ZSL
LET'S WORK FOR WILDLIFE

EDGE

EVOLUTIONARILLY DISTINCT & GLOBALLY ENDANGERED

Survival Blueprint

Giant anteater, *Myrmecophaga tridactyla*

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1. STATUS REVIEW

1.1 Taxonomy:

Class: Mammalia
Order: Pilosa
Suborder: Vermilingua
Family: Myrmecophagidae
Genus: Myrmecophaga
Species: *Myrmecophaga tridactyla* Linnaeus, 1758

There are three sub-species recognized by Gardner (2007):
Myrmecophaga tridactyla artata Osgood, 1912
Myrmecophaga tridactyla centralis Lyon, 1906
Myrmecophaga tridactyla tridactyla Linnaeus, 1758

Common name(s):
Giant Anteater (English)
Oso Hormiguero (Spanish)
Tamanduá-bandeira (Portuguese)

1.2 Distribution and population status:

1.2.1 Global distribution:

The giant anteater (*Myrmecophaga tridactyla*) is endemic to the Neotropical region, occurring throughout South and Central America, but absent from North America (Wetzel 1985; Emmons and Feer 1997; Einsenberg and Redord 1999; Gardner 2005). According to Shaw and McDonald (1987), the species was more widely distributed in the early Pleistocene – a fossil found in Sonora (Mexico) indicates that the giant anteater participated in the Great American Exchange, after the formation of the Isthmus of Panama, which allowed the migration of numerous species between North and South America, previously isolated. Subsequently, there was a reduction in the species' range, probably due to climate and habitat changes associated with the retraction of glaciers (McCain, 2001). Currently, records of giant anteaters in Central America are historical, rare, or anecdotal and it is more likely that the species is extinct from most of its original extent. While occurring throughout most part of South America, the giant anteater has also been suffering from local extinctions, especially in the southern limits of its range.

Country	Population estimate (plus references)	Distribution	Population trend (plus references)	Notes
Argentina	Possibly extinct in Chaco, Córdoba, Corrientes, Entre Ríos (Miranda et al 2014)	Formosa, Jujuy, Misiones, Salta, Santa Fé, Santiago del Estero, Tucumán (Miranda et al 2014); Mostly open areas, but also found in forests (Gallo et al 2017)	Decreasing	There is a successful reintroduction program in Iberá Natural Reserve, in Corrientes (Di Blanco et al 2015) See also: Jimeno, Amaya (2009); Fonseca, Aguiar (2004); Bauni et al (2013)

Belize	Possibly extinct (Miranda et al 2014)	-	-	-
Bolivia	Unknown	Pando, Beni, northern Cochabamba, Santa Cruz and eastern Tarija and probably eastern Chuquisaca (Anderson 1997), Chiquitano forests, Pantanal (Brooks et al 2001), Chiquitan and Chaco transition zones (Koysdar et al 2014), Noël Kempff National Park (Emmons et al 2014), Gran Chacho Kaa-Iya National Park in Santa Cruz, Madidi National Park in La Paz (Quiroga et al 2016)	Decreasing	-
Brazil	Possibly extinct in Espírito Santo, Rio de Janeiro, Rio Grande do Sul, Santa Catarina (Miranda et al 2014)	Acre, Alagoas, Amapá, Amazonas, Bahia, Ceará, Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraíba, Paraná, Pernambuco, Piauí, Rio Grande do Norte, Rondônia, Roraima, São Paulo, Sergipe, Tocantins (Miranda et al 2014)	Decreasing	-
Colombia	Unknown	Mainland (Miranda et al 2014), mainly present in the east of Andes (Orinoquía and Amazonia regions), but also in the Caribe, Pacífica and Andina regions (Sandoval-Gomez et al 2012; López et al 2013; Rojano-Bolaño et al 2015; Pacheco et al 2017)	Decreasing	Figel et al (2015) documented an expansion of c. 430 km in the species' distribution limits, including populations that inhabit the Magdalena river valley, between the central and eastern Andes
Costa Rica	Unknown	Mainland (Miranda et al 2014); Corcovado National Park, Rincón de La Vieja National Park, La Selva Biological Station (Timm et al 2009)	Decreasing	Sighting reports are from the late 1970s and early 1980s, all in protected and forested areas (Timm et al 2009). Martínez et al (2017) documents that the species was never common in the country, with isolated records
Ecuador	Unknown	Mainland (Miranda et al 2014); Yasuni Biosphere Reserve (Blake et al 2012)	Decreasing	-
El Salvador	Possibly extinct (Miranda et al 2014)	-	-	Not included in the latest checklist of land mammals (Owen, Girón 2012).

