ECOLOGY OF TROPICAL FOREST SMALL MAMMAL POPULATIONS: PATTERNS AND PROCESS REVEALED BY THE LARGEST LONG-TERM MONITORING STUDY IN BRAZIL

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SUPPLEMENTARY MATERIAL 2

Table S2. List of small mammals captured along the 22-year long-term monitoring study at Garrafão, in the Serra dos Órgãos National Park, state of Rio de Janeiro, Brazil.

ORDEM DIDELPHIMORPHIA	
Família Didelphidae	*Caluromys philander* *Didelphis aurita* *Gracilinanus microtarsus* *Marmosa paraguayana* *Marmosops incanus* *Metachirus myosurus* *Monodelphis sp* *Philander quica*
ORDEM RODENTIA	
Família Sciuridae	*Guerlinguetus brasiliensis*
Família Cricetidae	*Akodon sp* *Delomys sp* *Euryoryzomys russatus*

	Juliomys pictipes *Oligoryzomys sp* *Rhipidomys itoan*
Família Echimyidae	 *Kannabateomys amblyonyx* *Phyllomys sp* *Trinomys dimidiatus*
Família Muridae	 *Rattus rattus*

SUPPLEMENTARY MATERIAL 3

Table S2. Studies that evaluated habitat selection at Garrafão, Serra dos Órgãos National Park, state of Rio de Janeiro, Brazil, during a 22-year long-term monitoring study of non-volant small mammals.

Habitat variable	Positive association	Negative association	None association
Microhabitat (ground of the forest)			
% Plant cover on the ground,		*D. aurita* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005) *M. myosuros* (Moura *et al.* 2005)	*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998; Aprigliano 2003) *M. incanus* (Freitas 1998*;* Aprigliano 2003) *M. myosuros* (Freitas 1998; Aprigliano 2003) *P. quica* (Freitas 1998)
% Litter cover	*D. aurita* (Moura *et al.* 2005) *M. incanus* (Ferreira 2009) *P. quica* (Freitas 1998; Moura *et al.* 2005)		*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998; Aprigliano 2003) *M. incanus* (Freitas 1998*;* Aprigliano 2003) *M. myosuros* (Freitas 1998; Aprigliano 2003; Moura *et al.* 2005)
% Rock cover	*M. incanus* (Ferreira 2009)	*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998; Moura *et al.* 2005) *M. myosuros* (Freitas 1998; Moura *et al.* 2005)	*D. aurita* (Aprigliano 2003) *M. incanus* (Freitas 1998*;* Aprigliano 2003) *M. myosuros* (Aprigliano 2003) *P. quica* (Freitas 1998; Moura *et al.* 2005)
% Canopy cover	*D. aurita* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)	*P. quica* (Moura *et al.* 2005)	*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998; Aprigliano 2003) *M. incanus* (Freitas 1998*;* Aprigliano 2003) *M. myosuros* (Freitas 1998*;* Aprigliano 2003; Moura *et al.* 2005) *P. quica* (Freitas 1998)
% Obstruction at 0–0.5m high	*M. myosuros* (Aprigliano 2003)	*A. cursor* (Freitas 1998) *D. aurita* (Aprigliano 2003; Moura *et al.* 2005)	*D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998; Aprigliano 2003; Ferreira 2009)

		M. myosuros (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)	*M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998; Moura *et al.* 2005)
% Obstruction at 0.5–1.0m high	*P. quica* (Moura *et al.* 2005)	*D. aurita* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)	*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998; Aprigliano 2003) *M. incanus* (Freitas 1998; Aprigliano 2003) *M. myosuros* (Freitas 1998*;* Aprigliano 2003; Moura *et al.* 2005) *P. quica* (Freitas 1998)
% Obstruction at 1.0–1.5m high	*A. cursor* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)	*D. aurita* (Freitas 1998) *P. quica* (Moura *et al.* 2005)	*D. aurita* (Aprigliano 2003; Moura *et al.* 2005) *M. incanus* (Freitas 1998; Aprigliano 2003) *M. myosuros* (Aprigliano 2003; Moura *et al.* 2005)
Number of fallen trunks or logs	*D. aurita* (Aprigliano 2003)	*M. myosuros* (Freitas 1998)	*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998; Aprigliano 2003; Ferreira 2009) *P. quica* (Freitas 1998)
Canopy height (m)			*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)
Terrain slope	*A. cursor* (Freitas 1998)		*D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)
Bamboo number			*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)

