UNIVERSIDADE FEDERAL DE UBERLÂNDIA

INSTITUTO DE BIOLOGIA

CURSO DE CIÊNCIAS BIOLÓGICAS

LETÍCIA BENAVALLI

OCCURRENCE AND DISTRIBUTION DATASET OF MEDIUM AND LARGE-SIZED TERRESTRIAL MAMMAL COMMUNITIES IN A NEOTROPICAL SAVANNA

UBERLÂNDIA

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Monografia apresentada ao Instituto de Biologia da Universidade Federal de Uberlândia como requisito parcial à obtenção de título de Licenciatura em Ciências Biológicas.

Orientadora: Profª. Natália Mundim Tôrres

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Monografia aprovada como requisito parcial à obtenção do título de Licenciada, Curso de Ciências Biológicas, Instituto de Biologia, Universidade Federal de Uberlândia, pela seguinte banca examinadora:

_____
Natália Mundim Tôrres
Orientadora – Instituto de Biologia – UFU

_____
Natália Oliveira Leiner

_____
Vanessa Stefani Sul Moreira

Uberlândia, 30 de novembro de 2018.

Dedico a todos os colegas que contribuíram e me impulsionaram para a realização dessa pesquisa.

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Tenho enorme prazer em agradecer à minha família por todo suporte e acreditar, junto comigo, que seria possível a realização do meu sonho. Meu pai, homem mais importante da minha vida, sempre esteve ao meu lado, indicando os possíveis caminhos que eu poderia percorrer. Minha mãe, responsável pela minha paixão em querer sempre saber mais, com suas críticas construtivas, demonstrou que podemos alcançar o que queremos desde que buscamos fazer por onde. Meus irmãos, os quais tenho grande orgulho, foram minha inspiração para não ficar acomodada. Lari, esse trabalho só saiu por sua razão. Obrigada, vocês são meu alicerce e me fizeram ser quem sou.

Agradeço a todos os meus colegas que estiveram ao meu lado, mesmo que de forma passageira, ao longo da minha formação acadêmica. Rodrigo Rossi, Roberta Garibaldi, Renata Bianchi e Letícia Silveira, não tenho palavras para descrever a minha gratidão por todos os momentos que vivemos juntos. Aos meus colegas de fora da graduação, os quais dispensam até nomeação, vocês são incríveis. Tenho plenitude em dizer, que por mais que a vida nos afaste, tenho eterno amor por vocês terem feito parte da minha vida, proporcionando-me experiências únicas e me demonstraram que família pode ser diferente daquela com a qual estamos desde crianças.

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RESUMO

Há uma necessidade crescente de informações basais ecológicas para compreender a distribuição das espécies nos ambientes. Pesquisas baseadas em dados de armadilhas fotográficas proporcionaram um grande avanço no monitoramento de mamíferos terrestres e podem ser usadas para múltiplos fins de conservação. Aqui apresentamos uma compilação de registros de mamíferos terrestres de médio e grande porte, oriundos de levantamentos de armadilhas fotográficas realizados ao longo do Bioma Cerrado, resultando em 122 estudos que amostraram 259 áreas de ocorrência de 52 espécies. O banco de dados compreende um esforço amostral total de 96.789 dias, capturando registros de 8 ordens, 17 famílias e 37 gêneros. Todas as espécies ocorrem em pelo menos duas áreas de estudo dentre todas as unidades amostradas. Os registros de espécies mais frequentes foram de *Puma concolor, Cerdocyon thous, Leopardus pardalis* e *Chrysocyon brachyurus*. Este conjunto de dados representa um grande esforço para entender a dinâmica e a composição da comunidade de mamíferos de médio e grande porte no Cerrado, ajudando a identificar padrões macroecológicos deste grupo.

Palavras-chave: Cerrado, *camera traps*, comunidades de mamíferos, macroecologia, mamíferos neotropicais, *hotspot*

Apresentação

Este trabalho de conclusão de curso foi escrito em inglês e estruturado diferente de um artigo convencional ou dentro do padrão de monografia, pois trata-se de um *data paper* submetido à revista *Ecology,* seguindo, portanto, as instruções de submissão para essa categoria de trabalho. Esse tipo de produção científica reúne, em um documento, metadados oriundos de um (ou vários) banco de dados. Sendo assim, *data papers* é uma metanálise que contém um resumo de apresentação, uma matriz de dados e um texto de metadados.

OCCURRENCE AND DISTRIBUTION DATASET OF MEDIUM AND LARGE-SIZED TERRESTRIAL MAMMAL COMMUNITIES IN A NEOTROPICAL SAVANNA

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INTRODUCTION

Camera traps have been essential for wildlife monitoring throughout space and time because of their vast potential on monitoring mammals' communities (Chapman 1927, Kucera and Barrett 2011), since most of these animals are very difficult to observe and capture (Ahumada et al. 2013, Pimm et al. 2015) and occur in low densities, requiring a huge effort on the field to answer questions related to ecological information. Also, this tool is considered noninvasive for animals in their natural environment (Santos-Filho and Silva 2002, Silveira et al. 2003). In recent years, the decreased equipment's costs and improvement of the technology allowed an increase of the amount of surveys that applies this method (Tobler et al. 2008a).

Ecological data such as distribution and activity pattern, habitat use, reproduction patterns, diet type or population abundance are crucial to establish conservation priorities and elaborate efficient strategies to protect the biodiversity (Norris 2012), as these pieces of information allow to comprehend the threat state of

the species and serve as a base to public policy that should be implemented in each case (Chavan and Penev 2011). In addition, the access to this biological information is essential to identify, for example, important hotspots for fauna and flora conservation (Myers et al. 2000), besides to support the creation of reserves that can also contribute to preserve ecosystems (Dunn et al. 2014).

The diversity of terrestrial mammal communities, particularly in tropical forests, play a significant role on the ecosystems functioning (Robinson and Redford 1986). Especially, carnivores have a central role in the trophic chain in vertebrate communities (Sergio et al. 2008), therefore, data about their ecological patterns are essential to understand how carnivores use their habitats and resources (Magioli et al. 2014). The Brazilian Cerrado is responsible for the biggest carnivores' diversity in neotropicals savannas around the world (Paglia et al. 2012) and the understanding of the abundance and distribution patterns of these species help determine the causes and effects of habitat loss and extinction in this biome (Bonvicino et al. 2012). In addition to this, mammals' population sizes have been declining mainly due to the high hunting pressure, habitat fragmentation and habitat loss (Schipper et al., 2008, Hoffman et al., 2011, Ripple et al. 2016).

