

Distribution Updates

New records for bush dog in Mato Grosso do Sul, Brazil

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Abstract

The bush dog *Speothos venaticus* is a rare and threatened species found in Central and South America. Within Brazil, the species has been recorded in four different biomes. We present five new bush dog records from different locations in the Brazilian State of Mato Grosso do Sul, including the first photographic records for this state, thereby increasing the species' known distribution in Mato Grosso do Sul.

Distribution Update

The bush dog *Speothos venaticus* (Lund 1842), is a neotropical canid that usually lives in groups ranging from three to ten individuals, and is considered the most social of all small canids (Emmons and Feer, 1997). The species is considered Near Threatened (NT) by IUCN (DeMatteo et al. 2011), and also belongs on the Brazilian list of endangered species (Brasil Ministério do Meio Ambiente 2008). The bush dog has been recorded in southern Panama, Colombia, eastern Peru, Venezuela, Suriname, eastern Bolivia, Paraguay, and northeastern Argentina, yet they appear to be rare (Zuercher et al. 2004, Cheida et al. 2006). In Brazil, bush dogs are found in the Amazon Forest, Atlantic Forest, Cerrado, and Pantanal biomes (Cheida et al. 2006).

The State of Mato Grosso do Sul (MS) is located in central-west Brazil and is the sixth largest of the 26 Brazilian states, with an area of approximately 357,000km². MS contains three of the four biomes where bush dogs have been recorded within Brazil. MS originally had 60% coverage of the Cerrado biome, 25% coverage of the Pantanal biome

and 15% coverage of the Atlantic Forest biome (Mato Grosso do Sul 2009). However, today only 14% of Cerrado remains (Brasil 2009) and less than 1% of Atlantic Forest (Fundação SOS Mata Atlântica and INPE 2010). The Pantanal biome is now the main natural coverage of the State, with almost 90% of its original area still intact (Padovani et al. 2004).

Although bush dogs have been recorded in both the Atlantic Forest and Cerrado biomes (DeMatteo 2008, DeMatteo and Loisel 2008), the majority of records for MS are from the Pantanal biome (Cáceres et al. 2008) (Table 1). However, records are rare and restricted to opportunistic sightings, road-killed animals and circumstantial evidence (Fischer 1997, Rodrigues et al. 2002) and photographic records of the species within MS are not known to exist. However, here we present five new records of bush dogs in MS within the three different biomes, and also photographic confirmation of the occurrence of the species in an area where they have not been seen for more than 20 years (Alho et al. 1988, Bianchi 2009) (Figure 1).

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Locality	Biome	Type of Record	Coordinates	Source
1. SESC Pantanal ¹	Pantanal	Capture/radio tracking	16° 17' S 56° 57' W *	Lima et al. (2009)
2. West Paiaçuás	Pantanal	Unknown	17° 55' S 57° 02' W **	Rodrigues et al. (2002)
3. Fazenda Nhumirim	Pantanal	Sighting	18° 59' S 56° 39' W	Alho et al. (1988); DeMatteo (2008); DeMatteo & Loiseau (2008)
4. Fazenda Rio Negro	Pantanal	Tracks	19° 34' S 56° 15' W *	Rodrigues et al. (2002)
5. Highway BR 262 (nr Fazenda Bodoquena)	Pantanal	Roadkill	19° 41' S 57° 00' W **	Rodrigues et al. (2002)
6. Highway BR 262 (nr Miranda River)	Pantanal	Roadkill	20° 11' S 56° 30' W **	Fischer (1997)
7. Alto Taquari	Cerrado	Sighting/Capture	17° 56' S 53° 59' W	DeMatteo (2008); DeMatteo & Loiseau (2008)
8. Tributary to Ivinhema River	Atlantic Forest	Unknown	22° 00' S 55° 30' W	DeMatteo (2008); DeMatteo & Loiseau (2008)
9. Paiaçuás	Pantanal	Unknown	17° 50' S 55° 50' W **	DeMatteo (2008); DeMatteo & Loiseau (2008)
10. Rio Aquidauana	Cerrado	Tracks/Sighting	20° 28' S 55° 48' W **	DeMatteo (2008); DeMatteo & Loiseau (2008)
11. Alto Aquidauana	Cerrado	Unknown	20° 00' S 54° 50' W **	DeMatteo (2008); DeMatteo & Loiseau (2008)
12. Fazenda Barranco Alto	Pantanal	Camera-trap picture	19° 30' S 56° 08' W	Möcklinghoff et al. unpubl. data ²
13. Refúgio Ecológico Caiman	Pantanal	Sighting	19° 56' S 56° 15' W	This update
14. Fazenda San Francisco	Pantanal	Sighting/Picture	20° 06' S 56° 37' W	This update
15. PEPRN	Pantanal	Camera-trap picture	19° 26' S 56° 38' W	This update
16. PARNA Bodoquena	Cerrado	Sighting	21° 15' S 56° 42' W	This update
17. Fazenda Nhumirim	Pantanal	Camera-trap picture	18° 58' S 56° 38' W	This update
18. Rio Brilhante	Atlantic Forest	Tracks	21° 43' S 54° 30' W	This update