Astrocarium aculeatissimum number			*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)
Distance to nearest tree with DBH > 2.0m			*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998) *M. incanus* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)
Diameter of nearest tree with DBH > 2.0m		*M. incanus* (Freitas 1998)	*A. cursor* (Freitas 1998) *D. aurita* (Freitas 1998) *M. myosuros* (Freitas 1998) *P. quica* (Freitas 1998)
Microclimate			
Average temperature (°C)			*D. aurita* (Aprigliano 2003 *M. incanus* (Aprigliano 2003) *M. myosuros* (Aprigliano 2003)
Maximum temperature (°C)			*D. aurita* (Aprigliano 2003) *M. incanus* (Aprigliano 2003) *M. myosuros* (Aprigliano 2003)
Minimum temperature (°C)			*D. aurita* (Aprigliano 2003) *M. incanus* (Aprigliano 2003) *M. myosuros* (Aprigliano 2003)
% Average relative humidity			*D. aurita* (Aprigliano 2003) *M. incanus* (Aprigliano 2003) *M. myosuros* (Aprigliano 2003)
Average light (lumens)		*D. aurita* (Aprigliano 2003)	*M. incanus* (Aprigliano 2003) *M. myosuros* (Aprigliano 2003)
Microhabitat (aboveground)			
Support diameter	*M. incanus* (Loretto & Vieira 2008) *P. quica* (Delciellos *et al.* 2020)		

Support inclination	*M. incanus* (Loretto & Vieira 2008) *P. quica* (Delciellos *et al.* 2020)		
Canopy Density		*C. philander* (Cobra 2010)	
Understory Density		*C. philander* (Cobra 2010)	
Clearing			*C. philander* (Cobra 2010)
Number of dead trees	*C. philander* (Cobra 2010)		
Number of epiphytes			*C. philander* (Cobra 2010)
Terrain slope		*C. philander* (Cobra 2010)	
Trees with fruits		*C. philander* (Cobra 2010)	
Canopy height			*C. philander* (Cobra 2010)
Density of individual trees in the plot			*C. philander* (Cobra 2010)
Lianas on the tree up to 1 m away		*C. philander* (Cobra 2010)	
Bromeliads on the tree		*C. philander* (Cobra 2010)	
Bromeliads 3 m from the tree			*C. philander* (Cobra 2010)
Palm trees up to 1 m			*C. philander* (Cobra 2010)
Rocks			*C. philander* (Cobra 2010)
Rocks leaning against the tree			*C. philander* (Cobra 2010)
Tree suber texture			*C. philander* (Cobra 2010)
Diameter at the height of the chest of the tree	*C. philander* (Cobra 2010)		
Height of the trunk of the tree			*C. philander* (Cobra 2010)
Height of the canopy of the tree	*C. philander* (Cobra 2010)		
Depth of the canopy of the tree			*C. philander* (Cobra 2010)
Complexity of the tree canopy			*C. philander* (Cobra 2010)
Leaf obstruction at 2.5 m high			*C. philander* (Cobra 2010)
Leaf obstruction at 5 m high			*C. philander* (Cobra 2010)
Mesohabitat			
% Plant cover on the ground,			*D. aurita* (Moura *et al.* 2005)