However, despite being one of the world's biodiversity hotspots, systematized information on the Cerrado biodiversity is difficult to access and remains dispersed on thesis, unpublished data sets, technical reports and other types of studies (Mendonça et al., 2018). Besides, the replacement of nature spaces by grazing and crops areas throughout the years caused the loss of about half of its original forest to agriculture (Klink and Machado 2005), making even more important to comprehend the community's dynamic in this process.

In this study, we present a dataset about occurrence of medium and large sized mammals in Cerrado, the largest neotropical savanna, to answer questions that can help us to (1) summarize data that can be used for future conservation efforts, (2) identify possible gaps of knowledge about communities ecological patterns and (3) disclosure of current data about mammals occurrence in a biodiversity conservation hotspot.

METADATA

CLASS I. Data set descriptors

A. Data set identity

Title: OCCURRENCE AND DISTRIBUTION DATASET OF MEDIUM AND LARGE-SIZED TERRESTRIAL MAMMAL COMMUNITIES IN A NEOTROPICAL SAVANNA

B. Data set identification code

Suggested Data Set Identity Codes:

(1) CERRADO-references.csv

(2) CERRADO- sites.csv

(3) CERRADO- species.csv

(4) CERRADO-capture.csv

C. Data set description

1. Originators:

Letícia Benavalli, Jasmine Resende de Assis, Giselle Bastos Alves, Natália Mundim Tôrres, Instituto de Biologia, Laboratório de Ecologia de Mamíferos, Universidade Federal de Uberlândia, Uberlândia, Brazil.

Lorena Costa Moreira Santos, Yasmin Machado de Araújo, Faculdade de Medicina Veterinária, Universidade Federal de Uberlândia, Uberlândia, Brazil.

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Leandro Silveira, Anah Tereza de Almeida Jácomo, Instituto Onça-Pintada, Mineiros, Goiás, Brazil.

2. Abstract

There is a growing need for a baseline ecological information to comprehend the distribution of species around the environment. Surveys based on camera traps data have provided a great advance on the monitoring of terrestrial mammals and can be used for multiple conservation purposes. Here is presented a compilation of medium to large-sized terrestrial mammals records from camera trap surveys in a neotropical savanna, resulting in 122 studies that sampled 259 occurrence areas of 52 species, covering all of Cerrado's phytophysiognomies. The complete dataset comprises a total sampling effort of 96.789 days, capturing 8 orders, 17 families and 37 genera. All species occur in at least two singletons of the full sampled areas. The most frequent species records were from *Puma concolor, Cerdocyon thous, Leopardus pardalis* and *Chrysocyon brachyurus*. This dataset represents a massive effort to understand the dynamic and composition of the medium-to-large mammals' community in Cerrado, helping identifying macroecological patterns.

D. Key words: Cerrado, camera traps, mammal communities, macroecology, neotropical mammals, hotspot biodiversity

E. Description:

The dataset is restricted to the Cerrado delimitation biome and combines 122 surveys that made use of camera traps resulting in 265 study areas (Figure 1). Even though most of the data are found in thesis, dissertations or unpublished research, all references used are from peer-reviewed articles. All studies here compiled resulted on a total sampling effort of 96.789 days. Despite the variety of field techniques used to record terrestrial mammal communities (Tobler et al. 2008a), camera trap is an efficient method to study the ecology and occurrence of animals, especially the ones with cryptic habits, because it does not select a specific group, photographing most species that cross in front of it (Meek and Pittet 2012).