¹ This area is located at Mato Grosso State (MT) and is placed for discussion purposes.

* Coordinates of the headquarters of areas.

** Estimated coordinates for mapping purposes.

² <http://pantanal-lodge.blogspot.com/>, Last download on 24th September 2010.

Table 1: Recorded sightings of bush dogs in Mato Grosso do Sul

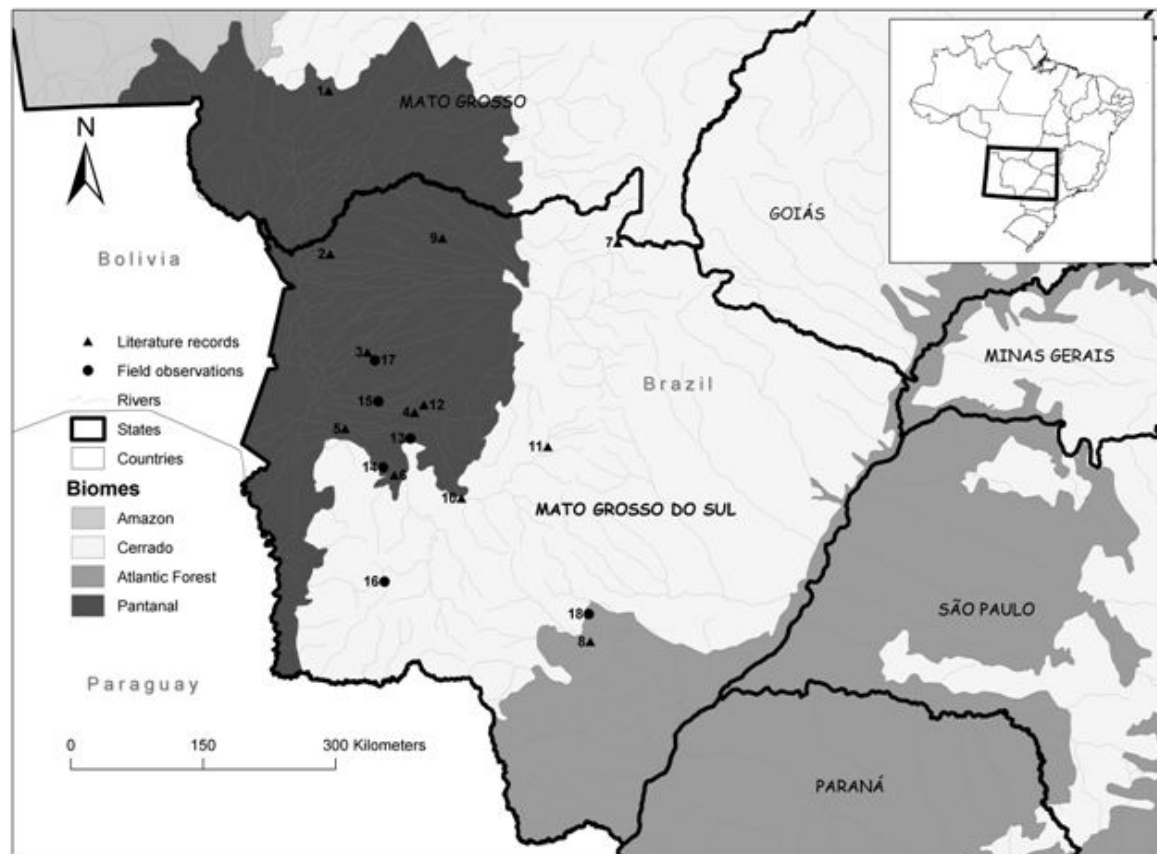


Figure 1: The State of Mato Grosso do Sul

The first record of the species was obtained in October 2002 at Caiman Ecological Refuge (REC), a 530km² area located within the Pantanal sub-region of Miranda (sensu Silva and Abdon 1998). A group of at least six bush dogs were seen crossing a corridor for cattle during

daylight from an open truck used wildlife viewing (Victor do Nascimento pers. comm.).

The second sighting occurred in September 2005 in Fazenda San Francisco (FSF), a 150km² area also located within the Pantanal sub-

region of Miranda. In this instance a group of four bush dogs was photographed during a morning photographic safari (Figure 2a). In both REC and FSF, tourism activities for wildlife observation have been performed for more than 15 years and the species had never before been sighted.

The third record was made during a Rapid Ecological Assessment of the State Park of Pantanal do Rio Negro (PEPRN), which has an area of 784km² that extends through the Pantanal sub-regions of Miranda, Abobral and Nhecolândia (sensu Silva and Abdon 1998). Two pictures of a group of four bush dogs were taken during a seven day period in May 2006 taken with camera traps (Figure 2b).

The fourth record was obtained from Atlantic Forest and Cerrado ecotone, close to Rio Brilhante city (RB). The species was recorded through tracks found in a lowland area between two fragments of alluvial seasonal forest in August 2007.

