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LISTS OF SPECIES

Amphibia, Anura, Parque Estadual do Cunhambebe, Itaguaí municipality, Rio de Janeiro state

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ABSTRACT: We report a list of the amphibians from the Parque Estadual do Cunhambebe (22°54'07" S, 43°53'33" W) in Itaguaí municipality, an area of Atlantic Rainforest in Rio de Janeiro State, southeastern Brazil. The work was carried out from January to November 2010. We recorded 28 species of anuran amphibians distributed in eight families: Brachycephalidae (3), Bufonidae (2), Craugastoridae (1), Cycloramphidae (2), Hylidae (13), Hylodidae (2), Leiuperidae (1) and Leptodactylidae (4). Adding the species recorded in the Parque Estadual do Cunhambebe in Mangaratiba municipality, the richness of amphibians in the park currently is now 47 species.

INTRODUCTION

The Atlantic Forest is one of the richest biomes in the world; therefore, it is a hotspot for conservation (Myers *et al*. 2000). Currently, only 10% of its original extent remains preserved (Júnior 2005). The Rio de Janeiro State, southeastern Brazil, preserves the largest percentage of the Atlantic Forest (20.33%), but distributed in small fragmented areas (Bergallo *et al.* 2009). The biome harbors about 65% of all amphibian species of Brazil; among these, 80 are endemic (Haddad and Abe 1999). The Costa Verde region (southern coast of Rio de Janeiro state) shows high amphibian endemism, with over 15 endemic species (Van Sluys *et al.* 2009). Due to the dispersal limitations, inventories in Serra do Mar carried out in areas with geographical barriers that favor speciation events, have increasingly found new, rare or endemic species (Haddad and Abe 1999).

Habitat diversity is important for maintaining amphibian and reptile populations (Ricklefs and Lovette 1999; Ricklefs and Bermingham 2007). Therefore, amphibian richness is an important indicator of environmental quality. Herein we present the results produced by the survey of amphibians from Parque Estadual do Cunhambebe, Itaguaí municipality, Rio de Janeiro State, southeastern Brazil, a Atlantic Forest remnant with any thorough fauna and flora inventories.

MATERIALS AND METHODS

Study area

The species inventory was carried out in Parque Estadual do Cunhambebe (Figure 1), on the border of the municipalities of Itaguaí and Mangaratiba (22°54'07" S, 43°53'33" W). The vegetation is composed of rainforest, sometimes intercropped with banana plantations. Well as all physiognomies from the Atlantic Forest biome , this has the highest flora diversity, where trees that can reach 20-30 meter of height, temperature is generally high and rainfall is regularly distributed throughout the year (Júnior, 2005).

Data Collection

Samplings were carried out from January to November 2010 during day and night, aiming to cover different activity periods. The sampling effort in the field was approximately 128 h. Animals were collected in roosting and breeding sites by active and visual search. Individuals were collected, labeled, killed in alcohol 20%, fixed in formalin 10%, and stored in alcohol 70%. Voucher specimens were housed in the Laboratório de Ecologia de Lagartos (LEL) and Coleção Herpetológica da Universidade Federal Rural do Rio de Janeiro (RU). The Capture and kill of animals were allowed by SISBIO, permit number 20895-1 and 20895-2.

RESULTS AND DISCUSSION

We recorded 28 amphibian species from eight families (Table 1; Figures 2 and 3), which represent approximately

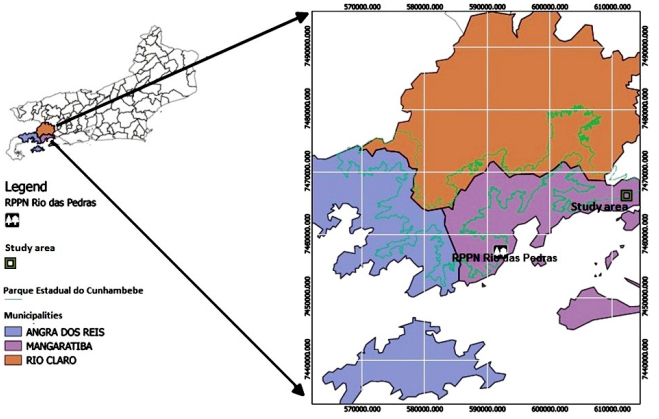

FIGURE 1. Location of the study site and Reserva Rio das Pedras in Parque Estadual do Cunhambebe, municipalities of Itaguaí and Mangaratiba, Rio de Janeiro state, Brazil.