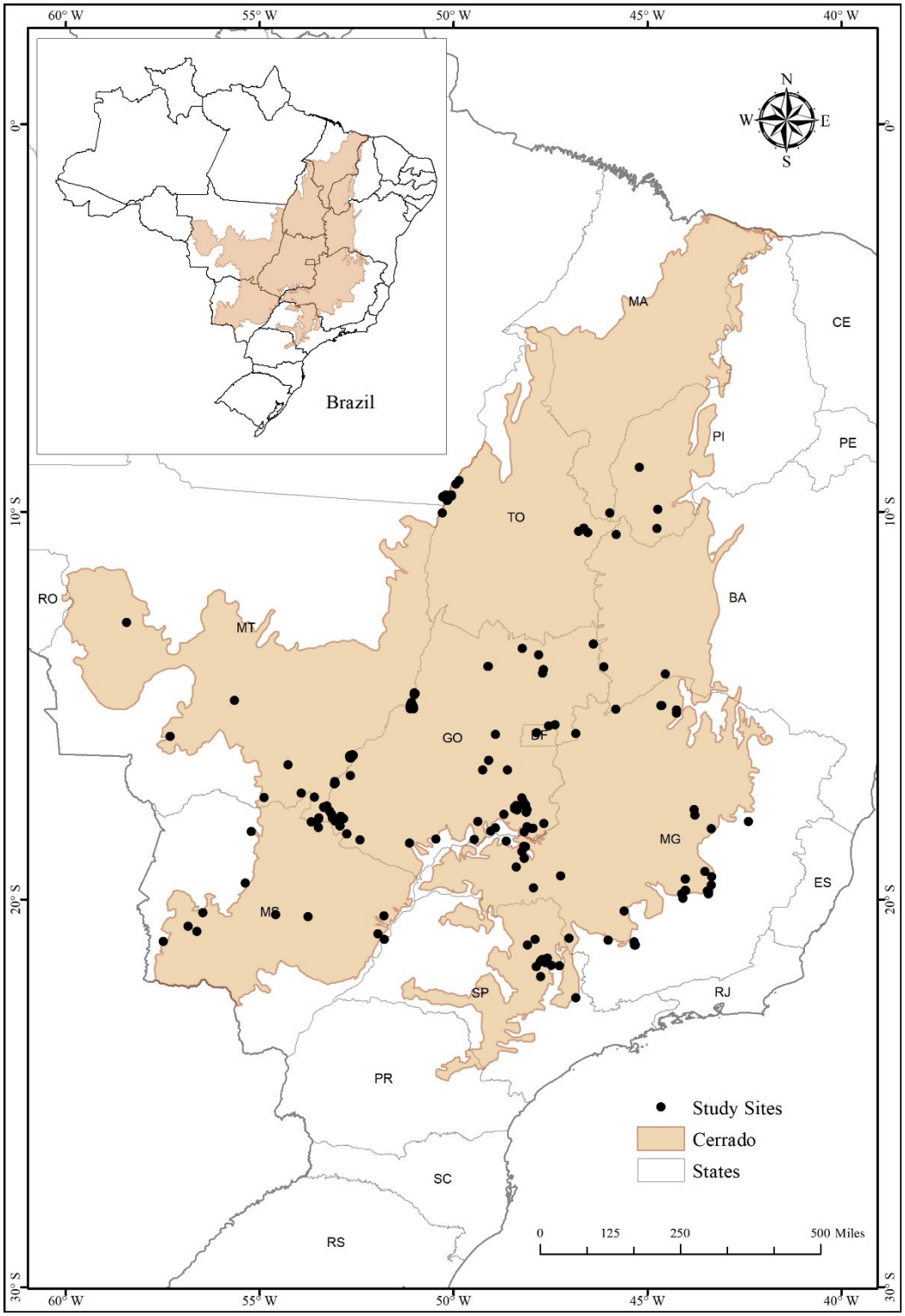

Figure 1. Distribution of the studies about medium and large-sized mammals of Cerrado. Light brown represent Cerrado biome and black dots represents the study sites compiled.

For the general data analysis, this study includes only 8 orders, 17 families, 37 genera and 52 species of medium to large terrestrial mammals (Figure 2), excluding opportunistic records such as from small mammals. From all the studies records, the most frequent species were *Puma concolor, Cerdocyon thous, Leopardus pardalis* and *Chrysocyon brachyurus*. The less frequent was *Kerodon acrobata*, followed by *Tolypeutes matacus, Potos flavus* and *Dasyprocta nigriclunis* (Figure 3).

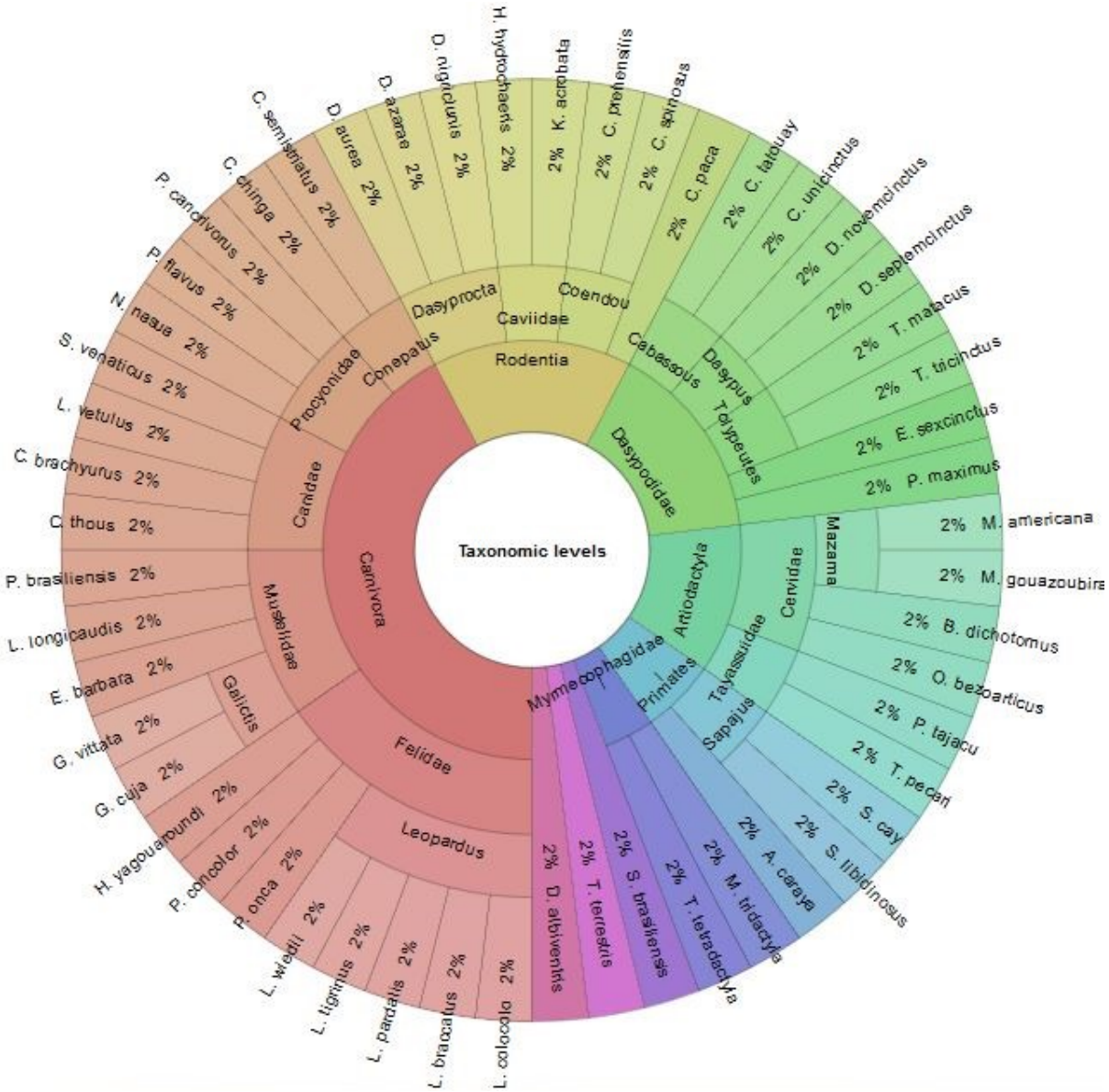

Figure 2. Taxonomic levels of the species cited in this dataset. Eleven species were not listed because of the low occurrence frequency.

In ecological terms, it's possible to affirm that the most frequent species are more abundant along the entire extension of Cerrado's areas, since 43,8% of the studies registered *Puma concolor* and 40% *Cerdocyon thous,* while 38,4% *Leopardus pardalis* and 36,75% registered *Chrysocyon brachyurus (*Figure 3). The changes on the landscape tend to eliminate wildlife species that are more sensitive to the loss of habitat and resources (Prevedello and Vieira 2010). The mountain lion *Puma concolor* is generalist related to habitat adaptation (Maglioli et al. 2014), while the maned wolf *Chrysocyon brachyurus,* the crab-eating fox *Cerdocyon thous* and the ocelot *Leopardus pardalis* have generalist-eating habits (Aragona and Setz 2001, Tchaichka et al. 2007, Sunquist and Sunquist 2017), being capable of exploiting new environments, consequently being more captured by camera traps than other animals (Downes et al. 1997).

