

# **Distributional patterns and ecological determinants of bat occurrence inside caves: a broad scale meta-analysis**

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## **Supplementary Materials**

### Data availability

Data will be made available in the Dryad repository when the article is accepted.

## References used in this review

- Aguiar, L. M. S.; Camargo, W. R.; Portella, A. S. Occurrence of White-winged vampire bat, *Diaemus youngi* (Mammalia, Chiroptera) in the Cerrado of Distrito Federal, Brazil. *Revista Brasileira de Zoologia* **2006**, 23, 893-896. DOI: 10.1590/S0101-81752006000300041.
- Alves, V. R., R. A. Freitas and T. Barrett. *Lutzomyia maruaga* (Diptera: Psychodidae), a new bat-cave sand fly from Amazonas, Brazil. *Memórias do Instituto Oswaldo Cruz* **2008**, 103:251-253.
- Arnone, I. S.; Passos, F. C. Estrutura de comunidade da quiropterofauna (Mammalia, Chiroptera) do Parque Estadual de Campinhos, Paraná, Brasil. *Revista Brasileira de Zoologia* **2007**, 24, 573-581. DOI: 10.1590/S0101-81752007000300008.
- Arnone, I. S. Estudo da comunidade de morcegos na área cárstica do Alto Ribeira – SP. Uma comparação com 1980. Masters degree. Universidade de São Paulo, São Paulo, Brasil. **2008**.
- Astúa, D.; Guerra, D. Q. Caatinga bats in the Mammal Collection of the Universidade Federal de Pernambuco. *Chiroptera Neotropical* **2008**, 14, 326 – 338.
- Bahia, G. R.; Ferreira, R. L. Influência das características físicoquímicas e da matéria orgânica de depósitos recentes de guano de morcego na riqueza e diversidade de invertebrados de uma caverna calcária. *Revista Brasileira de Zoociências* **2005**, 7, 143-164.
- Baptista, M.; Mello, M. A. R. Preliminary inventory of the bat species of the Poço das Antas Biological Reserve, RJ. *Chiroptera Neotropical* **2001**, 7, 133-135.
- Baumgarten, J. E.; Vieira, E. M. Reproductive seasonality and development of *Anoura geoffroyi* (Chiroptera: Phyllostomidae) in central Brazil. *Mammalia* **1994**, 58, 415-422. DOI: 10.1515/mamm.1994.58.3.415.
- Bordignon, M. O. Predação de morcegos por *Chrotopterus auritus* (Peters) (Mammalia, Chiroptera) no Pantanal de Mato Grosso do Sul, Brasil. *Revista Brasileira de Zoologia* **2005**, 22: 1207-1208.

- Bordignon, M. O. Diversidade de morcegos (Mammalia, Chiroptera) do Complexo Aporé-Sucuriú, Mato Grosso do Sul, Brasil. *Revista Brasileira de Zoologia* **2006**, 23, 1002-1009. DOI: 10.1590/S0101-81752006000400004.
- Bredt, A.; Uieda, W.; Magalhães, E. D. Morcegos cavernícolas da região do Distrito Federal, centro-oeste do Brasil (Mammalia, Chiroptera). *Revista Brasileira de Zoologia* **1999**, 16:731-770. DOI: 10.1590/S0101-81751999000300012.
- Bredt, A.; Magalhães, E. D. Os morcegos da APA de Cafuringa. In *Apa da Cafuringa. A última fronteira natural do DF*. 1st ed.; Netto, P. B.; Mecnas, V. V.; Cardoso, E. S. Eds.; Secretaria de Meio Ambiente e Recursos Hídricos, Brasília, Brasil, 2006; Volume 1, pp. 259-266. ISBN: 8588670046 9788588670044.
- Campanhã, R. A. C.; Fowler, H. G. Roosting assemblages of bats in arenitic caves in remnant fragments of Atlantic Forest in southeastern Brazil. *Biotropica* **1993**, 25:362-365. DOI: 10.2307/2388798. DOI: 10.2307/2388798.
- Campanhã, R. A.; Fowler, H. G. Movement patterns and roosts of the vampire bat *Desmodus rotundus* in the interior of São Paulo state. *Naturalia* **1995**, 20:191-194.
- Carvalho, F.; Cruz-Neto, A. P.; Zocche, J. J. Ampliação da distribuição e descrição da dieta de *Mimon bennettii* (Phyllostomidae, Phyllostominae) no sul do Brasil. *Chiroptera Neotropical* **2008**, 14:403-408.
- Coelho, D. C. Ecologia de populações e história natural de *Lonchophylla dekeyseri*, um morcego endêmico do Cerrado. Masters degree, Universidade de Brasília, Distrito Federal, Brasil, **1999**.
- Coimbra Jr, C. E. A.; Borges, M. M.; Guerra, D. Q.; Mello, D. A. Contribuição à zoogeografia e ecologia de morcegos em regiões de cerrado do Brasil Central. *Boletim Técnico do IBAF* **1982**, 7, 33-38.

- Cury, G. C., A. D. Filho, A. G. C. Cruz and A. B. S. Hobaika. Surto de histoplasmose em Pedro Leopoldo, Minas Gerais, Brasil. *Revista Sociedade Brasileira de Medicina Tropical* **2001**, 34:483-486.
- Czaplewski, N. J.; Cartelle, C. Pleistocene bats from cave deposits in Bahia, Brazil. *Journal of Mammalogy* **1998**; 79, 784-803. DOI: 10.2307/1383089.
- Dessen, E. M.; Eston, B. V. R.; Silva, M. S.; Temperinibeck, M. T.; Trajano, E. Levantamento preliminar da fauna de cavernas de algumas regiões do Brasil. *Ciência e Cultura* **1980**, 32, 714-725.
- Esberard, C. E. L.; Martins, L. F. S.; Cruz, R. C.; Costa, R. C.; Nunes, M. S.; Luz, M. E.; Chagas, A. S. Aspectos da biologia de *Lonchorhina aurita* no Estado do Rio de Janeiro (Mammalia: Chiroptera: Phyllostomidae). *Revista Bioikos* **198**, 10, 46-49.
- Esbérard, C. E. L.; Bergallo, H. G. Aspectos sobre a biologia de *Tonatia bidens* (Spix) no estado do Rio de Janeiro, sudeste do Brasil (Mammalia, Chiroptera, Phyllostomidae). *Revista Brasileira de Zoologia* **2004**; 21, 253-259. DOI: 10.1590/S0101-81752004000200014.
- Esbérard, C. E. L.; Motta, J. A.; Perigo, C. Morcegos cavernícolas da Área de Proteção Ambiental (APA) Nascentes do Rio Vermelho, Goiás. *Revista Brasileira de Zoociências* **2005**, 7, 311-325.
- Esbérard, C. E. L.; Santos, B. S.; Faria, D. New *Thyroptera tricolor* Spix records in the Atlantic Forest, Brazil (Chiroptera; Thyropteridae). *Brazilian Journal of Biology* **2007**, 67, 379-380. DOI: 10.1590/S1519-69842007000200028.
- Esbérard, C. E. L.; Bergallo, H. G. Influência do esforço amostral na riqueza de espécies de morcegos no sudeste do Brasil. *Revista Brasileira de Zoologia* **2008**, 25:67-73. DOI: 10.1590/S0101-81752008000100010.
- Fabián, M. E. Quirópteros do bioma caatinga, no Ceará, Brasil, depositados no Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul. *Chiroptera Neotropical* **2008**, 14, 354-359.