16% of all frog species in the state of Rio de Janeiro (Rocha *et al.* 2004). Hylidae was the best represented family (13 species). The species richness of the study area was lower than registered for Municipality of Mangaratiba, in Reserva Rio das Pedras (Carvalho-e-Silva *et al.* 2008), also located in the Parque Estadual do Cunhambebe, with 41 species from nine families. We added *Cycloramphus lithomimeticus* (Silva and Ouvernay, 2012), *Phasmahyla cruzi* (Carvalho-e-Silva, Silva and Carvalho-e-Silva, 2009), *Scinax trapicheiroi* (B. Lutz, 1954), *Scinax x-signatus* (Spix, 1824), *Ischnocnema octavioi* (Bokermann, 1965), and *Rhinella icterica* (Spix, 1824) to the amphibian list of the Parque Estadual do Cunhambebe, which now comprises a total of 47 species. The difference in richness found in the Reserva Rio das Pedras and in this study can be due to species sampled at high altitudes in Mangaratiba, in habitats that were not explored in Itaguaí municipality, as bamboo, bromeliads and canopy; in addition to greater sampling effort in the reserve (Carvalho-e-Silva *et al.* 2008). The recently-created Parque Estadual do Cunhambebe lacks fauna and flora formal inventories. However, important checklists were made in Reserva Rio das Pedras (Costa *et al.* 2005; Lopes *et al.* 2005; Vaz and Costa 2006; Mansano and Lima 2007; Mermudes 2009; Bovini 2010; Luz *et al.* 2011), beyond ecological studies (Filho *et al.* 2007; Esberárd 2009). Therefore, the present inventory could contribute for the knowledge of local frogs, and could be relevant for conservation strategies for frogs in this Atlantic Forest remnant, and contributes to advance the knowledge of amphibian species in the Rio Janeiro state.

Table 1. Anuran species recorded in Itaguaí municipality, state of Rio de Janeiro, southeastern Brazil. Legend: AF) Forest; BN) Banana Plantation; SW) Swamp; WF) Waterfall; AN) Anthropic; LK) Lake; *Visual Record.

FAMILY	SPECIES	HABITAT						
		AF	BN	SW	WF	AN	LK	VR
BRACHYCEPHALIDAE	*Ischnocnema guentheri* (Steindachner, 1867)	X						
	Ischnocnema parva (Girard, 1853)	X						
	Ischnocnema octavioi (Bokermann, 1965)	X						
BUFONIDAE	*Rhinella ornata* (Spix, 1824)	X	X		X	X		
	Rhinella icterica (Spix, 1824)					X		
CRAUGASTORIDAE	*Haddadus binotatus* (Spix, 1824)	X	X					
CYCLORAMPHIDAE	*Thoropa miliaris* (Spix, 1824)	X			X			
	Cycloramphus lithomimeticus (Silva and Ouvernay, 2012)				X			
HYLIDAE	*Aplastodiscus eugenioi* (Carvalho-e-Silva and Carvalho-e-Silva, 2005)	X	X	X				
	Bokermannohyla circumdata (Cope, 1871)*							
	Dendropsophus elegans (Wied-Neuwied, 1824)						X	
	Dendropsophus seniculus (Cope, 1868)	X						
	Dendropsophus minutus (Melin, 1941)						X	
	Hypsiboas faber (Wied-Neuwied, 1821)				X		X	
	Hypsiboas semilineatus (Spix, 1824)					X		
	Scinax alter (B. Lutz, 1973)						X	
	Scinax humilis (B. Lutz, 1954)			X				
	Scinax trapicheiroi (B. Lutz, 1954)	X			X			
	Scinax x-signatus (Spix, 1824)	X						
	Phasmahyla cruzi (Carvalho-e-Silva, Silva and Carvalho-e-Silva, 2009)				X			
	Trachycephalus mesophaeus (Hensel, 1867)	X						
HYLODIDAE	*Hylodes asper* (Müller, 1924)				X			
	Hylodes phyllodes Heyer and Cocroft, 1986				X			
LEIUPERIDAE	*Physalaemus signifer* (Girard, 1853)	X	X			X		
LEPTODACTYLIDAE	*Leptodactylus marmoratus* (Steindaehner, 1867)	X	X					
	Leptodactylus latrans (Steffen, 1815)						X	
	Leptodactylus spixi (Heyer, 1983)					X		
	Leptodactylus fuscus (Schneider, 1799)*							