French Guiana	Unknown	Paracou Research Station in Cayenne (Voss et al 2001); forested areas in Saint-Laurent-du-Maroni (De Thoisy et al 2008)	Decreasing	-
Guatemala	Possibly extinct (Miranda et al 2014)	-	-	-
Guiana	Unknown	Rupununi river region (Fragoso et al 2016)	Decreasing	-
Honduras	Unknown	Mainland (Miranda et al 2014); Río Plátano Biosphere Reserve (RBRP) (McCain, 2011; Gonthier, Castañeda, 2013; Martinez et al 2020), Colón, Gracias a Dios, Olancho (Reyes et al 2010)	Decreasing	First known record is from 1996, when an adult giant anteater was captured by Miskitos in RBRP to be sold in Asia, but then was released back into the wild (McCain 2001)
Nicaragua	Unknown	Mainland (Miranda et al 2014); Forests (Genoways, Timm 2003); Bosawas Biosphere Reserve (Koster et al 2008)	Decreasing	Miskito people do not consume giant anteaters, but some animals are killed because they represent a threat to domestic hunting dogs
Panama	Unknown	Unknow	Decreasing	Although it is present in Goldman's Mammals of Panama (1920), the giant anteater was considered rare by Handley's checklist (1966)
Paraguay	Unknown	Chaco and Pantanal regions (Smith 2007)	Decreasing	Historically, the giant anteater was present throughout the country, but according to Smith (2007), it has suffered local extinctions due to hunting pressure mainly in the east. Abba and Vizcaíno (2008) list eight specimens in Paraguay, but all of them with imprecise locations
Peru	Unknown	Amazon region (Grimwood 1968); Tambopata (Naughton-Treves et al 2003); Manu Biosphere Reserve, Madre de Dios (Boddicker & Amanzo 2002); San Martin and Amazonas (Allgas et al 2015)	Decreasing	-
Suriname	Unknown	Kwamalasamutu region (Gajapersad et al 2012)	Decreasing	See Husson (1978)

Uruguay	Possibly extinct (Miranda et al 2014)	-	-	First record is from late 1990s, in Cerro Largo, followed by others in Rivera and Tacuarembó, all in the north of the country. It is now considered extinct (Fallabrino, Castiñeira 2006). See also: Ameneiros et al (2015)
Venezuela	Unknown	Mainland (Miranda et al 2014); Llanos	Decreasing	See Allen (1904) and Montgomery and Lubin (1977)