- Faria, D.; Soares-Santos, B.; Sampaio, E. Bats from the Atlantic rainforest of southern Bahia, Brazil. *Biota Neotropica* **2006**, 6, 1-13. DOI: 10.1590/S1676-06032006000200022.
- Ferreira, R. L.; Martins, R. P. Diversity and distribution of spiders associated with bat guano piles in Morrinho cave (Bahia state, Brazil). *Diversity and Distributions* **1998**, 4, 235-241.
- Filho, D. Z.; Ribeiro, A. C.; Ribeiro, G. C.; Fracasso, M. P. A.; Pavani, M. M.; Oliveira, O. M. P.; Oliveira, S. A.; Marques, A. C. Faunistic survey of sandstone caves from Altinópolis region, São Paulo state, Brazil. *Papéis Avulsos de Zoologia* **2003**, 43, 93-99. DOI: 10.1590/S0031-10492003000500001.
- Graipel, M. E., J. J. Cherem, D. A. Machado, P. C. Garcia, M. E. Menezes and M. Soldateli. Vertebrados da Ilha de Ratonas Grande, Santa Catarina, Brasil. *Biotemas* 1997, 10:105-122.
- Gomes, F. T. M. C., R. L. Ferreira and C. M. Jacobi. Comunidade de artrópodes de uma caverna calcária em área de mineração: composição e estrutura. *Revista Brasileira de Zoociência* **2000**, 2:77-96.
- Gomes, M. N.; Uieda, W. Abrigos diurnos, composição de colônias, dimorfismo sexual e reprodução do morcego hematófago *Desmodus rotundus* (E. Geoffroy) (Chiroptera, Phyllostomidae) no Estado de São Paulo, Brasil. *Revista Brasileira de Zoologia* **2004**, 21, 629-638. DOI: 10.1590/S0101-81752004000300025.
- Gomes, C. I. D. Metabolismo energético e resposta ao jejum do morcego hematófago *Dyphilla ecaudata*. Masters degree, Universidade de Brasília, Distrito Federal, Brasil, 2008.
- Graciolli, G.; Rui, A. M. Streblidae (Diptera, Hippoboscoidea) em morcegos (Chiroptera, Phyllostomidae) no nordeste do Rio Grande do Sul, Brasil. *Iheringia* **2001**, 90, 85-92. DOI: 10.1590/S0073-47212001000100009.
- Graciolli, G. and D. C. Coelho. Streblidae (Diptera, Hippoboscoidea) sobre morcegos filostomídeos (Chiroptera, Phyllostomidae) em cavernas do Distrito Federal Brasil. *Revista Brasileira de Zoologia* **2001**, 18:965-970.

- Graciolli, G. Uma nova espécie de *Strebla* Wiedemann, 1824 (Diptera, Streblidae, Streblinae) sobre *Anoura caudifer* (E. Geoffroy, 1818) (Chiroptera, Phyllostomidae, Glossophaginae). *Revista Brasileira de Entomologia* **2003**, 47:435-436.
- Graciolli, G. Nycteribiidae (Diptera, Hippoboscoidea) no sul do Brasil. *Revista Brasileira de Zoologia* **2004**, 21, 971-985. DOI: 10.1590/S0101-81752004000400035.
- Gregorin, R.; Mendes, L. F. Sobre quirópteros (Emballonuridae, Phyllostomidae, Natalidae) de duas cavernas da Chapada Diamantina, Bahia, Brasil. *Iheringia* **1999**, 86, 121-124.
- Gregorin, R.; Carmignotto, A. P.; Percequillo, A. R. Quirópteros do Parque Nacional da Serra das Confusões, Piauí, nordeste do Brasil. *Chiroptera Neotropical* **2008**, 14, 366-383.
- Guerra, D. Q. Chiroptera de Pernambuco: distribuição e aspectos biológicos. Masters degree, Universidade Federal de Pernambuco, Pernambuco, Brasil, **2007**.
- Martuscelli, P. Avian predation by the round-Eared bat (*Tonatia bidens*, Phyllostomidae) in the Brazilian Atlantic Forest. *Journal of Tropical Ecology* **1995**, 11:461-464. DOI: 10.1017/S0266467400008944.
- McNab, B. K.; Morrison, P. Observations on bats from Bahia. *Journal of Mammalogy* **1963**, 44, 21-23. DOI: 10.2307/1377164.
- Mikalauskas, J. S. Diversidade, dieta e reprodução de morcegos (Mammalia, Chiroptera) da Serra de Itabaiana, Sergipe. Masters degree, Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro, Brasil, **2007**.
- Miranda, D. J.; Bernardi, I. P. Aspectos da história natural de *Mimon bennettii* (Gray) na Escarpa Devoniana, Estado do Paraná, Brasil (Chiroptera, Phyllostomidae). *Revista Brasileira de Zoologia* **2006**, 23, 1258-1260. DOI: 10.1590/S0101-81752006000400038.
- Miretzki, M. Morcegos do estado do Paraná, Brasil (Mammalia, Chiroptera): riqueza de espécies, distribuição e síntese do conhecimento atual. *Papéis Avulsos de Zoologia* **2003**, 43, 101-138. DOI: 10.1590/S0031-10492003000600001.

- Mok, W. Y.; Wilson, D. E.; Lacey, L. A.; Luizão, R. C. C. Lista atualizada de quirópteros da Amazônia brasileira. *Acta Amazonica* **1982**, 12, 817-823. DOI: 10.1590/1809-43921982124817.
- Oprea, M.; Vieira, T. B.; Pimenta, V. T.; Mendes, P.; Brito, D.; Ditchfield, A. D.; Knecht, L. V and Esberard, C. E. L. Bat predation by *Phyllostomus hastatus*. *Chiroptera Neotropical* **2006**, 12, 255-258.
- Patricio-Costa, P.; Passos, F. Levantamento da fauna de morcegos do Parque Estadual de Campinhos, Paraná, Brasil. Relatório parcial de pesquisa, Campinhos, Brasil, **2008**.
- Peracchi, A. L.; Albuquerque, S. T. Lista provisória dos quirópteros dos estados do Rio de Janeiro e Guanabara, Brasil. *Revista Brasileira de Biologia* **1971**, 31, 405-413.
- Piccinini, R. S. Lista provisória dos quirópteros da coleção do Museu Paraense Emílio Goeldi (Chiroptera). *Boletim do Museu Paraense Emílio Goeldi* **1974**, 77, 1-31.
- Pinto-da-Rocha, R. Sinopse da fauna cavernícola do Brasil. *Papéis Avulsos de Zoologia* **1995**, 39, 61-173.
- Portella, A. S. 2010. Morcegos cavernícola e relações parasite-hospedeiro com moscas estreblídeas em cinco cavernas no Distrito Federal. Universidade de Brasília, Brasília, Distrito Federal, Brasil, **2010**.
- Governo do Estado do Tocantins - Plano de Manejo do Parque Estadual do Jalapão. Available online: <http://www.terrabrasil.org.br/ecotecadigital/pdf/plano-de-manejo-do-parque-estadual-do-jalapao-to.pdf> (20/09/2013).
- Pol, A.; Nogueira, M. R.; Peracchi, A. L. Primeiro registro da família Furipteridae (Mammalia, Chiroptera) para o estado do Rio de Janeiro, Brasil. *Revista Brasileira de Zoologia* **2003**, 20, 561-563. DOI: 10.1590/S0101-81752003000300031.
- Queiroz, J. F. Secreção e sensibilidade periférica à insulina e hormônios contra-regulatórios do morcego hematófago *Desmodus rotundus*. Masters degree, Universidade de Brasília, Brasília, Distrito Federal, Brasil, **2008**.



- Reis, N. R.; Schubart, H. O. R. Notas preliminares sobre os morcegos do Parque Nacional da Amazônia (Médio Tapajós). *Acta Amazonica* **1979**, 9, 507-515. DOI: 10.1590/1809-43921979093507.
- Santos, C. M. Estudo imuno-histoquímico das células endócrinas do tubo gastrintestinal de morcegos (Mammalia: Chiroptera). Masters degree, Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro, Brasil, **2007**.
- Sato, T. M. Estrutura de comunidade, comportamento alimentar e frugivoria dos morcegos (Mammalia, Chiroptera) em *Cecropia pachystachya* (Urticaceae) na Estação Experimental de Itirapina, SP. Masters degree, Universidade Federal do Paraná, Paraná, Brasil, **2007**.
- Sazima, I. Vertebrates as food items of the Wolly False Vampire, *Chrotopterus auritus*. *Journal of Mammalogy* **1978**, 59, 617-618. DOI: 10.2307/1380238.
- Sbragia, I. A. and A. Cardoso. Quiróptero-fauna (Mammalia: Chiroptera) cavernícola da Chapada Diamantina, Bahia, Brasil. *Chiroptera Neotropical* **2008**, 14, 360-365.
- Silva, S. S. P., P. G. Guedes and A. L. Peracchi. Levantamento preliminar dos morcegos do Parque Nacional de Ubajara (Mammalia, Chiroptera), Ceará, Brasil. *Revista Brasileira de Zoologia* **2001**, 18, 139-144. DOI: 10.1590/S0101-81752001000100015.
- Silva, F.; Souza, M. F. B. *Tadarida laticaudata* GEOFFROY, 1805, nova ocorrência para o estado do Rio Grande do Sul, Brasil (Chiroptera, Mammalia). *Iheringia* **1980**, 56, 3-5.
- Spoladore, A. and L. R. Cottas. A gruta do Portão de Cima e a gruta do Portão de Baixo: duas cavernas areníticas no município de Sengés – PR. *Geografia* 2005, 14:71-83.
- Taddei, V. A.; Uieda, W. Distribution and morphometrics of *Natalus stramineus* from South America (Chiroptera, Natalidae). *Iheringia* **2001**, 91, 123-132. DOI: 10.1590/S0073-47212001000200018.