From all the species data, according to IUCN 2016, 57,7% are classified as Least concern (LC), 15,4% as Near threatened (NT), 13,4% as Vulnerable (VU), 9,6% presents deficient data (DD), 1,9% as Endangered (EN) and 1,9% are not rated. The species considered vulnerable are *Blastocerus dichotomus, Leopardus tigrinus, Myrmecophaga tridactyla, Priodontes maximus, Tapirus terrestris, Tayassu pecari* and *Tolypeutes tricinctus.* The near-threatened species records are from *Chrysocyon brachyurus, Leopardus colocolo, Leopardus wiedii*, *Lontra longicaudis, Ozotoceros bezoarticus, Panthera onca, Speothos venaticus* and *Tolypeutes matacus.* Only *Pteronura brasiliensis* is endangered.

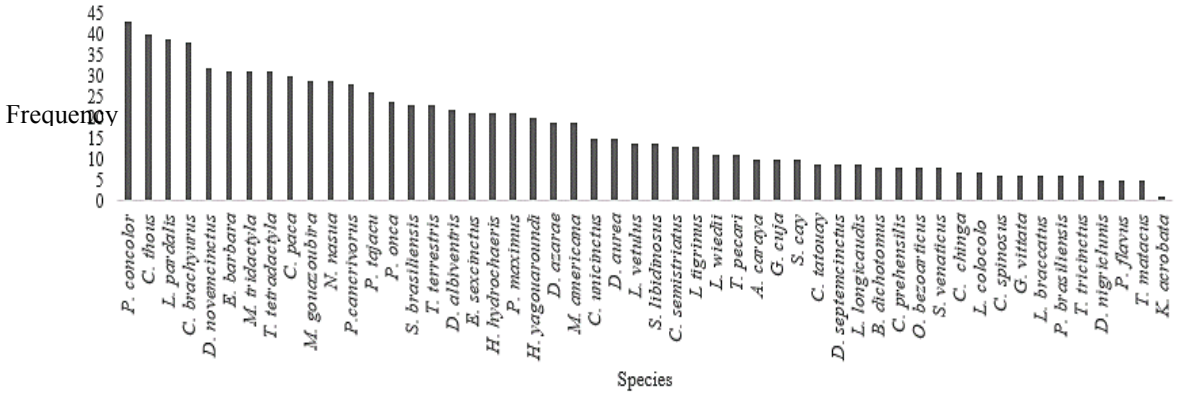

Figure 3. Distribution of frequencies of occurrence of the species evaluated. The black bars represent the frequency related to each specie.

Species that present social behavior as the ones registered, such as *Pecari tacaju* and *Tayassu pecari*, usually increase the total number of records, considering that many individuals can trigger the camera sensor several times (Foster and Harmsen 2012). Other common biases are related to the time spent by one individual in front of the sampling station, as well as one individual being able to use the sampling site many times in a short period of time (Ridout et al. 2009, Rowcliffe et al. 2014). An interval among consecutive records is established to minimize this. Jácomo et al. (2004) determine records independence by grouping the capture times into hourly, two-hourly or irregular intervals. Most surveys of this data set adopted 5 to 30 minutes and 1 hour of independence, but 5,34% didn't approach this information. It's known that 50 species occur all over the Cerrado domain, but two new species were registered at the surveys sampled: *Didelphis marsupialis* and *Alouatta guariba.*

Geographical information, such as latitude and longitude, is available in 97,13% of the compiled studies, however, the data have a geographical bias due to variation of the research total sampling effort across the Cerrado. Among this biome, Goiás and Minas Gerais are the states with the largest number of researches, with 37,95% and 28,42%, respectively. Furthermore, ecotone regions represent 14,14% of the studies' areas. All species occur in at least two singletons (i.e. species recorded in at least two sites) of the full data set 265 occurrence sites.

Bahia and Piauí states represent, together, only 4,67% of the study areas, and Maranhão, 0,3%. These numbers show a gap for these three states that need to be more studied in relation to medium and large sized mammals' communities. To understand the ecological patterns of the species in those areas, its necessary to encourage new research, especially around the conservation units, because it represents continuous areas of this biome, where it can be found more species (Castro and Martins 1999).

Likewise, 35,45% of the study areas are located outside of conservation units, while 31,22% inside of conservation units (Figure 4) and 30,32% in both areas. 3,02% of the studies do not specify this information along the research methodology. Surveys sites varied from 10 to 132.000 hectares. Thus, more species were detected in large sized samples (Figure 5). This was expected, since the diversity of mammal communities is directed related to habitat size and resources availability (Chiarello

2000). At the same time, this can also be related to the fact that large areas requires a bigger sampling effort, resulting in more animals detected by the cameras.