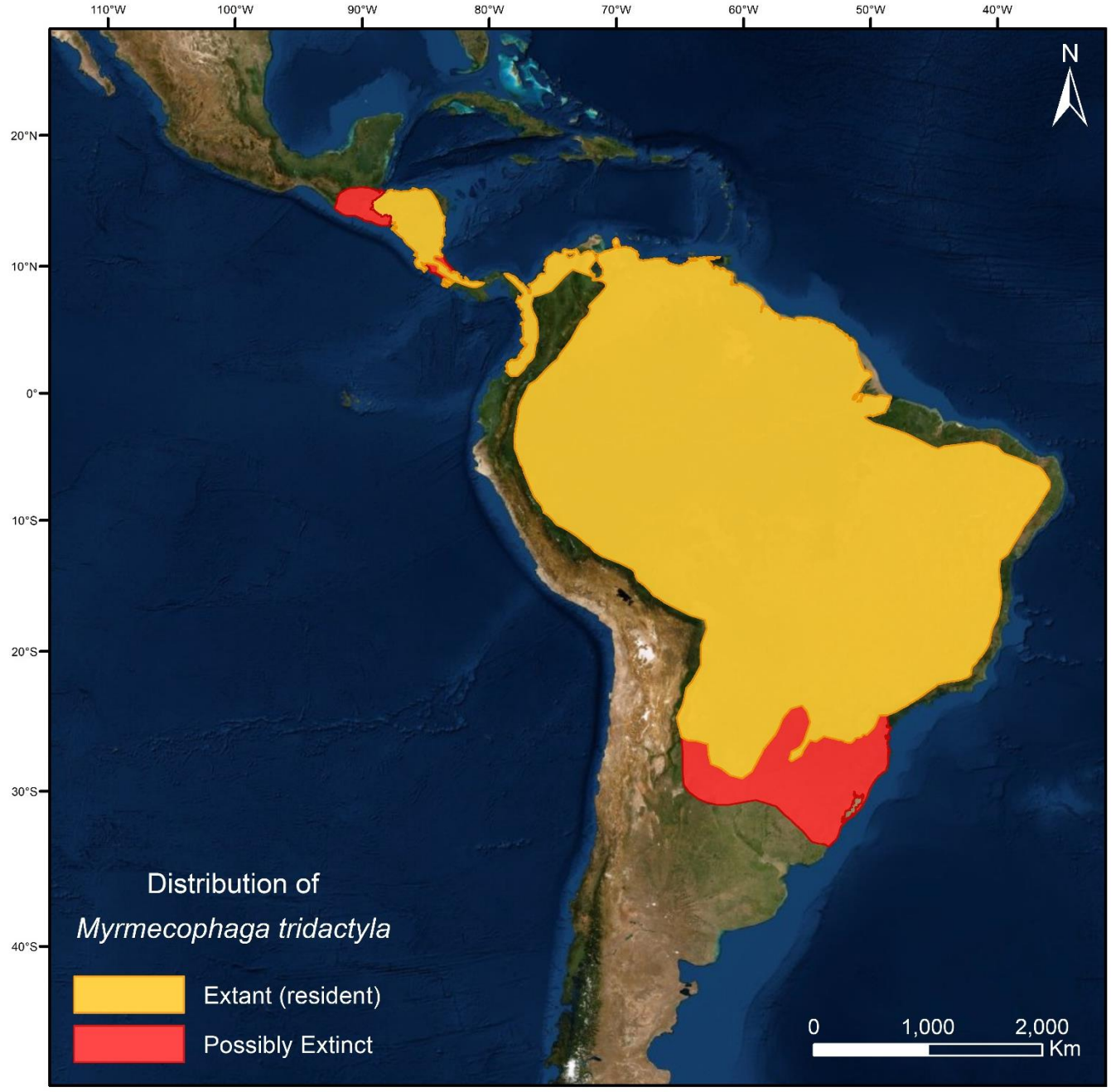

Figure 1. Global distribution of the giant anteater (*Myrmecophaga tridactyla*), according to the latest assessment by IUCN (Miranda et al 2014).