- Trajano, E. Ecologia de populações de morcegos cavernícolas em uma região cárstica do sudeste do Brasil. *Revista Brasileira de Zoologia* **1984**, 2, 255-320. DOI: 10.1590/S0101-81751984000100001.
- Trajano, E.; Gnaspini-Netto, P. Composição da fauna cavernícola brasileira, com uma análise preliminar da distribuição dos táxons. *Revista Brasileira de Zoologia* **1991**, 7, 383-407. DOI: 10.1590/S0101-81751990000300017.
- Trajano, E.; Moreira, J. R. A. Estudo da fauna de cavernas da província espeleológica arenítica Altamira-Itaituba, Pará. *Revista Brasileira de Biologia* **1991**, 51, 13-29.
- Trajano, E. Movements of cave bats in southeastern Brazil, with emphasis on the population ecology of the Common Vampire Bat, *Desmodus rotundus* (Chiroptera). *Biotropica* **1996**, 28, 121-129. DOI: 10.2307/2388777.
- Trajano, E.; Gimenez, E. A. Bat community in a cave from eastern Brazil, including a new Record of *Lionycteris* (Phyllostomidae, Glossophaginae). *Studies on Neotropical Fauna and Environment* **1998**, 33, 69-75. DOI: 10.1076/snfe.33.2.69.2156.
- Uieda, W. A review of complete albinism in bats with five new cases from Brazil. *Acta Chiropterologica* **2000**, 2:97-105.
- Uieda, W.; Sazima, I.; Filho, A. S. Aspectos da biologia do morcego *Furipterus horrens* (Mammalia, Chiroptera, Furipteridae). *Revista Brasileira de Biologia* **1980**, 40, 59-66.
- Zortéa, M.; Alho, C. J. R. Bat diversity of a Cerrado habitat in Central Brazil. *Biodiversity and Conservation*, **2008**, 17, 791-806.

**Table 1.** Distribution and abundance of cave-dwelling bat species in Brazilian biomes.

Species (Family)	Abundance	Biomes	Coordinates	References
<i>Desmodus rotundus</i> (Phyllostomidae)	3671	BS, AF, SF, SF/BS; SF/AF, AF/Gr	(15°30' S; 48°10' W) (15°27' S; 48°09' W) (15°32'S, 47°52'W) (15°33'S, 47°45'W) (15°34'S, 48°07'W) (15°32'S, 47°44'W) (15°33'S, 48°07'W) (15°29'S, 48°03'W) (15°33'S, 48°07'W) (15°52'S, 47°48'W) (15°33'S, 47°52'W) (15°52'S, 48°11'W) (15°33'S, 47°49'W) (15°51'S, 47°47'W) (15°29'S, 48°04'W) (15°51'S, 48°11'W) (15°35'41" S; 39°52'36" W) (29°18'S; 49° 44' W) (23.0°-23.5°S, 48.5°- 47,5° W) (22°55'31,1"S e 043°16'04,4" W) (22°57'35,0"S; 043°16'27,6"W) (21°07'25" S e 47°24'47" W) (21°07'06" S e 47°25'38" W) (21°07'37" S e 47°24'25" W) (21°04'05" S; 47°26'14" W) (21°03'54" S e 47°26'00" W) (23°07' S e 48°28' W) (22°36' S e 44°52' W) (22°49' S e 46°53' W) (22°34' S e 44°55' W) (15°07' S, 44°10' W) (24°16' S, 48°25' W) (24°16' S, 48°27' W) (24°29' S, 48°35' W) (25°03'00" S; 49°04'20" W) (25°28'18" S; 49°42'53" W) (25°00' S; 049°38' W) (25°19' S; 049°17' W) (25°14'05" S, 49°12'23" W) (25°10'38" S, 49°18'16" W) (25°12'58" S, 49°31'23" W) (25°16'45" S, 49°21'30" W) (25°09'56" S, 49°18'05" W) (25°43'40" S, 49°32'50" W) (25°01'23" S, 49°47'30" W) (24°44'50" S, 49°06'40" W) (24°48'06" S, 49°12'40" W) (24°45'08" S, 49°05'46" W) (24°42'44" S, 49°07'57" W) (40°52'- 40°55'W, 3°48'-3°50'S) (40°52'-40°55'W, 3°48'-3°50'S) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17" W; 10° 30' 27" S) (41° 09' 22" W; 11° 33' 00" S) (19°11'18" S, 52°46'59" W) (24°36'S, 48°40'W) (24°34'S, 48°40'W) (24°33' S,	Bredt et al. 1999; Aguiar et al. 200 Queiroz, 2008; Faria et al. 200 Gregorín et al. 2008; Campanhã Fowler, 1993; Campanhã & Fowl 1995; Esbérard & Bergallo, 200 Filho et al. 2003; Gomes & Uied 2004; Trajano & Gimenez, 199 Trajano & Gnaspini-Neto, 199 Patricio-Costa & Passos, 200 Arnone & Passos, 2007; carvalho Bernardi, 2006; Miretzki, 200 Pinto-da-Rocha, 1995; Silva et 2001; Uieda et al. 1980; Faria et 2006; Czaplewski & Cartelli, 200 Bordignon, 2006; Trajano, 199 Trajano, 1984; Dessen et al. 198 Taddei & Uieda, 2001; Baumgart & Veira, 1994; Mikalauskas, 200 Guerra, 2007; Gregorín & Mend 1999; Esberárd et al. 2005; Portel 2010; Trajano & Moreira, 1991; Sa 2007; Coimbra et al. 1982; Ferreira al. 2005; Bahia & Ferreira, 200 Peracchi & Albuquerque, 197 Santos, 2007; Uieda, 2000

48°41'W) (24°32'S, 48°42'W) (24°31'S, 48°42'W)  
 (24°31'S, 48°42'W) (24°35'S, 48°42'W) (24°35'S,  
 48°42'W) (24°35'S, 48°42'W) (24°34' S, 48°40' W)  
 (24°34' S, 48°40' W) (24°35' S, 48°42' W) (24°34' S,  
 48°41' W) (24°26' S, 48°35' W) (24°38' S, 48°42' W)  
 (24°33' S, 48°43' W) (24°34' S, 48°43' W) (24°37' S,  
 48°56' W) (24°45' S, 48°32' W) (24°33' S, 48°41' W)  
 (24°35' S, 49°00' W) (24°32' S, 48°52' W) (24°32' S,  
 48°47' W) (24°16' S, 48°26' W) (24°19' S, 48°27' W)  
 (19°03'S, 52°58'W) (19°03'S, 52°58'W) (18°59'S,  
 54°48'W) (15°31'30"S, 47°50'30"W) (10°40' S, 37°25'  
 W) (36° 03' 24" W ; 08° 00' 24" S) (12°56'41" S;  
 41°6'18" W) (12°56'41" S; 41°6'18" W) (14° 17'  
 28,26965" S; 46° 15' 31,73842" W) (14° 17' 42,89193"  
 S; 46° 15' 23,64357" W) (14° 21' 47,95386" S; 46° 12'  
 21,27783" W) (14° 24' 25,03600" S; 46° 11' 43,11464"  
 W) (14° 26' 55,10358" S; 46° 11' 35,13216"W) (14°  
 27' 08,11493" S; 46° 12' 59,05913" W) (14° 28'  
 21,89743" S; 46° 07' 11,26381" W) (14° 30' 41,85080"  
 S; 46° 15' 32,56224" W) (14° 31' 04,05950" S; 46° 06'  
 23,31233" W) (14° 32' 23,77902" S; 46° 05' 06,64410"  
 W) (15°31'00.3" S; 47°44'12.9" W) (15°30'25.4" S;  
 47°77'16.7" W ) (15°31'14.0" S; 48°07'28.5" W )  
 (15°32'46.6" S; 47°51'59.2" W) (15°30'41.9" S;  
 48°10'02.4" W) (3°18'43"S, 52°20'28"W) (22°15'S,  
 47°49'W) (3°22'30"S, 52°34'18"W) (48° 50' 33" W; 24°  
 30' 34" S)