			M. myosuros (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)
% Litter cover		*P. quica* (Moura *et al.* 2005)	*D. aurita* (Moura *et al.* 2005) *M. myosuros* (Moura *et al.* 2005)
% Rock cover	*D. aurita* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)		*M. myosuros* (Moura *et al.* 2005)
% Canopy cover		*M. myosuros* (Moura *et al.* 2005)	*D. aurita* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)
% Obstruction at 0–0.5m high			*D. aurita* (Moura *et al.* 2005) *M. myosuros* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)
% Obstruction at 0.5–1.0m high			*D. aurita* (Moura *et al.* 2005) *M. myosuros* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)
% Obstruction at 1.0–1.5m high			*D. aurita* (Moura *et al.* 2005) *M. myosuros* (Moura *et al.* 2005) *P. quica* (Moura *et al.* 2005)

SUPPLEMENTARY MATERIAL 4

Table S3. Studies that evaluated use of space by didelphid marsupials at Garrafão, Serra dos Órgãos National Park, state of Rio de Janeiro, Brazil, during a 22-year long-term monitoring study of non-volant small mammals.

Species	Space use parameter	Drivers analyzed	Method	Reference
Caluromys philander	Home range Daily home range Daily home range overlap Daily displacement	None	Radiotelemetry	Papi (2011)
Didelphis aurita	Vertical strata use (10 variables)	None	Spool-and-line device	Cunha & Vieira (2002)
	Mean distance between successive captures Mean distance moved per night Maximum distance between captures Square root of daily home range Maximum distance between two points along the path	Population size Climatic seasons	Trapping grids Spool-and-line device	Mendel & Vieira (2003)
	Vertical strata use (4 variables)	Age Seasonality in fruit production	Spool-and-line device	Cunha & Vieira (2005)
	Daily home range Intensity of habitat use	Reproductive season Climatic season Sex Amount of mapped thread	Spool-and-line device	Loretto & Vieira (2005)
	Path tortuosity	Population size Reproductive season Climatic seasons Reproductive maturity of	Spool-and-line device	Almeida (2007), Almeida et al. (2015)

		individuals		
	Daily home range Intensity of habitat use	Body mass Amount of mapped thread Species identity	Spool-and-line device	Vieira & Cunha (2008)
Marmosops incanus	Vertical strata use (support diameters and inclinations)	None	Spool-and-line device	Cunha & Vieira (2002)
	Vertical strata use (support diameters and inclinations)	Sex Body mass	Spool-and-line device	Loretto & Vieira (2008)
	Daily home range	Body mass Sex Climatic seasons Reproductive season Amount of mapped thread	Spool-and-line device	Vieira *et al.* (2019)
Metachirus myosuros	Vertical strata use (support diameters and inclinations)	None	Spool-and-line device	Cunha & Vieira (2002)
	Mean distance between successive captures Mean distance moved per night Maximum distance between captures Square root of daily home range Maximum distance between two points along the path	Population size Climatic seasons	Trapping grids Spool-and-line device	Mendel & Vieira (2003)
	Daily home range Intensity of habitat use	Body mass Amount of mapped thread Species identity	Spool-and-line device	Vieira & Cunha (2008)
	Daily home range Intensity of habitat use	Population size Climatic seasons Reproductive season Sex	Spool-and-line device	Ferreira *et al.* (2017)

Philander quica	Vertical strata use (support diameters and inclinations)	None	Spool-and-line device	Cunha & Vieira (2002)
	Mean distance between successive captures Mean distance moved per night Maximum distance between captures Square root of daily home range Maximum distance between two points along the path	Population size Climatic seasons	Trapping grids Spool-and-line device	Mendel & Vieira (2003)
	Daily home range Intensity of habitat use	Body mass Amount of mapped thread Species identity	Spool-and-line device	Vieira & Cunha (2008)
	Daily home range Path tortuosity Aboveground use of the forest	Body mass Site (continuous forest x forest fragments) Sex Climatic seasons Amount of mapped thread	Spool-and-line device	Delciellos *et al.* (2017)
	Path tortuosity	Population size Body mass Site (continuous forest x forest fragments) Sex Climatic seasons	Spool-and-line device	Delciellos *et al.* (2019)
	Arboreal supports selection (diameters and inclinations)	Body mass Site (continuous forest x forest fragments) Sex	Spool-and-line device	Delciellos *et al.* (2020)

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