to forest and savanna bird assemblages at the regional and local scale.

Assemblage	Scale	ANCOVA	Slope	R^2	P-value
Forest	Regional	SR x FD (SES)	0.003	0.05	0.16
		SR x PD (SES)	- 0.01	0.53	< 0.01
	Local	SR x FD (SES)	0.02	0.32	< 0.01
		SR x PD (SES)	0.005	0.02	0.55
Savanna	Regional	SR x FD (SES)	- 0.02	0.50	< 0.01
		SR x PD (SES)	0.02	0.14	0.01
	Local	SR x FD (SES)	0.02	0.09	0.14
		SR x PD (SES)	- 0.01	0.05	0.27

Appendix 5

Average evolutionary age (AEA) of the forest, savanna and tweener bird species inhabiting the Cerrado. We estimated AEA dividing the observed phylogenetic diversity (obsPD) by the respective species richness (SR) in each species group. Our results confirm that, on average, forest bird species are younger than savanna bird species. This was first observed by Silva and Bates (2002) based on few endemic species.

Birds	obsPD	SR	AEA
Forest	1556	426	3.65
Savanna	1236	238	5.20
Tweener	984	172	5.70

Appendix 6

Spatial location of forest bird assemblages with higher species richness and lower phylogenetic diversity at the Cerrado Biodiversity Hotspot– Amazon Forest boundary.