<i>Carollia perspicillata</i> (Phyllostomidae)	878	BS, AF, BS/SF, SF	(10°20,695' S; 46°34,335' W) (S10°20,695' ;W46°34,335') (15°30' S - 48°10' W) (15°32'S, 47°52'W) (15°33'S, 47°45'W) (15°34'S, 48°07'W) (15°33'S, 48°07'W) (15°29'S, 48°03'W) ( 15°52'S, 48°11'W) (15°29'S, 48°04'W) (15°35'41" S; 39°52'36" W) (29°18'S; 49° 44'W) (11°-14°S; 41°-43° W) ) (23.0°-23.5°S, 48.5°- 47,5° W) (22°55'31,1"S e 043°16'04,4" W) (22°57'35,0"S; 043°16'27,6"W)	Plano de Manejo do Jalapão, 2006; Aguiar et al. 2006; Bredt et al. 1999; Faria et al. 2006; Gregorín et al. 2008; Sbragia & Cardoso, 2006; Campanhã & Fowler, 1993; Esbérzar & Bergallo, 2004; Trajano Gimenez, 1998; Patricio-Costa Passos, 2008; Arnone & Passos
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(15°07' S, 44°10' W) (25°03'00''S; 49°04'20''W)  
(24°44'50" S, 49°06'40" W) (24°30'59" S, 49°03'16"  
W) (40°52'-40°55'W, 3°48'-3°50'S) (03°48'S - 03°50'S,  
40°52'W - 40°50'W) (03°48'S - 03°50'S, 40°52'W -  
40°50'W) (15°33'47" S; 39°18'09" W) (15°27'51" S ;  
39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17"  
W; 10° 30' 27" S) (24°36'S, 48°40'W) (24°34'S,  
48°40'W) (24°33' S, 48°41'W) (24°32'S, 48°42'W)  
(24°31'S, 48°42'W) (24°31'S, 48°42'W) (24°35'S,  
48°42'W) (24°35'S, 48°42'W) (24°35'S, 48°42'W)  
(24°35'S, 48°42'W) (24°34' S, 48°40' W) (24°32' S,  
48°43' W) (24°32' S, 48°39' W) (24°32' S, 48°40' W)  
(24°38' S, 48°42' W) (24°33' S, 48°43' W) (24°33' S,  
48°42' W) (24°33' S, 48°41' W) (24°37' S, 48°56' W)  
(24°45' S, 48°32' W) (24°34' S, 48°41' W) (24°35' S,  
49°00' W) (24°32' S, 48°52' W) (24°31' S, 48°43' W)  
(24°32' S, 48°47' W) (19°03'S, 52°58'W) (36° 03' 24"  
W ; 08° 00' 24" S) (12°56'41" S; 41°6'18" W)  
(12°56'41" S; 41°6'18" W) (14° 17' 42,89193" S; 46°  
15' 23,64357" W) (14° 21' 47,95386" S; 46° 12'  
21,27783" W) (14° 24' 25,03600" S; 46° 11' 43,11464"  
W) (14° 25' 54,14202" S; 46° 09' 16,40497" W) (14°  
26' 55,10358" S; 46° 11' 35,13216" W) (14° 27'  
08,11493" S; 46° 12' 59,05913" W) (14° 27' 20,69799"  
S; 46° 09' 09,35611" W) (14° 28' 21,89743" S; 46° 07'  
11,26381" W) (14° 30' 41,85080" S; 46° 15' 32,56224"  
W) (14° 31' 04,05950" S; 46° 06' 23,31233" W) (14°  
32' 23,77902" S; 46° 05' 06,64410" W) (40° 19' 17" W;  
10° 30' 27" S) (15°31'00.3" S; 47°44'12.9" W)  
(15°30'25.4" S; 47°77'16.7" W ) (15°31'14.0" S;  
48°07'28.5" W ) (15°32'46.6" S; 47°51'59.2" W)  
(15°30'41.9" S; 48°10'02.4" W) (19° 00' 33" S, 57° 39'  
12" W) (47°50' - 48°12'W; 15°30' - 15°40'S)

2007; Pinto-da-Rocha, 1995; Silva  
al. 2001; Uieda et al. 1980; Faria  
al. 2006; Czaplewski & Carte  
2008; Trajano, 1984, Trabajo, 199  
Dessen et al. 1980; Taddei & Uie  
2001; Guerra, 2007; Gregorín  
Mendes, 1999; Esberárd et al. 200  
Czaplewski & Cartelli, 200  
Portella, 2010; Piccini, 199  
Bordignon, 2005; Graciolli  
Coelho, 2001

<i>Lonchorhina aurita</i> (Phyllostomidae)	809	BS, AF, SF/AF; SF	(S10°20,695' e W46°34,335') (15°27' S; 48°09' W) (15°34'S, 48°07'W) (15°29'S, 48°03'W) (24°29' S, 48°35' W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (24°31'S, 48°42'W) (24°34' S, 48°40' W) (19°03'S, 52°58'W) (10°40' S, 37°25' W) (36° 03' 24" W; 08° 00' 24" S) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 20,69799" S; 46° 09' 09,35611" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W) (15°32'46.6" S; 47°51'59.2" W) (15°30'41.9" S; 48°10'02.4" W) (3°22'30"S, 52°34'18"W)	Plano de Manejo do Jalapão, 2006; Bredt et al. 1999; Trajano Gnaschini-Neto, 1990; Faria et al. 2006; Trajano, 1984; Trajano, 1999; Taddei & Uieda, 2001; Mikalauskas, 2007; Guerra, 2007; Esberárd et al. 2005; Portella, 2010; Trajano Moreira, 1991; Santos, 2007;
<i>Anoura geoffroyi</i> (Phyllostomidae)	747	BS, AF, SF/AF	(15°33'S, 47°45'W) (15°32'S, 47°44'W) (15°52'S, 47°48'W) (15°33'S, 47°52'W) (24°16' S, 48°25' W) (24°15' S, 48°27' W)( 25°03'00" S; 49°04'20" W) (29°18'S, 49° 44'W) (24°32' S, 48°47' W) (15°31'30"S, 47°50'30"W) (10°40' S, 37°25' W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (15°31'14.0" S; 48°07'28.5" W ) (47°50' - 48°12'W; 15°30' - 15°40'S)	Bredt et al. 1999; Trajano Gnaschini-Neto, 1990; Patricio-Coelho & Passos, 2008; Arnone & Passos, 2007; Graciolli & Rui, 2001; Dessalines et al. 1980; Baumgarten & Vieira, 1994; Mikalauskas, 2007; Esberárd et al. 2005; Portella, 2010; Graciolli Coelho, 2001
<i>Phyllostomus hastatus</i> (Phyllostomidae)	548	BS, SF/BS, AF, SF; SF/AF	(15°30' S - 48°10' W) (15°34'S, 48°07'W) (15°32'S, 47°44'W) (15°33'S, 48°07'W) (15°29'S, 48°03'W) (11°- 14°S; 41°-43° W) (16°19'22" S - 46°58'37" W) (20°33'45" S – 41°11'15" W) (40°52'-40°55'W, 3°48'- 3°50'S) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (41° 09' 22" W; 11° 33' 00" S) (41° 48' 31" W; 28' 53" S) (10°40' S, 37°25' W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (15°31'14.0" S; 48°07'28.5" W ) (15°30'41.9" S; 48°10'02.4" W)	Aguiar et al. 2006; Bredt et al. 1999; Sbragia & Cardoso, 2008, Oprea et al. 2006; Silva et al. 2001; Uieda et al. 1980; Faria et al. 2006; Czaplewski & Cartelli, 2006; Mikalauskas, 2007; Esberárd et al. 2005; Czaplewski & Cartelli, 2006; Portella, 2010
<i>Glossophaga soricina</i> (Phyllostomidae)	533	BS, AF, SF,	(S10°20,695'; W46°34,335') (S10°20,695'; W46°34,335') (15°27' S; 48°09' W) (15°32'S, 47°52'W) (15°33'S, 47°45'W) (15°33'S, 48°07'W) (15°34'S,	Plano de Manejo do Jalapão, 2006; Bredt et al. 1999; Faria et al. 2006; Gregorin et al. 2008; Sbragia