Figure 2. Some amphibian species from Parque Estadual do Cunhambebe, municipality Itaguaí, Rio de Janeiro, Brazil. A) *Ischnocnema guentheri*; B) *Ischnocnema parva*; C) *Rhinella ornata*; D) *Rhinella icterica*; E) *Haddadus binotatus*; F) *Thoropa miliaris*; G) *Cycloramphus lithomimeticus*; H) *Aplastodiscus eugenioi*; I) *Bokermannohyla circumdata*; J) *Dendropsophus elegans*; K) *Hypsiboas faber*; L) *Hypsiboas semilineatus*.

Figure 3. Some amphibian species from Parque Estadual do Cunhambebe, municipality Itaguaí, Rio de Janeiro, Brazil. A) *Scinax alter*; B) *Scinax humilis*; C) *Scinax trapicheiroi*; D) *Scinax x-signatus*; E) *Phasmahyla cruzi*; F) *Hylodes asper*; G) *Hylodes phyllodes*; H) *Physalaemus signifer*; I) *Leptodactylus marmoratus*; J) *Leptodactylus spixi*.

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Appendix 1. Amphibians collected in the study area, Itaguaí, RJ

Brachycephalidae: *Ischnocnema guentheri* (LEL 107, 289, 310); *I. parva* (LEL 124); *I. octavioi* (LEL 109); **Bufonidae:** *Rhinella ornata* (RU 5956, 5963, 5964, 5965, 5967, 5968, 6015-17, LEL 75, 76, 83, 88, 101, 102, 151, 153, 194, 234, 292, 296, 300, 303, 309, 311, 316, 317, 320, 443, 444, 446, 458, 460, 466); *R. icterica* (LEL 99, 100, 319); **Craugastoridae**: *Haddadus binotatus* (RU 6019, 6020, 6022, LEL 80, 81, 85, 86, 103, 108,155, 219, 228, 230, 235, 242, 304, 305, 312, 327, 448, 464); **Cycloramphidae:** *Thoropa miliaris* (LEL 144, -49, 217, 224, 239, 240, 299, 301, 314, 325, 326, 329, 330); *Cycloramphus lithomimeticus* (LEL 547, 549, 550); **Hylidae**: *Aplastodiscus eugenioi* (LEL 297, 308, 318, 447); *Dendropsophus elegans* (LEL 453, 459, 541-44); *D. seniculus* (LEL 89), *D. minutus* (LEL 546), *Hypsiboas faber* (LEL 293, 442, 461, 463, 465), *H. semilineatus* (LEL 315, 632) ; *Scinax alter* (294, 452, 454-57, 462), *S. humilis* (LEL 449); *S. trapicheiroi* (LEL 150, 298, 450, 451, 553, 558); *S. X-signatus* (LEL 295); *Trachycephalus mesophaeus* (LEL 556); **Hylodidae:** *Hylodes asper* (LEL 233, 633), *H. phyllodes* (LEL 566, 567, 634, 635, 637); **Leiuperidae:** *Physalaemus signifer* (LEL 104-106, 237, 323, 324, 332); **Leptodactylidae:** *Leptodactylus marmoratus* (RU 5960, LEL 77, 79, 87, 96, 125-127, 134, 154, 165, 166, 236, 307, 322, 445); *L. latrans* (LEL 331, 328); *L. spixi* (LEL 441).