The fifth record of the species in MS took place during a species survey of the National Park of Serra da Bodoquena (PNSB). This park has an approximate area of 765km² that is divided into two parts which lie 3km apart. Although the park is inside the Cerrado biome (Mato Grosso do Sul 2009), the predominant vegetation type is sub-mountain seasonal deciduous forest, which is a typical vegetation type of the Atlantic Forest biome. A group of four bush dogs was observed on a morning in December 2005, close to a road that crosses an area of secondary forest.



Figure 2 a-c: Photographic records of bush dogs in Mato Grosso do Sul

Using camera traps, we also recorded a group of six bush dogs in June 2007 on Fazenda Nhumirim (FN), within the Pantanal sub-region of Nhecolândia (Figure 2c). The species was previously recorded from this site (Alho et al. 1988), but it had not been seen there for more than 20 years (Bianchi 2009).

Although bush dogs are common in some areas of the SESC Pantanal Private Reserve (Lima et al. 2009, Figure 1) within the Pantanal sub-region of Poconé (sensu Silva and Abdon 1998), that does not seem to be true for other areas of the Pantanal. During the two years of intense camera trapping of the mammal fauna at FN, bush dogs were photographed only once and considered the rarest carnivore species of that area (Bianchi 2009). Photographic safaris held at FSF and REC, frequently held by experienced guides for the past 15 years, have not detected the species. Also at FSF, intensive field research was conducted between 2002 and 2004 and again in 2006, yet the species was never recorded. According to Beisiegel (2009) naturally low population densities, possibly associated with large home-ranges, could explain the low success in recording bush dog presence.