		SF/BS	48°07'W) (15°32'S, 47°44'W) (15°33'S, 48°07'W) (15°29'S, 48°03'W) (15°52'S, 47°48'W) (15°33'S, 47°52'W) (15°30'S, 47°57'W) (15°30'S, 48°09'W) (15°51'S, 47°47'W) (15°30'S, 47°47'W) (15°29'S, 48°04'W) (15°35'41" S; 39°52'36" W) (29°18'S; 49°44'W) (11°-14°S; 41°-43° W) (23.0°-23.5°S, 48.5°-47,5° W) (21°07'25" S e 47°24'47" W) (21°07'06" S e 47°25'38" W) (16°19'22" S - 46°58'37" W) (15°07' S, 44°10' W) (25°03'00" S; 49°04'20" W) (25°19' S; 049°17' W) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (12°56'41" S; 41°6'18" W) (14° 17' 28,26965" S; 46° 15' 31,73842" W) (14° 17' 42,89193" S; 46° 15' 23,64357" W) (14° 21' 47,95386" S; 46° 12' 21,27783" W) (14° 24' 11,18399" S; 46° 11' 13,41587" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 25' 54,14202" S; 46° 09' 16,40497" W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 28' 21,89743" S; 46° 07' 11,26381" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W) (14° 31' 04,05950" S; 46° 06' 23,31233" W) (40° 19' 17" W; 10° 30' 27" S) (15°31'00.3" S; 47°44'12.9" W) (15°30'25.4" S; 47°77'16.7" W ) (15°31'14.0" S; 48°07'28.5" W ) (15°32'46.6" S; 47°51'59.2" W) (15°30'41.9" S; 48°10'02.4" W)	Cardoso, 2008; Campanhã & Fowl 1993; Filho et al. 2003; Oprea et 2006; Trajano & Gimenez, 1999; Patricio-Costa & Passos, 2006; Arnone & Passos, 2007; Miretz 2003; Uieda et al. 1980; Faria et 2006; Gregorín & Mendes, 1999; Esberárd et al. 2005; Czaplewski Cartelli, 2008; Portella, 2010; Picci 1974
<i>Furipterus horrens</i> (Furipteridae)	490	BS, SF, AF	(15°32'S, 47°44'W) (15°33'S, 48°07'W) (15°29'S, 48°03'W) (15°33'S, 47°49'W) (15°30'S, 48°09'W) (15°29'S, 48°04'W) (29°18'S; 49° 44'W) (23°17'12" S e 44°31'44" W) (24°16' S, 48°25' W) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (40° 19' 17" W; 10° 30' 27" S) (24°31'S, 48°42'W) (24°34' S, 48°40' W) (24°32' S, 48°43' W) (24°33' S, 48°41' W) (14° 24' 25,03600" S; 46° 11' 43,11464" W)	Bredt et al. 1999; Gregorín et 2008; Pol et al. 2003; Trajano Gnaspini-Neto, 1990; Uieda et 1980; Czaplewski & Cartelli, 2006; Trajano, 1984; Esberárd et al. 2006; Coimbra et al. 1982

<i>Lonchophylla dekeyseri</i> (Phyllostomidae)	431	BS	(15°30' S - 48°10' W) (15°32'S, 47°52'W) (15°34'S, 48°07'W) (14° 17' 42,89193" S; 46° 15' 23,64357" W) (14° 21' 47,95386" S; 46° 12' 21,27783" W) (14° 24' 11,18399" S; 46° 11' 13,41587" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 25' 54,14202" S; 46° 09' 16,40497" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 20,69799" S; 46° 09' 09,35611" W) (14° 28' 21,89743" S; 46° 07' 11,26381" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W) (14° 31' 04,05950" S; 46° 06' 23,31233" W) (14° 32' 23,77902" S; 46° 05' 06,64410" W) (15°31'00.3" S; 47°44'12.9" W) (15°31'14.0" S; 48°07'28.5" W ) (15°32'46.6" S; 47°51'59.2" W) (15°30'41.9" S; 48°10'02.4" W)	Aguiar et al. 2006; Bredt et al. 1999; Coelho, 1999; Esberárd et al. 2005; Portella, 2010
<i>Dyphilla ecaudata</i> (Phyllostomidae)	328	BS, SF, SF/BS, AF	(15°30' S - 48°10' W) (15°27' S 48°09' W) (15°32'S, 47°52'W) (15°34'S, 48°07'W) (15°29'S, 48°03'W) (15°30'S, 48°09'W) (15°29'S, 48°04'W) (29°18'S; 49° 44'W) (11°-14°S; 41°-43° W) (22°57'35,0"S e 043°16'27,6"W) (15°07' S, 44°10' W) (25°03'00" S; 49°04'20" W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17" W; 10° 30' 27" S) (24°36'S, 48°40'W) (24°34'S, 48°40'W) (24°33' S, 48°41'W) (24°32'S, 48°42'W) (24°31'S, 48°42'W) (24°35'S, 48°42'W) (24°35'S, 48°42'W) (24°35'S, 48°42'W) (24°35' S, 48°42' W) (24°45' S, 48°32' W) (24°35' S, 49°00' W) (12°22' S, 44°58' W) (36° 03' 24" W ; 08° 00' 24" S) (12°56'41" S; 41°6'18" W) (14° 17' 28,26965" S; 46° 15' 31,73842" W) (14° 17' 42,89193" S; 46° 15' 23,64357" W) (14° 21' 47,95386" S; 46° 12' 21,27783" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 20,69799" S; 46° 09' 09,35611" W) (14° 28' 21,89743" S; 46° 07' 11,26381" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W)	Aguiar et al. 2006; Bredt et al. 1999; Gomes, 2008; Gregorín et al. 2005; Sbragia & Cardoso, 2008; Esberárd & Bergallo, 2004; Trajano Gimenez, 1998; Patricio-Costa Passos, 2008; Arnone & Passos, 2007; Faria et al. 2006; Czaplewski & Cartelli, 2008; Trajano, 1999; Trajano, 1984; Guerra, 2005; Gregorín & Mendes, 1999; Esberárd et al. 2005; Portella, 2010 ; Trajano & Moreira, 1991; Coimbra et al. 1999