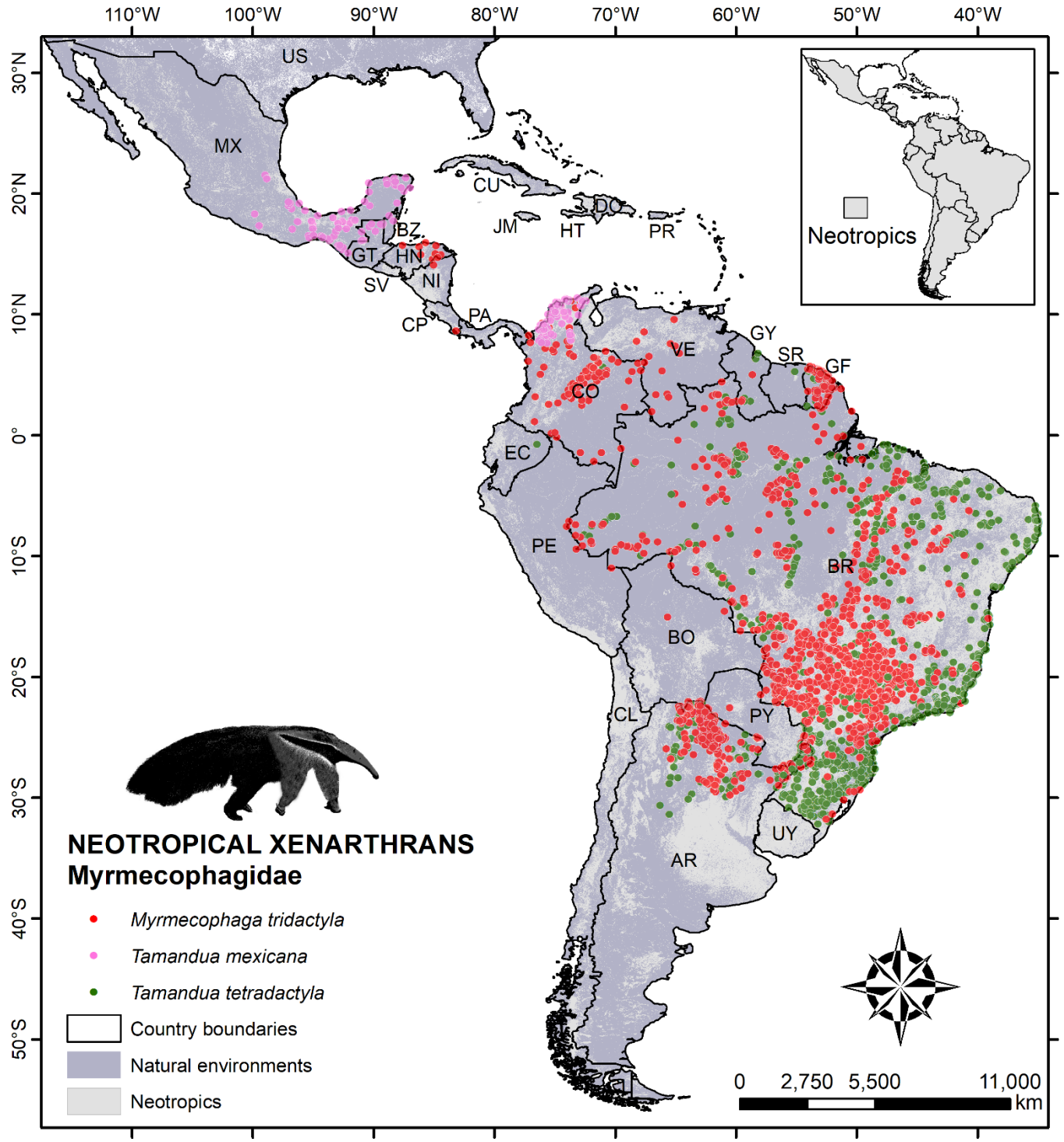

Figure 2. Presence records (in red) of the giant anteater (*Myrmecophaga tridactyla*) throughout Central and South America (Santos et al 2019).

1.2.2 Local distribution:

Although historically the giant anteater occurred in all Brazilian biomes (Paglia et al., 2012), today the taxon is considered possibly extinct in the Pampas and almost extinct in the Atlantic Forest and Caatinga (Miranda et al 2015). Although relatively stable in the Pantanal and Amazon, their population has been drastically reduced in the Cerrado, one of the strongholds for giant anteaters.