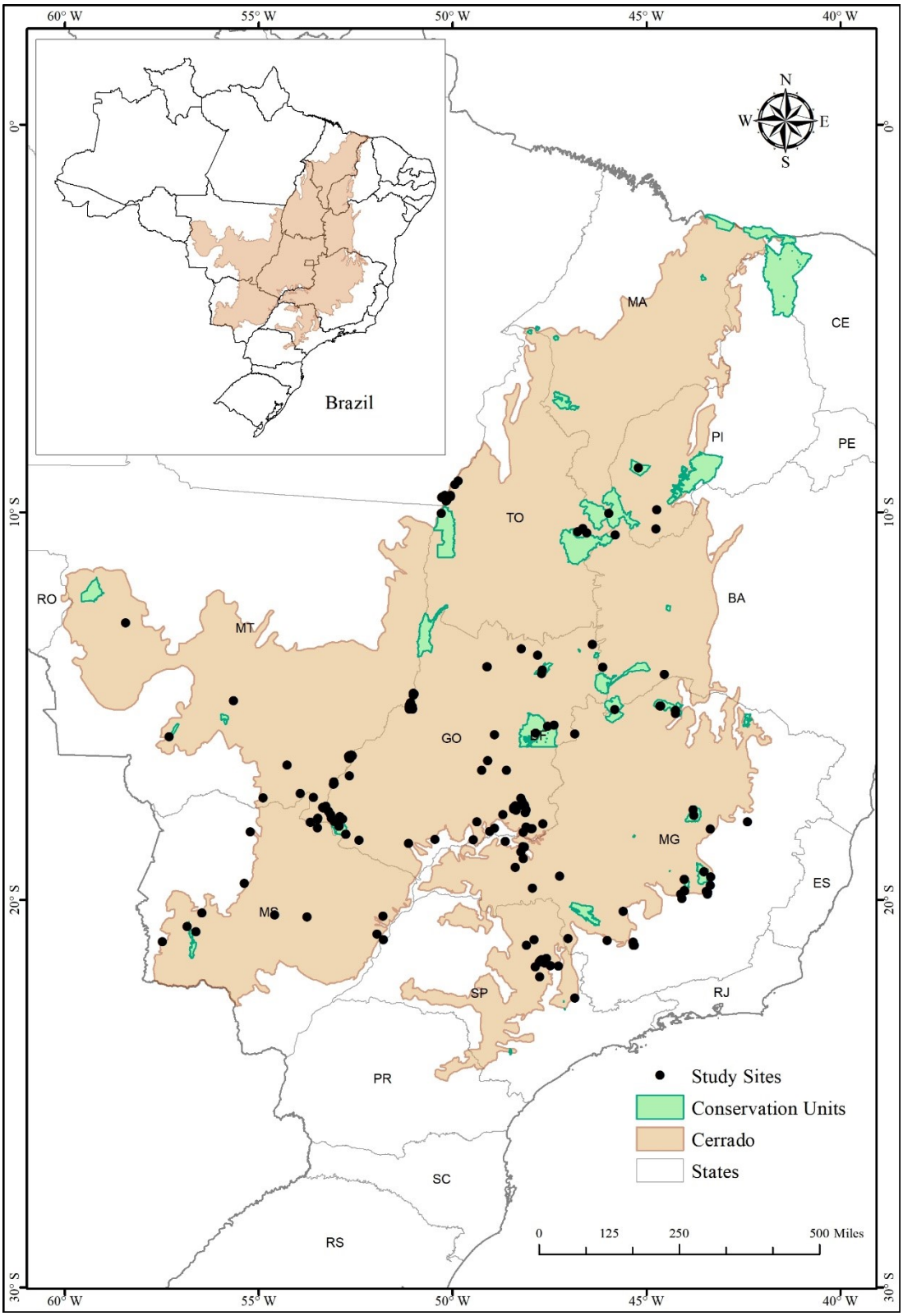

Figure 4. Distribution of the studies areas among Cerrado's conservation units. Light brown shows the Cerrado extent. Black dots show the geographic location of studies. This conservation units are both from Integral and Sustainable Use Categories.

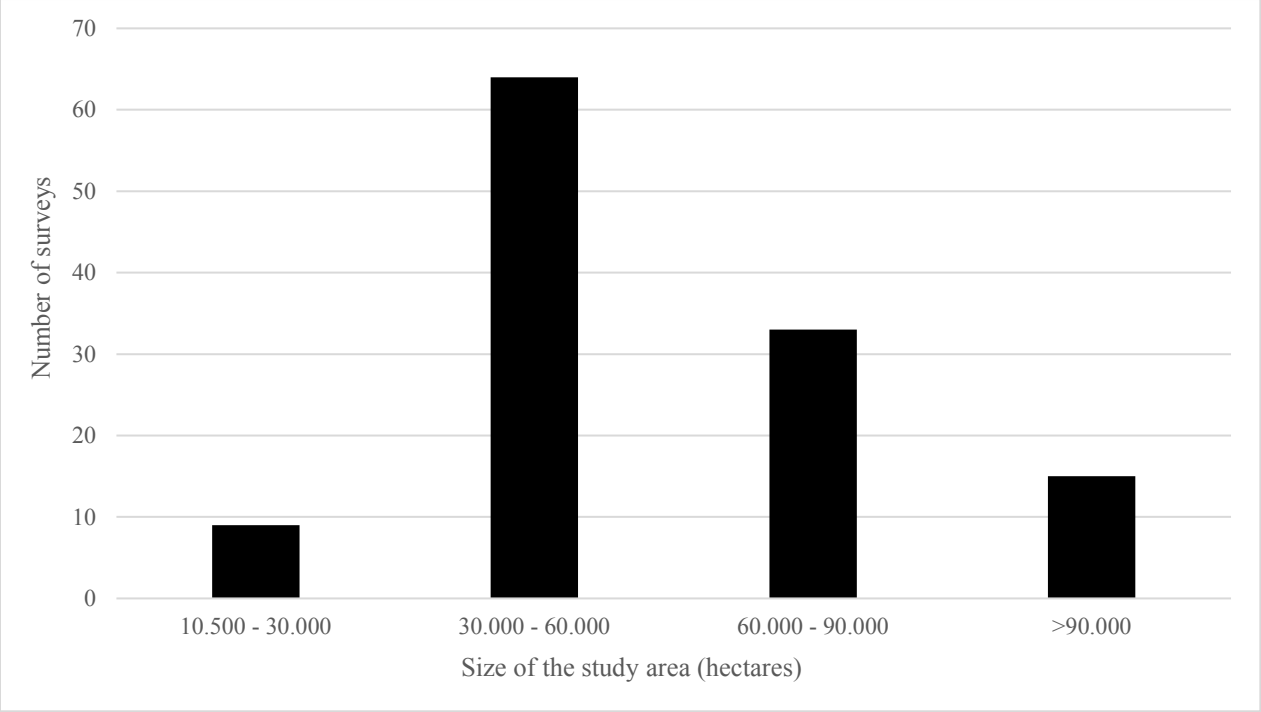

Figure 5. Relation between the amount of studies and the size of the sampling area. The black bars represent the number of studies that sampled 10.500 – 30.000, 30.000 – 60.000, 60.000 - 90.000 or >90.000 studies area size.

Species richness seems to be correlated to sampling effort and size of study area, as more species were registered in bigger and more sampled areas (Figure 6). Also, Goiás and Minas Gerais' states present a higher number of species richness when compared to other states (e.g. Piauí), this happens probably because of the high interest of the researchers on these areas, therefore highlighting the results found there. However, future studies can show us different results, as many areas from Mato Grosso, Tocantins, Maranhão, Bahia and Mato Grosso do Sul have not been sampled. This survey shows that new areas, such as the ones with high numbers of species richness, could be transformed in conservation units.