			W) (15°31'00.3" S; 47°44'12.9" W) (15°30'25.4" S; 47°77'16.7" W) (15°31'14.0" S; 48°07'28.5" W) (15°32'46.6" S; 47°51'59.2" W) (15°30'41.9" S; 48°10'02.4" W) (3°18'43"S, 52°20'28"W)	
<i>Anoura caudifer</i> (Phyllostomidae)	182	SF/BS, AF	(11°-14°S; 41°-43° W) (23.0°-23.5°S, 48.5°- 47,5° W) (25°03'00''S, 49°04'20''W) (29°18'S, 49° 44'W) (25°19'S; 049°17'W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (24°33' S, 48°41'W) (24°31'S, 48°42'W) (24°32' S, 48°43' W) (24°32' S, 48°39' W) (24°32' S, 48°40' W) (24°38' S, 48°42' W) (24°33' S, 48°42' W) (24°33' S, 48°42' W) (24°37' S, 48°56' W) (24°34' S, 48°41' W) (24°32' S, 48°52' W) (24°31' S; 48°43' W) (14° 17' 42,89193" S; 46° 15' 23,64357" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 25' 54,14202" S; 46° 09' 16,40497" W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W) (40° 19' 17" W; 10° 30' 27" S) (49° 05' 09" W; 24° 58' 28" S)	Sbragia & Cardoso, 2008; Campan & Fowler, 1993; Patricio-Costa Passos, 2008; Arnone & Passos, 2007; Graciolli & Rui, 2003; Miretzki, 2003; Faria et al. 2006; Trajano, 1984; Esberárd et al. 2005; Czaplewski & Cartelli, 2005; Graciolli, 2003
<i>Myotis nigricans</i> (Vespertilionidae)	153	BS, AF, SF	(15°33'S, 48°07'W) (15°30'S, 47°57'W) (15°35'41" S; 39°52'36" W) (29°18'S; 49° 44'W) (23.0°-23.5°S, 48.5°- 47,5° W) (20°33'45" S; 41°11'15" W) (24°16' S, 48°25' W) (24°16' S, 48°27' W) (25°03'00''S; 49°04'20''W) (25°19'S e 049°17'W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (24°34' S, 48°40' W) (24°34' S, 48°41' W) (24°26' S, 48°35' W) (24°35' S, 49°00' W) (18° 25'S; 52°00' W) (14° 17' 42,89193" S; 46° 15' 23,64357" W) (14° 24' 11,18399" S; 46° 11' 13,41587" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 25' 54,14202" S; 46° 09' 16,40497" W) (14° 28' 21,89743" S; 46° 07' 11,26381" W) (14° 32' 23,77902" S; 46° 05' 06,64410" W) (40° 19' 17" W; 10° 30' 27" S) (15°31'14.0" S; 48°07'28.5" W) (25° 11' 24" S; 49° 18' 51" W)	Bredt et al. 1999; Faria et al. 2006; Bredt et al. 1999; Campanhã & Fowler, 1993; Oprea et al. 2005; Trajano & Gnaspini-Neto, 1999; Patricio-Costa & Passos, 2005; Arnone & Passos, 2007; Miretzki, 2003; Faria et al. 2006; Trajano, 1984; Zortéa & Alho, 2008; Esberárd et al. 2005; Czaplewski & Cartelli, 2005; Portella, 2010; McNabb & Morrison, 1963; Graciolli, 2004

<i>Pteronotus parnellii</i> (Mormoopidae)	99	BS, SF	(S10°20,695'; W46°34,335') (S10°20,695'; W46°34,335') (15°27' S; 48°09'W) (15°33'S, 47°45'W) (13°50' S, 46°40' W) (40° 19' 17" W; 10° 30' 27" S) (19°03'S, 52°58'W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (15°31'14.0" S; 48°07'28.5" W ) (3°18'43"S, 52°20'28"W)	Plano de Manejo do Jalapão, 2008; Bredt et al. 1999; Dessen et al. 1998; Czaplewski & Cartelli, 2008; Tadeu & Uieda, 2001; Esberárd et al. 2008; Portella, 2010; Trajano & Moreira, 1991
<i>Artibeus fimbriatus</i> (Phyllostomidae)	94	AF	(25°03'00" S; 49°04'20" W) (24°36'S, 48°40'W)	Patricio-Costa & Passos, 2008; Trajano, 1996
<i>Peropteryx macrotis</i> (Emballonuridae)	84	BS, BS/SF, AF, SF	(15°30' S - 48°10' W) (15°34'S, 48°07'W) (15°33'S, 48°07'W) (22°30'-22°33'S; 49°15'-42°19'W) (15°29'S, 48°03'W) (15°33'S, 48°07'W) (15°30'S, 47°57'W) (11°-14°S; 41°-43° W) (15°07' S, 44°10' W) (19°11'18" S, 52°46'59" W) (24°36'S, 48°40'W) (24°31'S, 48°42'W) (24°35'S, 48°42'W) (24°34' S, 48°41' W) (24°33' S, 48°41' W) (18° 25'S; 52°00' W) (15°31'30"S, 47°50'30"W) (12°56'41" S; 41°6'18" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (40° 19' 17" W; 10° 30' 27" S) (15°31'00.3" S; 47°44'12.9" W) (15°30'25.4" S; 47°77'16.7" W ) (15°31'14.0" S; 48°07'28.5" W)	Aguiar et al. 2006; Bredt et al. 1999; Sbragia & Cardoso, 2008; Trajano & Gimenez, 1998; Bordignon, 2008; Trajano, 1996; Trajano, 1984; Zorn & Alho, 2008; Baumgarten & Vieira, 1994; Gregorín & Mendes, 1999; Esberárd et al. 2005; Czaplewski & Cartelli, 2008; Portella, 2010; Coimbra et al. 1982; Esberárd & Bergallo, 2008
<i>Natalus macrourus</i> (Natalidae)	79	BS, BS/SF, AF, SF, SF/AF	(15°32'S, 47°52'W) (11°-14°S; 41°-43° W) (15°07' S, 44°10' W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17" W; 10° 30' 27" S) (24°32'S, 48°42'W) (24°32' S, 48°39' W) (24°33' S, 48°40' W) (19°03'S, 52°58'W) (18°59'S, 54°48'W) (15°28'S, 49°00'W) (10°40' S, 37°25' W) (12°56'41" S; 41°6'18" W) (14° 21' 47,95386" S; 46° 12' 21,27783" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W) (40° 19' 17" W; 10° 30' 27" S)	Bredt et al. 1999; Sbragia & Cardoso, 2008; Trajano & Gimenez, 1999; Faria et al. 2006; Czaplewski & Cartelli, 2008; Trajano, 1984; Tadeu & Uieda, 2001; Dessen et al. 1998; Mikalauskas, 2007; Gregorín & Mendes, 1999; Esberárd et al. 2008; Czaplewski & Cartelli, 2008
<i>Mimon bennetti</i> (Phyllostomidae)	68	BS, SF, AF, AF/Gr	(15°27' S 48°09' W) (15°32'S, 47°52'W) (15°34'S, 48°07'W) (15°33'S, 48°07'W) (15°29'S, 48°04'W) (29°18'S; 49° 44'W) (24°15' S, 48°27' W) (24°29' S, 48°35' W) (25°03'00" S; 49°04'20" W) (25°28'18" S;	Bredt et al. 1999; Gregorín et al. 2008; Trajano & Gnaspiini-Neto, 1990; Patricio-Costa & Passos, 2008; Arnone & Passos, 2007; Miranda

			49°42'53"W) (24°30'59" S, 49°03'16" W) (28°29'04" S, 49°15'24" W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17" W; 10° 30' 27" S) (24°34' S, 48°43' W) (24°35' S, 49°00' W) (14° 17' 28,26965" S; 46° 15' 31,73842" W) (14° 17' 42,89193" S; 46° 15' 23,64357" W) (14° 21' 47,95386" S; 46° 12' 21,27783" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (14° 25' 54,14202" S; 46° 09' 16,40497" W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (14° 27' 08,11493" S; 46° 12' 59,05913" W) (14° 27' 20,69799" S; 46° 09' 09,35611" W) (14° 28' 21,89743" S; 46° 07' 11,26381" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W)	Bernardi, 2006; Pinto-da-Rocha 1995; Carvalho et al. 2008; Faria al. 2006; Czaplewski & Carte 2008; Trajano, 1984; Esberárd et 2005
<i>Chrotopterus auritus</i> (Phyllostomidae)	58	BS, AF, BS/SF, SF	(15°30' S - 48°10' W) (15°33'S, 47°45'W) (15°34'S, 48°07'W) (15°33'S, 48°07'W) (15°29'S, 48°03'W) (15°33'S, 48°07'W) (15°52'S, 47°48'W) (23.0°-23.5°S, 48.5°- 47,5° W) (23°30'S, 45°07'W) (15°07' S, 44°10' W) (24°16' S, 48°25' W) (24°15' S, 48°27' W) (25°03'00''S; 49°04'20''W) (25°19'S; 049°17'W) (25°09'56" S, 49°18'05" W) (25°01'23" S, 49°47'30" W) (24°48'06" S, 49°12'40" W) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17" W; 10° 30' 27" S) (19°11'18"S, 52°46'59"W) ( 24°34'S, 48°40'W) (24°31'S, 48°42'W) (24°31'S, 48°42'W) (24°35'S, 48°42'W) (24°34' S, 48°40' W) (24°33' S, 48°43' W) (24°45' S, 48°32' W) (24°16' S, 48°26' W) (23°33' S, 48°44' W) (12°56'41" S; 41°6'18" W) (14° 17' 28,26965" S; 46° 15' 31,73842" W) (25° 12' 22" S; 49° 06' 54" W) (19° 00' 33" S, 57° 39' 12" W)	Aguiar et al. 2006; Bredt et al. 1995; Campanhã & Fowler, 1993; Sazin 1978; Trajano & Gimenez, 1995; Trajano & Gnaspini-Neto, 1995; Patricio-Costa & Passos, 2007; Arnone & Passos, 2007; Miretz 2003; Pinto-da-Rocha, 1995; Uieda al. 1980; Faria et al. 2006; Czaplewski & Cartelli, 2006; Bordignon, 2006; Trajano, 1984; Trajano, 1996; Dessen et al. 1998; Gregorin & Mendes, 1999; Esberárd et al. 2005; Coimbra et al. 1998; Peracchi & Albuquerque, 1997; Graciolli, 2004; Bordignon, 2005