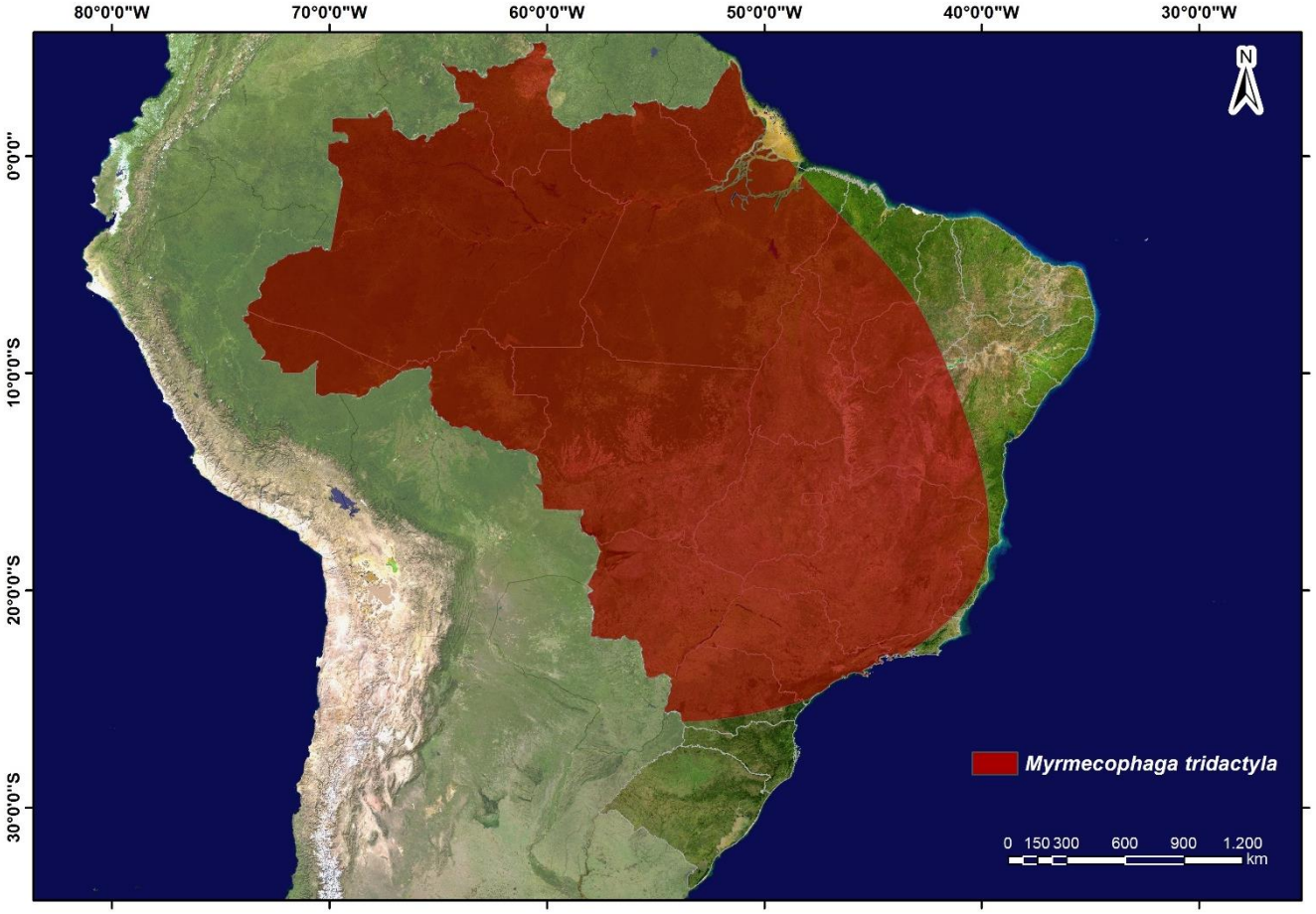

Figure 3. Local distribution of the giant anteater (*Myrmecophaga tridactyla*) in Brazil (Miranda et al 2015).

The table below indicate some strictly protected areas (IUCN categories I-III) in the Brazilian states within the Cerrado, where the presence of the giant anteater has been confirmed. It is important to note, however, that the species is also present outside protected areas, where information about its occurrence and abundance is very scarce.

Country /Region	Region / province	Site	Level of Protection	Population size	Reference(s)	Notes
Brazil / Cerrado	Bahia	Boqueirão da Onça, Chapada Diamantina National Park, Grande Sertao Veredas National Park, Serra das Confusões National Park	Strictly protected areas (IUCN categories I-III)	Unknown	Campos et al 2019; Dias et al 2019	