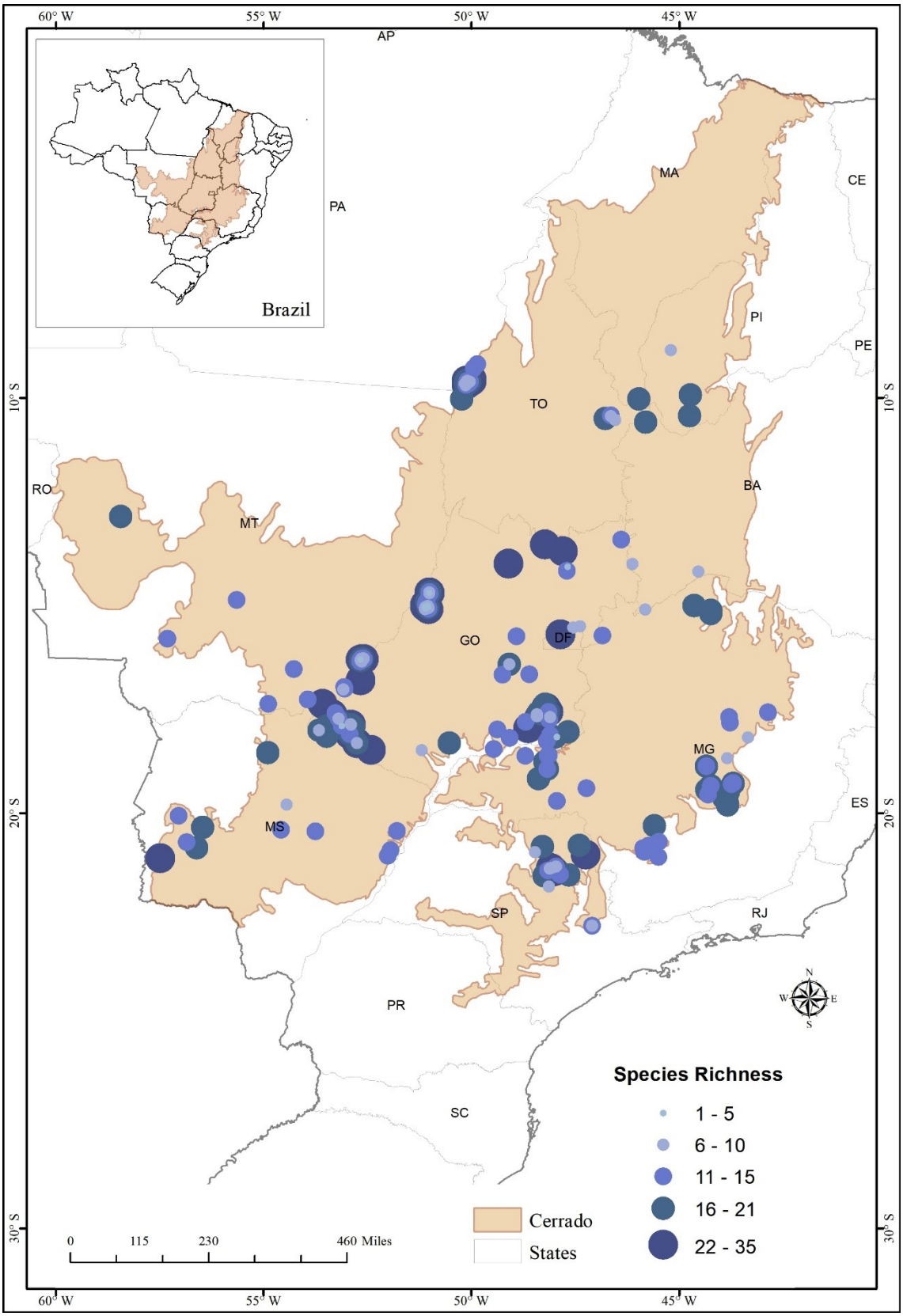

Figure 6. Distribution of species richness across Cerrado sites where camera traps were used for sampling of medium and large terrestrial mammal species. The intensity of the blue circle represents the species richness that can be found in this area.

CLASS II. Research origin descriptors

A. Overall project description

1. Identity

A compilation of medium to large-sized terrestrial mammals records from camera trap surveys in a neotropical savanna.

2. Originators:

This project was coordinated by Letícia Benavalli at the Universidade Federal de Uberlândia (UFU), and the database was assembled with help from all the other authors.

3. Period of study: Dates of source publications range from 2001–2018.

4. Objective: Our goal is to present a dataset of medium and large sized occurrence in Cerrado, obtained from the use of camera trap studies.

5. Abstract: Same as above.

6. Sources of funding:

The compilation of this dataset was supported by Minas Gerais Research Support Foundation (FAPEMIG) grants. Disney World Conservation Fund, Monsanto Fund, and Odebrecht Agroindustrial and Wildlife Research support the data obtained from Instituto Onça-Pintada (IOP).

Specific subproject description

1. Site description

The Cerrado, often called the Brazilian savanna, is the second largest Neotropical ecoregion (Loyola et al. 2009), originally covering about 2.0 million km² (Klink and Machado 2005). Representing 25% of the country and being the dominant vegetation of central Brazil (Pilon et al. 2017), this is the most diverse savanna in the world, particularly in terms of plant diversity (Myers et al. 2000). In addition, this biome creates different environments for fauna (Veblen et al. 2007), due to the heterogeneous mosaics of woodlands, grasslands and shrublands (Sano et al. 2010).

At least 10.000 species of plants (Myers et al. 2000), 780 fishes (Maury 2002); 209 anurans (Valdujo et al. 2012); 267 squamate species (Nogueira et al. 2012); 837 birds (Silva 1995) and 251 native mammals (Paglia et al. 2012) can be found in Cerrado. This biome is recognized as the one with the most scientific literature by the government (Arruda et al. 2018). Furthemore, like other savannas in the world, the vegetation structure of this region is highly subject to fire on dry season, which maintain the biomass gradient of Cerrado types (Setterfield et al. 2010).

During the past three decades, Cerrado has suffered significant human impacts (Jepson 2005) that result in a high environmental cost: water pollution, fragmentation, biodiversity loss, invasive species, soil erosion, changes in fire regime, among others (Klink and Moreira 2002). A study showed that about 880.000 km² have already been suppressed or transformed for human uses, resulting in only 2% of Cerrado in protected areas (Gosch et al. 2016). Also, only in Goiás state the estimate of conversions is between 58.000 and 79.600 km², considering the occupation, land use and the amount of remnant vegetation (Ferreira et al. 2016).

The conversion of the native vegetation happens due to the agricultural expansion and livestock policies intensified in 1970 (Miziara and Ferreira 2008) as one alternative to increase the production of meat in Brazil (Brossard and Barcellos 2005). Therefore, despite the high number of species endemism and richness (Carvalho et al. 2009), this biome faces an imminent threat of rapid land use changes resulting from agriculture development, human population, expansion of sugar cane plantations and extensive cattle raising (Klink and Machado 2005). This information associated to the strong human pressure and high species endemism classifies Cerrado as one of the hotspots for the biodiversity conservation in the world (Myers et al. 2000, Mittermeier et al. 2005).