<i>Platyrrhinus lineatus</i> (Phyllostomidae)	64	BS, SF, SF/BS, AF	(15°30' S - 48°10' W) (15°34'S, 48°07'W) (15°29'S, 48°03'W) (15°29'S, 48°04'W) (29°18'S; 49° 44'W) (11°-14°S; 41°-43° W ) (23.0°-23.5°S, 48.5°- 47,5° W) (15°07' S, 44°10' W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (12°56'41" S; 41°6'18" W) (12°56'41" S; 41°6'18" W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (40° 19' 17" W; 10° 30' 27" S) (15°31'00.3" S; 47°44'12.9" W) (15°30'25.4" S; 47°77'16.7" W ) (15°31'14.0" S; 48°07'28.5" W ) (15°32'46.6" S; 47°51'59.2" W) (15°30'41.9" S; 48°10'02.4" W)	Aguiar et al. 2006; Bredt et al. 1999; Gregorín et al. 2008; Sbragia Cardoso, 2008; Campanhã & Fowl 1993; Trajano & Gimenez, 1999; Faria et al. 2006; Gregorín Mendes, 1999; Esberárd et al. 2005; Czaplewski & Cartelli, 2005; Portella, 2010
<i>Artibeus lituratus</i> (Phyllostomidae)	52	BS, AF, SF	(24°29' S, 48°35' W) (25°03'00" S; 49°04'20" W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (24°36'S, 48°40'W) (24°33' S, 48°41'W) (24°31'S, 48°42'W) (24°31'S, 48°42'W) (24°35'S, 48°42'W) (24°34' S, 48°40' W) (40° 19' 17" W; 10° 30' 27" S) (15°31'14.0" S; 48°07'28.5" W )	Trajano & Gnaspini-Neto, 1999; Patricio-Costa & Passos, 2008; Faria et al. 2006; Trajano, 1984; Trajano 1996; Czaplewski & Cartelli, 2005; Portella, 2010
<i>Sturnira lilium</i> (Phyllostomidae)	41	BS, SF, AF, AF/Gr	(S10°20,695'; W46°34,335') (S10°20,695'; W46°34,335') (15°30' S; 48°10' W) (29°18'S; 49° 44'W) (24°16' S, 48°25' W) (25°03'00" S; 49°04'20" W) (25°28'18" S; 49°42'53" W) (24°36'S, 48°40'W) (40° 19' 17" W; 10° 30' 27" S)	Plano de Manejo do Jalapão, 2005; Aguiar et al. 2006; Gregorín et al. 2008; Trajano & Gnaspini-Neto 1990; Patricio-Costa & Passos, 2008; Arnone & Passos, 2007; Miranda Bernardi, 2006; Trajano, 1999; Czaplewski & Cartelli, 2008
<i>Artibeus planirostris</i> (Phyllostomidae)	38	SF, SF/BS, BS	(29°18'S; 49° 44'W) (11°-14°S; 41°-43° W) (40° 19' 17" W; 10° 30' 27" S) (41° 09' 22" W; 11° 33' 00" S) (12°56'41" S; 41°6'18" W) (12°56'41" S; 41°6'18" W) (15°31'14.0" S; 48°07'28.5" W)	Gregorín et al. 2008; Sbragia Cardoso, 2008; Czaplewski Cartelli, 2008; Gregorín & Mendes, 1999; Portella, 2010
<i>Pteronotus gymnotus</i> (Mormoopidae)	30	BS, BS/SF, SF/AF	(S10°20,695'; W46°34,335') (S10°20,695'; W46°34,335') (15°33'S, 47°45'W) (11°-14°S; 41°-43° W) (10°40' S, 37°25' W) (14° 30' 41,85080" S; 46° 15' 32,56224" W)	Plano de Manejo do Jalapão, 2005; Bredt et al. 1999; Sbragia Cardoso, 2008; Mikalauskas, 2005; Esberárd et al. 2005
<i>Trachops cirrhosus</i> (Phyllostomidae)	25	BS, AF	(15°32'S, 47°52'W) (15°34'S, 48°07'W) (15°29'S, 48°03'W) (13°50' S, 46°40' W) (15°33'47" S; 39°18'09" W)	Bredt et al. 1999; Dessen et al. 1999; Faria et al. 2006; Trajano, 1999

			W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (24°35'S, 48°42'W) (24°38' S, 48°42' W) (14° 21' 47,95386" S; 46° 12' 21,27783" W) (14° 26' 55,10358" S; 46° 11' 35,13216" W) (14° 30' 41,85080" S; 46° 15' 32,56224" W) (15°32'46.6" S; 47°51'59.2" W)	Trajano, 1996; Esberárd et al. 2006; Portela, 2010
<i>Micronycteris megalotis</i> (Phyllostomidae)	24	BS, AF	(15°27' S; 48°09' W) (15°32'S, 47°52'W) (15°29'S, 48°03'W) (23.0°-23.5°S, 48.5°- 47,5° W) (25°19'S e 049°17'W) (24°37' S, 48°56' W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (40° 19' 17" W; 10° 30' 27" S) (15°31'00.3" S; 47°44'12.9" W) (15°30'25.4" S; 47°77'16.7" W) (15°31'14.0" S; 48°07'28.5" W)	Bredt et al. 1999; Campanhã Fowler, 1993; Miretzki, 2006; Trajano, 1984; Esberárd et al. 2006; Portella, 2010; Peracchi Albuquerque, 1971
<i>Tonatia bidens</i> (Phyllostomidae)	19	BS, AF, SF	(13°50' S, 46°40' W) (22°55'31,1"S; 043°16'04,4" W) (22°57'40,6" S; 043°17'61,0" W) (22°57'35,0"S; 043°16'27,6"W) (25°03' S; 47° 53' W) (15°07' S, 44°10' W) (24°16' S, 48°25' W) (15°33'47" S; 39°18'09" W) (15°27'51" S ; 39°39'04" W) (15°25'46" S; 39°20'03" W) (40° 19' 17" W; 10° 30' 27" S) (24°32' S, 48°40' W) (24°33' S, 48°41' W)	Dessen et al. 1980; Esberárd Bergallo, 2004; Martuscelli, 1999; Trajano & Gimenez, 1998; Trajano Gnaspini-Neto, 1990; Faria et 2006; Czaplewski & Cartelli, 2006; Trajano, 1984
<i>Phyllostomus discolor</i> (Phyllostomidae)	16	SF, SF/BS, AF	(29°18'S; 49° 44'W) (11°-14°S; 41°-43° W) (40°52'- 40°55'W, 3°48'-3°50'S) (03°48'S - 03°50'S, 40°52'W - 40°50'W) (40° 19' 17" W; 10° 30' 27" S)	Gregorin et al. 2008; Sbragia Cardoso, 2008; Silva et al. 2006; Uieda et al. 1980; Czaplewski Cartelli, 2008
<i>Myotis riparius</i> (Vespertilionidae)	14	AF	(25°19'S, 049°17'W)	Miretzki, 2003
<i>Micronycteris minuta</i> (Phyllostomidae)	13	AF, SF/BS, BS	(15°35'41" S; 39°52'36" W) (15°07' S, 44°10' W) (14° 24' 25,03600" S; 46° 11' 43,11464" W) (15°31'14.0" S; 48°07'28.5" W) (15°30'41.9" S; 48°10'02.4" W)	Faria et al. 2006; Trajano Gimenez, 1998; Esberárd et al. 2006; Portella, 2010
<i>Diaemus youngi</i> (Phyllostomidae)	12	BS	(15°30' S - 48°10' W) (15°30'41.9" S; 48°10'02.4" W)	Aguiar et al. 2006; Portella, 2010
<i>Lionycteris spurelli</i> (Phyllostomidae)	10	BS/SF, SF	(15°07' S, 44°10' W) (12°56'41" S; 41°6'18" W)	Trajano & Gimenez, 1998; Gregorí & Mendes, 1999
<i>Noctilio albiventris</i> (Noctilionidae)	10	AM	(3°50' até 5°S, 56°15' até 57°32'W)	Reis & Schulbart, 1979;