	Distrito Federal	Brasilia National Park	Strictly protected area (IUCN category III)	Unknown	Diniz, Brito 2013; Lacerda et al 2009.	
	Goiás	Emas National Park, Chapada dos Veadeiros National Park	Strictly protected area (IUCN category III)	Unknown	Bechara et al., 2002; Collevatti et al., 2007; Redford, 1985; Silveira et al., 1999; Silveira et al, 2003; Vynne et al., 2009; Zimbres et al., 2012.	Density of 0.2 ind. / km² (Miranda et al 2006) and 0.64 ind. / km² (Silveira et al 1999) in Emas National Park
	Maranhão	Gurupi Biological Reserve, Chapada das Mesas National Park, Nascentes do Rio Parnaíba National Park	Strictly protected area (IUCN category I-III)	Unknown	Elildo Carvalho-Junior 2015 Pers. Comm.	
	Mato Grosso	Rio das Mortes Xavante Reserve, Chapada dos Guimarães National Park	Strictly protected area (IUCN category I-III)	Unknown	Leeuwenberg 1997; Prada, Marinho-Filho 2004.	
	Mato Grosso do Sul	Emas National Park, Serra da Bodoquena National Park,	Strictly protected area (IUCN category III)	Unknown	Nascimento, Campos 2011; Rodrigues et al 2002; Anteaters and Highways Project; Ascensão 2017; 2019	
	Minas Gerais	Serra da Canastra National Park, Grande Sertão Veredas National Park, Sempre-Vivas National Park, Rio Preto State Park, Veredas do Peruaçu State Park	Strictly protected area (IUCN category I-III)	Unknown	Schneider et al 2000; Shaw et al 1987; Young, Coelho 2003; Nascimento, Campos 2011	Density of 1-2 ind./km² for Serra da Canastra National Park (Saw et al 1987)

	Paraná	Lauráceas State Park, Guartela State Park, Iguaçu National Park	Strictly protected area (IUCN category I-III)	Unknow	Passos et al 2016; Hack & Kruger 2013; Silva et al 2018	
	Piauí	Serra da Capivara National Park	Strictly protected area (IUCN category III)	Unknow	Nascimento, Campos 2011	
	São Paulo	Jatai Ecologica Station, Santa Barbara Ecological Station, Angatuba Ecological Station, Vassununga State Park, Carlos Botelho State Park, Morro do Diabo State Park	Strictly protected area (IUCN category I-III)	Unknow	Paolino 2016; Bertassoni, 2017; 2019	
	Tocantins	Serra Geral do Tocantis Ecological Station, Araguaia National Park	Strictly protected area (IUCN category I-III)	Unknow	Nascimento, Campos 2011	

1.3 Protection status:

Giant anteaters are currently listed as vulnerable to extinction (VU A2c) by the IUCN (Miranda et al 2014) because despite being widely distributed, they are facing local extinctions in the northern and southern limits of their distribution. According to the latest assessment by the IUCN, it is likely that the population has suffered an overall reduction in size of >30% over the last three generations (~ 21 years) (Miranda et al 2014). The species is also listed on Appendix II of CITES.

In Brazil, the giant anteater is listed as vulnerable (VU A2c) by the National Red List (Portaria MMA No. 444/2014) and by the Brazil Red Book of Threatened Species of Fauna (ICMBio, 2018). The species is listed as critically endangered (CR) in Paraná and vulnerable (VU) in Minas Gerais, São Paulo and Pará states, and it is probably extinct in Espírito Santo, Santa Catarina, Rio Grande do Sul and Rio de Janeiro states (Miranda et al 2014).

For the Cerrado and Pantanal biomes, a recent gap analysis indicates that only 9.25% of the total distribution area (~ 1,799,255 km²) for the species is covered by protected areas (but this value drops to 3.27% if we consider only strictly protected areas, i.e., IUCN categories I-III).

When the same analysis is performed only for areas of high environmental suitability (> 0.75% of probability of presence), the scenario is more positive. Of the 19,376.72 km² of highly suitable area, 30.18% are located within protected areas in Cerrado and Pantanal, with 8.43% within strictly protected areas (Alberici 2018).

1.4 Ecology, behaviour and habitat requirements:

The giant anteater belongs to the Xenarthra magna-order, which includes the orders Cingulata (armadillos) and Pilosa (anteaters and sloths), the latter characterized for presenting the lowest basal metabolic rates among placental mammals (Lovegrove, 2000; McNab, 1985). Due to this peculiarity, giant anteaters can be active during the day or at night, depending on the temperature (Camilo-Alves; Mourão, 2005; Mourão; Medri, 2007). They are terrestrial animals, but can swim and even climb trees, and they feed strictly on ants and termites (Emmons and Feer, 1997), which they dig up using their powerful forelegs and sharp front claws and capture with a long, sticky tongue.