2. Experimental or sampling design

a. Literature survey

All data were obtained from three main sources: (i) literature search, including articles, theses and dissertations, using the online academic databases Google Scholar, Web of Science and ResearchGate, (ii) contact with organizations known to have conducted camera trap surveys in the Cerrado.

Considering that medium to large mammals are those whose weight is equal or bigger than 1 kg (Chiarello 2000), we used the Annotated Checklist of Brazilian Mammals (Paglia et al. 2012) to determine which species would be considered, following the taxonomic arrangements according to it. A bibliographical review of the studies that gathered camera trap information of medium and large-sized mammals species was carried out. In this way, different keywords were used for each species, represented by "camera trap", "Cerrado", "species popular name" and "species scientific name". We considered keywords that could be found in the entire text of the article, including the title, for each specie. Searches were conducted in Portuguese, English and Spanish.

3. Research Methods

a. Literature data

Studies that sampled medium to large-sized terrestrial mammals communities' records from camera trap were included in this survey. Nevertheless, studies that did not provide detailed information about species composition or geographic coordinates were disregarded. All information were organized according to the sampled habitat, sampling effort (in periods of the days sampled and initial and final month and year) and species composition. We also included information regarding geographic location (latitude, longitude, country, state, municipality and specific locality of the survey). When certain information was not available in a publication, we labeled "NA".

b. Taxonomic and systematics

Some individuals sampled were identified only on a genus level. In these cases, we filled the cell in column "species" with NA, maintaining the taxonomic uncertainties sp. and spp. We updated and/or corrected the species taxonomy, whenever it was necessary (e.g. *Herpailurus yagouaroundi* that was anteriorly called as *Puma yagouaroundi).* To determine the species status, we used the IUCN Red List of Threatened species available on the IUCN website (IUCN 2016).

c. Statistical analyses

To provide a preliminary overview of the data we used descriptive statistical analysis. The maps were generated in Geographical Information System Software (ArcGis) by Esri (Environmental Systems Resource Institute, ArcMap 9.3).

d. Data limitations and potential enhancements

Gathering and summarizing information about all species of a diverse group as terrestrial mammals present in a megadiverse ecosystem is a challenging task, depending on species biology and detectability (Tobler et al. 2008a), sampling effort and microhabitats sampled. As a result of the high diversity of occurrence niches, some species could not be sampled (Beca et al. 2017), since this can be influenced by several factors, such as camera trap type and configurations.

The detectability can be affected because some species are too rare (e.g. *Panthera onca, Speothos venaticus)* or move too fast, requiring a consistent sampling effort (Fusco-Costa and Ingberman 2013). Species detectability can also be influenced by the sampling location (e.g. sampling along roads and large trails) (Bitetti et al. 2014). Tobler et al. 2008b describes that different equipment may influence species' capture success. Thus, the sampling effort length of studies are limited to a small timeframe, limiting the detection of long-term population trends (Lima et al. 2017).

This database is derived from several sources and the information's heterogeneity must be considered, because sampling design and variable efforts can limit the comparisons analysis. Besides that, this biome has been unevenly sampled, which may have overlooked the data mining process of some studies. Furthermore, many areas from Cerrado's northwestern and northeastern are understudied, with few studies in the states of Bahia, Piauí and Maranhão (Mendonça et al. 2018). Another limitation is in the need of good photography for the identification of some species that occur in the same genera (e.g. *Mazama sp., Leopardus sp.*).

Despite all limitations, this survey reflects the largest dataset of medium and large terrestrial mammal's communities, representing a massive effort by biologists working in this hotspot. We expect that this information can help detect gaps, identify priority areas for endangered species conservation and understand the relationship between local abundance and regional distribution.

CLASS III. Data set status and accessibility

A. Status

1. Latest update: November 2018

2. Latest archive date: November 2018

3. Metadata status: Last updated November 2018, version to submit

4. Data verification: Data is mostly from published sources and verified at distinct levels. Extreme coordinate's values were corrected and were checked one by one in Google Earth. We also used this mechanism to obtain approximate geographic coordinates in the absence of this information. Finally, all latitudes and longitudes were converted to decimal degrees using the Species Link (CRIA 2014).

B. Accessibility

1. Storage location and medium: The original dataset can be accessed as supporting information to this data paper publication in Ecology.

2. Contact person(s): Letícia Benavalli (lebenavalli@gmail.com)

3. Copyright restrictions: None

4. Proprietary restrictions: Please, cite this data paper when the data are used in publications or teaching events.

5. Costs: None

CLASS IV. Data structural descriptors

A. Data Set File

Identity: CERRADO--references.csv

CERRADO- sites.csv

CERRADO-species.csv

CERRADO-capture.csv

Size: CERRADO-references.csv (31,6 KB);

CERRADO-sites.csv (56,6 KB); CERRADO-species.csv (11,9 KB) and CERRADO-capture.csv (62,5 KB).

Format and storage mode: comma-separated values (.csv)

Header information: See column descriptions in section B.

Alphanumeric attributes: Mixed.

Data Anomalies: If no information is available for a given record, the column is indicated as "NA".

B. Variable information

1) Table 1. References Information. Description of the fields related to the reference information of each study in CERRADO-reference.csv.

Type of information	Field	Description	Levels	Example
Reference information	Reference number	The numbers of references that report medium and large sized mammals communities	1 – 122	4
	Reference	Extended information of the reference		Neves, K. C. 2012. Avaliação da riqueza e abundância de espécies de mamíferos de médio e grande porte em fragmentos florestais no município de Goiânia, Goiás, Brasil.
	Publication year	Year of publication	2001-2018	2012
	Type of publication	Publication type	Article, Unpublished	Article

2) Table 2. Site information. Description of the fields related with the study site of the CERRADO-sites.csv.

Type of information	Field	Description	Levels	Examples
Site information	Reference number	The reference number that report medium and large sized mammals communities	1-122	1
	Country	Country of the study	Brazil	Brazil
	State	State of the study	All Brazilian states	Goiás
	Municipality	Municipality of the study	All Brazilian municipalities	Mineiros
	Study location	Specific location of the study	All Brazilian territory	Emas National Park
	Size HA	Size of the study area in hectares		132.000
	Latitude	Decimal degrees		-17.261602
	Longitude	Decimal degrees		-53.932772
	Precision	Precision of the study area		
	Protected area	If the study is inside or outside of protected areas	Yes, No, Both	Yes

3) Table 3. Species Information. Conservation status of medium and large sized mammal species reported in the Cerrado dataset based on IUCN criteria (2016).