<i>Phylloderma stenops</i> (Phyllostomidae)	08	BS, BS/SF; AF	(15°32'S, 47°44'W) (15°07' S, 44°10' W) (24°31'S, 48°42'W) (14° 17' 28,26965" S; 46° 15' 31,73842" W)	Bredt et al. 1999; Trajano Gimenez, 1998; Trajano, 1984; Esberárd et al. 2005
<i>Peropteryx kappleri</i> (Emballonuridae)	07	AM, AF, BS/SF	(1° 27' 20.99" S; 48° 30' 15.98" W) (15°35'41" S; 39°52'36" W) (22°30'-22°33'S; 49°15'-42°19'W) (15°07' S, 44°10' W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W) (19° 00' 33" S, 57° 39' 12" W)	Mok et al. 1982; Faria et al. 2006; Baptista & Mello, 2001; Trajano Gimenez, 1998; Faria, 2006; Picci 1974; Bordignon, 2005
<i>Artibeus obscurus</i> (Phyllostomidae)	06	AF	(15°33'47" S; 39°18'09" W) (15°27'51" S ; 39°39'04" W) (15°25'46" S; 39°20'03" W)	Faria et al. 2006
<i>Pygoderma bilabiatum</i> (Phyllostomidae)	03	AF	(25°03'00''S; 49°04'20''W)	Patricio-Costa & Passos, 2008
<i>Sturnira tildae</i> (Phyllostomidae)	03	AF	(24°34' S, 48°41' W)	Trajano, 1984
<i>Choeroniscus minor</i> (Phyllostomidae)	02	BS	(14° 28' 21,89743" S; 46° 07' 11,26381" W)	Esberárd et al. 2005
<i>Lonchophylla mordax</i> (Phyllostomidae)	02	AF, SF	(8°37'23" S, 37°09'21" W) (40° 19' 17" W; 10° 30' 27" S) (12°56'41" S; 41°6'18" W)	Astúa & Guerra, 2008; Czaplewski Cartelli, 2008; Gregorín & Mendes 1999
<i>Nyctinomops laticaudata</i> (Molossidae)	02	AF	(29°21' S, 49°44' W)	Silva & Souza, 1980
<i>Dermanura cinerea</i> (Phyllostomidae)	02	BS	(15°31'00.3" S; 47°44'12.9" W)	Portella, 2010
<i>Glyphonycteris sylvestris</i> (Phyllostomidae)	02	AF	(24°36'S, 48°40'W)	Trajano, 1984; Trajano, 1996; Arnone, 2008
<i>Thyroptera tricolor</i> (Thyropteridae)	01	AF	(15° 23' 34" S; 39° 44' 26" W) (15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W)	Esbérard et al. 2007; Faria et al. 2006
<i>Rhynchonycteris naso</i> (Emballonuridae)	01	SF	(15° 23' 34" S; 39° 44' 26" W) (15°27' - 15°48' S; 57°03' - 57°19' W)	Fabián, 2008
<i>Vampyrum spectrum</i> (Phyllostomidae)	01	SF	(29°18'S; 49° 44'W)	Gregorín et al. 2008;
<i>Eptesicus furinalis</i> (Vespertilionidae)	01	AF	(25°03'00''S; 49°04'20''W)	Patricio-Costa & Passos, 2008
<i>Glyphonycteris behni</i>	01	BS	(15°31'14.0" S; 48°07'28.5" W)	Portella, 2010

(Phyllostomidae)				
<i>Lasiurus ega</i> (Vespertilionidae)	01	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Chiroderma doriae</i> (Phyllostomidae)	01	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Macrophyllum macrophyllum</i> (Phyllostomidae)	01	AF	(25°19'S; 049°17'W) (15°33'47" S; 39°18'09" W) (15°27'51" S ;39°39'04" W) (15°25'46" S; 39°20'03" W)	Miretzki, 2003; Faria et al. 2006
<i>Eptesicus brasiliensis</i> (Vespertilionidae)	01	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Nyctinomops macrotis</i> (Molossidae)	NR	SF, AF	(41° 09' 22" W; 11° 33' 00" S)	Czaplewski & Cartelli, 2008; Peracchi & Albuquerque, 1971
<i>Eptesicus diminutus</i> (Vespertilionidae)	NR	AF	(25°19'S e 049°17'W)	Miretzki, 2003
<i>Myotis levis</i> (Vespertilionidae)	NR	AF	(25°19'S e 049°17'W)	Miretzki, 2003
<i>Lophostoma silvicolum</i> (Phyllostomidae)	NR	AF, BS	(22°57'35,0"S; 043°16'27,6"W) (18° 25'S; 52°00' W)	Esbérard & Bergallo, 2004; Zortéa Alho, 2008
<i>Pteronotus personatus</i> (Mormoopidae)	NR	SF/AF	(10°40' S, 37°25' W)	Mikalauskas, 2007
<i>Mormoops megalophylla</i> (Mormoopidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Pteronotus davyi</i> (Mormoopidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Desmodus draculae</i> (Phyllostomidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S) (41° 04' 58" W; 10° 58' 12" S)	Czaplewski & Cartelli, 2008
<i>Molossus molossus</i> (Molossidae)	NR	SF	(41° 09' 22" W; 11° 33' 00" S)	Czaplewski & Cartelli, 2008
<i>Promops nasutus</i> (Molossidae)	NR	SF	(41° 09' 22" W; 11° 33' 00" S)	Czaplewski & Cartelli, 2008
<i>Eumops perotis</i> (Molossidae)	NR	SF	(41° 09' 22" W; 11° 33' 00" S)	Czaplewski & Cartelli, 2008
<i>Tadarida brasiliensis</i> (Molossidae)	NR	SF, BS	(40° 19' 17" W; 10° 30' 27" S) (41° 09' 22" W; 11° 33' 00" S) (18° 25'S; 52°00' W)	Czaplewski & Cartelli, 2008; Tadda & Uieda, 2001
<i>Molossops temmincki</i> (Molossidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008

<i>Eumops abrasus</i> (Molossidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Eumops bonariensis</i> (Molossidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Eumops bonariensis</i> (Molossidae)	NR	BS	(19° 37' 38" S; 43° 53' 23" W)	Czaplewski & Cartelli, 2008
<i>Lasiurus blossevilli</i> (Vespertilionidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Histiotus velatus</i> (Vespertilionidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Eptesicus fuscus</i> (Vespertilionidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Platyrrhinus helleri</i> (Phyllostomidae)	NR	BS	(15°30' S; 48°10' W)	Bredt & Magalhães, 2006
<i>Mimon crenulatum</i> (Phyllostomidae)	NR	SF	(40° 19' 17" W; 10° 30' 27" S)	Czaplewski & Cartelli, 2008
<i>Saccopteryx bilineata</i> (Emballonuridae)	NR	AF	(15°33'47" S; 39°18'09" W) (15°27'51" S; 39°39'04" W) (15°25'46" S; 39°20'03" W)	Faria et al. 2006

\*Biomes: AF= Atlantic rainforest; SF= Scrub forest; BS= Brazilian savannah; Gr= Grassland; AM= Amazon forest.  
NR= abundance not recorded.