Across its range, the giant anteater can be found inhabiting a diversity of native habitats, including grasslands, savannas and humid or dry forests (Miranda et al 2014). Although preferring natural habitats, their presence in agricultural landscapes (e.g. pasturelands, managed forests, and sugarcane fields) has been documented (e.g. Paolino et al., 2016; Versiani, 2016). Home range sizes of giant anteaters vary greatly among studies in various sites, with different monitoring protocols (Bertassoni et al 2019). In the Cerrado, data from c. 40 animals monitored by GPS-collars by the 'Anteaters and Highways' project indicates that their home-range is about 500 ha. While there can be a lot of overlap between giant anteaters' home-ranges, they are solitary animals, only pairing when mating.

Gestation occurs once a year and lasts approximately 180 days; the female gives birth to a single calf and carries it on her back for approximately six to nine months. Data on longevity, survival rates and reproductive rates of free animals are scarce, with most studies focusing on captive animals; it is assumed that the generation length is seven years (Miranda et al 2014).

1.5 Threat analysis:

Despite being a charismatic species, there are few ecological studies with giant anteaters in Brazil. In fact, there is a huge gap in knowledge, especially regarding populational studies (density estimates, reproductive dynamics, genetic viability, etc.). The table below list main threats for the conservation of the giant anteater that have been identified so far (based upon Miranda et al 2014, 2015).

Threat	Description of how this threat impacts the species	**Intensity of threat** *(low, medium, high, critical or unknown)*
Habitat loss and fragmentation	Habitat loss and fragmentation are the main causes of populational decline for giant anteaters. Large monocultures, mainly of soy and sugarcane, together with pasturelands, are important drivers of deforestation in the Cerrado, in a two-step process – first, native vegetation is converted to pasture and, over time, pastures are converted to croplands (Zalles et al 2019). Another source of habitat loss and fragmentation is urbanization and the development of infrastructure (e.g. roads). Since giant anteaters need forested habitats for thermoregulation and protection against predators, habitat loss and fragmentation are key threats to the conservation of the species, but are not receiving much conservation attention.	*critical*
Fires	Giant anteaters are very vulnerable to fires due to their slow movement and flammable coat. As in other tropical savannas, fires are frequent in the Cerrado, and most plant species have adaptations for surviving under a regime of periodic burns (Colli et al 2020). Human provoked fires, however, are traditionally used as an agricultural method, occuring with greater intensity and frequency late in the dry season, when fuel availability and wind speed are highest, and environmental moisture is lowest (Pivello 2011). These fires can quickly spread and are difficult to control, and can lead to devastating consequences for the fauna. Fires inside protected areas are particularly threatening for giant anteaters in the Cerrado (see Silveira et al 1999), and the implementation of effective fire management programmes inside those areas is urgently necessary (Mistry and Bizerril 2011).	*high*
Poaching /Persecution	Giant anteaters can be poached for food or killed for being seen as a threat to domestic dogs or for being associated with negative superstitions (Catapani, pers. comm.) In Brazil, there is poor law enforcement, particularly in rural areas. While this threat is becoming better understood, there is still insufficient research conducted by social scientists on the subject.	*low/medium*
Roadkill	Giant anteaters are very vulnerable to roadkill due to their slow movement and poor eyesight. Despite this threat there is scarce information about the effects of roads on their populations. The Cerrado is undergoing rapid agricultural development and is fragmented by an ever-increasing network of roads. Giant anteaters are among the most frequently killed animals on these roads, and road mortalities now pose a serious threat to species survival. The Anteaters & Highways Project has been focusing on bettter understanding this threat and implemeting mitigation strategies.	*high*
Pesticides and other chemicals	Giant anteaters can be poisoned by pesticides used for controlling ants and termites' populations in Eucalyptus plantations (see Braga 2014). This threath has not been assessed and we still do not know what are the impacts of pesticides and other chemicals on the health of giant anteaters.	*unknown*