The records presented herein confirm the presence of bush dogs in specific areas and expand the distribution of documented records in different biomes of MS state. Since the majority of records within MS are from the Pantanal, they strengthen the role of the Pantanal biome as a wildlife refuge which is important for the conservation of endangered species (Harris et al. 2005), and show that this biome possesses suitable environmental conditions for bush dogs as predicted in ecological niche models (DeMatteo and Loiselle 2008).

The occurrence of bush dogs in a zone densely populated with humans in RB, where both Atlantic Forest and Cerrado biomes are highly fragmented, indicates a certain resilience of the species to live in degraded habitats and emphasises the need for reconnection of natural habitat patches to establish biological corridors. Biological corridors are essential for the long-term conservation of bush dogs, since isolated Conservation Units cannot sustain a viable bush dog population over extended time frames (Oliveira 2009). Considering that the Brazilian Pantanal still maintains extensive areas of natural habitat, it is necessary to establish biological corridors connecting this biome with the surrounding Cerrado and adjacent forests such as the PNSB, to enhance the availability and connectivity of natural areas where viable bush dog populations can persist in MS State.

Finally, the photographic records presented here are the first documented records of the species in MS and increase the available information about bush dog ecology, habitat use and activity patterns. We hope that these records might stimulate new research in MS and contribute to the knowledge of the bush dog's status in this state and in Brazil. As concluded by Oliveira (2009), it is fundamental to the development of a national conservation strategy for bush dogs in Brazil that additional research on the species' ecological and conservation needs is conducted. Since there is insufficient bush dog distributional data available to establish such a plan for the species (Oliveira 2009), it is important that any new records of this rare wild canid are reported.

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Biographical sketches

Rodrigo Teribele is a biologist whose main focus of research is in medium and large mammals. He previously worked as a guide and environmental consultant in the Brazilian Pantanal and Cerrado biomes for ten years, and is currently based at Instituto SOS Pantanal.

Henrique Villas Boas Concione is a biologist who has lived and worked in the Pantanal for the past eleven years. His main focus of research is wild felids, but he has an interest in all carnivore species. Since 2005 he has been participating in research and conservation projects dealing with conflicts between cattle and large cats in the Brazilian Pantanal.

Mauricio Neves Godoi is an ecologist studying for a PhD in Ecology and Conservation at Universidade Federal do Mato Grosso do Sul – UFMS, focusing on the community ecology of birds and non-flying mammals on Cerrado and Pantanal biomes. He previously worked as an environmental consultant, again focusing on mammals and birds.

Rita de Cássia Bianchi is a biologist who has been involved in carnivore ecology since 2000. She studied resource partitioning among mid-sized carnivores for her PhD in the Pantanal of Mato Grosso do Sul state, and is currently a professor at the Federal Institute of Education, Science and Technology of São Paulo. She is involved with mammal projects in the northern region of São Paulo.

José Carlos Chaves Dos Santos is a biologist and environmental consultant with FIBRAcon Consultoria and Instituto Forpus, involved in animal surveys for environmental studies.

Rodiney de Arruda Mauro is a biologist teaching at the Universidade Federal do Mato Grosso do Sul (UFMS) since 2001. Previously he worked at EMBRAPA (Brazilian Agricultural Research Corporation), and his research focused on the ecology of mammals and other vertebrates.

Nilson Lino Xavier Filho is a biologist and manager of a private reserve, collaborating in research projects on the ecology of felids and canids in Serra do Amolar, Pantanal, Mato Grosso do Sul. He was previously involved in the preservation of wildlife in the Pantanal, particularly in the ecology of carnivores.

Alyson Vieira de Melo is an ecologist with extensive experience in conservation in the Pantanal and Amazon, having coordinated several ecotourism projects. As a researcher, he worked in bird conservation at the National Institute of Amazonian Research (INPA) and the Project TEAM (Tropical Ecology, Assessment and Monitoring Initiative), sponsored by Conservation International (CI). Previously, he worked as a consultant in tasks related to project implementation and training on ecotourism, environmental impact assessments and rapid assessment processes for governmental agencies and NGOs.