Specie	Genera	Family	Order	IUCN Status
Aloutta caraya	*Alouatta*	Atelidae	Primates	Least concern
*Alouatta guariba**	*Alouatta*	Atelidae	Primates	Least concern
Sapajus cay	*Sapajus*	Cebidae	Primates	Least concern
Sapajus libidinosus	*Sapajus*	Cebidae	Primates	Least concern
Cerdocyon thous	*Cerdocyon*	Canidae	Carnivora	Least concern
Chrysocyon	*Chrysocyon*	Canidae	Carnivora	Near

brachyurus				threatened
Lycalopex vetulus	*Lycalopex*	Canidae	Carnivora	Least concern
Speothos venaticus	*Speothos*	Canidae	Carnivora	Near threatened
Leopardus braccatus	*Leopardus*	Felidae	Carnivora	Data deficient
Leopardus pardalis	*Leopardus*	Felidae	Carnivora	Least concern
Leopardus tigrinus	*Leopardus*	Felidae	Carnivora	Vulnerable
Leopardus colocolo	*Leopardus*	Felidae	Carnivora	Near threatened
Leopardus wiedii	*Leopardus*	Felidae	Carnivora	Near threatened
Panthera onca	*Panthera*	Felidae	Carnivora	Near threatened
Puma concolor	*Puma*	Felidae	Carnivora	Least concern
Herpailurus yagouaroundi	*Herpailurus*	Felidae	Carnivora	Least concern
Conepatus chinga	*Conepatus*	Mephitidae	Carnivora	Least concern
Conepatus semistriatus	*Conepatus*	Mephitidae	Carnivora	Least concern
Eira barbara	*Eira*	Mustelidae	Carnivora	Least concern
Galictis cuja	*Galictis*	Mustelidae	Carnivora	Least concern
Galictis vittata	*Galictis*	Mustelidae	Carnivora	Least concern
Lontra longicaudis	*Lontra*	Mustelidae	Carnivora	Near threatened
Pteronura brasiliensis	*Pteronura*	Mustelidae	Carnivora	Endangered
Nasua nasua	*Nasua*	Procyonidae	Carnivora	Least concern
Potos flavus	*Potus*	Procyonidae	Carnivora	Least concern
Procyon cancrivorus	*Procyon*	Procyonidae	Carnivora	Least concern
Sylvilagus brasiliensis	*Sylvilagus*	Leporidae	Lagomorpha	Least concern
Hydrochoerus hydrochaeris	*Hydrochoerus*	Caviidae	Rodentia	Least concern
Kerodon acrobata	*Kerodon*	Caviidae	Rodentia	Deficient data
Cuniculus paca	*Cuniculus*	Cuniculidae	Rodentia	Least concern
Dasyprocta aurea	*Dasyprocta*	Dasyproctidae	Rodentia	Unavailable data
Dasyprocta azare	*Dasyprocta*	Dasyproctidae	Rodentia	Deficient data
Dasyprocta nigriclunis	*Dasyprocta*	Dasyproctidae	Rodentia	Unavailable data
Coendou prehensilis	*Coendou*	Erethizontidae	Rodentia	Least concern
Coendou spinosus	*Coendou*	Erethizontidae	Rodentia	Least concern
Myrmecophaga tridactyla	*Myrmecophaga*	Myrmecophagidae	Pilosa	Vulnerable
Tamandua tetradactyla	*Tamandua*	Myrmecophagidae	Pilosa	Least concern
Cabassous tatouay	*Cabassous*	Dasypodidae	Cingulata	Least concern
Cabassous unicinctus	*Cabassous*	Dasypodidae	Cingulata	Least concern
Dasypus novemcinctus	*Dasypus*	Dasypodidae	Cingulata	Least concern
Dasypus septemcinctus	*Dasypus*	Dasypodidae	Cingulata	Least concern
Tolypeutes matacus	*Tolypeutes*	Dasypodidae	Cingulata	Near threatened

Tolypeutes tricinctus	*Tolypeute*	Dasypodidae	Cingulata	Vulnerable
Euphractus sexcinctus	*Euphractus*	Chlamyphoridae	Cingulata	Least concern
Priodontes maximus	*Priodontes*	Chlamyphoridae	Cingulata	Vulnerable
Tapirus terrestris	*Tapirus*	Tapiridae	Perissodactyla	Vulnerable
Blastocerus dichotomus	*Blastocerus*	Cervidae	Artiodactyla	Vulnerable
Mazama americana	*Mazama*	Cervidae	Artiodactyla	Deficient data
Mazama gouazoubira	*Mazama*	Cervidae	Artiodactyla	Least concern
Ozotoceros bezoarticus	*Ozotoceros*	Cervidae	Artiodactyla	Near threatened
Pecari tajacu	*Pecari*	Tayassuidae	Artiodactyla	Least concern
Tayassu pecari	*Tayassu*	Tayassuidae	Artiodactyla	Vulnerable
Didelphis albiventris	*Didelphis*	Didelphidae	Didelphimorphia	Least concern
*Didelphis marsupialis**	*Didelphis*	Didelphidae	Didelphimorphia	Least concern

*According to the Annotated Checklist of Brazilian Mammals (Paglia et al. 2012), these species represent new records for this biome.

4) Table 4. Capture information. Description of the fields related with the complete capture information in CERRADO-capture.csv.

Type of information	Field	Description	Level	Example
Capture information	Reference number	The reference number that report medium and large sized mammals communities	1-122	1
	Sampling Effort	Total trap days of each study		45
	Specie	Specie cited in each study	All species sampled	*Panthera onca*
	Genera	Genera of the specie of each study	All genera sampled	*Panthera*
	Family	Family of the species of each study	All families sampled	Felidae
	Order	Order of each	All order sampled	Carnivora

		species of each study		
	Month start	Month when the survey started	January to december	June
	Year start	Year when the survey started	2001-2018	2009
	Month end	Month when the survey finished	January to december	August
	Year end	Year when the survey finished	2001-2018	2009
	Sampling design	Design used in each study	Line transect, random, grid	Line transect
	Distance between cameras	Distance between cameras in each study		1.5 km
	Records	Number of records for each specie in each study		32
	Method	Method used in each study to sample mammal communities	Camera trap	Camera trap

CLASS V. Supplemental descriptors

A. Publications and results

None.

B. History of data set usage

1. Data request history: None.

2. Data set updates history: None.

3. Review history: None.

4. Question and comments from secondary users: None.

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