1.6 Stakeholder analysis:

Country	Stakeholder	Stakeholder's interest in the species' conservation	Current activities	Impact *(positive, negative or both)*	Intensity of impact *(low, medium, high or critical)*
Brazil / Mato Grosso do Sul state	Landowners	Landowners can acquire knowledge about the wildlife that can be found in their properties. By partnering up with conservation projects, they can adverstise their businesses as environmentally friendly and potentially develop ecotourism activities.They can also get certification of agricultural practices that are sustainable and protect giant anteaters.	Landowners can either prevent or mitigate deforestation, fires, and poaching/ persecution of giant anteaters inside their properties	Both	Critical
	Rural workers and their families	Rural people can acquire knowledge about the wildlife that can be found in the properties where they live and/or work; or be benefited from ecotourism activities.	Rural people can poach and/ or persecute giant anteaters and can spread misconceptions about the species. They can also kill giant anteaters due to conflicts with domestic dogs. Human-provoked fires are also a threat to giant anteaters.	Negative	Low
	Teachers and children in rural and small urban schools	Teachers can acquire and pass knowledge to children	Teachers can reduce misconceptions about the species and children can influence their parents to change their behaviour	Positive	Medium
	Road users	Roadkills damage the road users vehicles and put their safety at risk. Understanding how to avoid roadkills of large animals can reduce personal cost to vehicles and promote conservation	By not driving cautiously, they increase the chance of of roadkill	Negative	High
	Road concessionaires and road public agencies	By implementing mitigation measures to prevent road accidents, they can	Roadkill monitoring	Positive	Critical

		improve the safety of road users and reduce operational costs	Implementation of mitigation measures		
	Federal Highway Police	Improve safety of road users and reduce operational costs	Road fiscalization and law enforcement	Positive	Medium
	Government / Politicians	Political visibility Self and public interest	Propose and approve laws to mitigate the main threats to giant anteaters (habitat protection, fire control, pesticide regulation, road mitigation measures, etc.)	Positive	Critical
	Universities	Resarch and education	Produce knowledge about the species and guide conservation actions	Positive	High
	NGOs	Conservation of wildlife	Conservation actions (e.g. monitoring of populations, dealing with stakeholders, etc.)	Positive	Critical

1.7 Context and background information that will affect the success of any conservation action for this species:

	Description	Barriers to conservation	Opportunities for conservation
Socio-cultural effects and cultural attitudes	It is a very appealing species for people in general, but it can be persecuted or killed for being seen as a threat to domestic dogs or for being associated with negative superstitions,with some people believing that it brings bad luck. It is poached for food in indigenous communities (Amazon) or "medicinal" use in rural areas (Caatinga)	Negative superstitions Poor law enforcement in rural areas against poaching and/or persecution	It could be used as a flagship species for conservation and help develop ecotourism in protected areas (e.g. National Parks) or rural areas (farms, like in the Pantanal)
Economic implications	It does not have any direct monetary value, but it provides important ecosystem services, being part of the Jaguar's (*Panthera onca*) diet and also controlling insect's populations (ants and termites) It can attract people for ecotourism activitites (mammal watching) Considering it is a large mammal, roadkill can cause serious economic impacts	Agriculture (cash crops) and linear infrastructure (i.e. roads) are the main threats to the conservation of the species, but are essential to the economical development in the Cerrado, which is a stronghold for populations of the giant anteater	Private road concessionaires are legally obliged to implement measures to prevent and mitigate road impacts. Cost-benefit analysis can convince the government to direct resources to implement conservation measures
Existing conservation measures	Anteatears and Highways Project (ICAS) focusing on roadkill in the Cerrado of Mato Grosso do Sul state Instituto Tamanduá working with all species of anteaters in Brazil Instituto Jurumi working with giant anteaters in Brasília National Forest TamanduASAS working with giant anteaters that are victim of roadkill in Minas Gerais	Lack of financial and human resources Political situation in Brazil is worrying, with funding for science increasingly at risk. Lack of collaboration between Conservation projects Challenge working on private lands when government is speaking against NGOs.	Anteaters and Highways is collaborating with TamanduASAS, by monitoring giant anteaters that were rescued and now are being released back into the wild The Brazilian government (ICMBio) developed a National Action Plan (2019-2024) for the conservation of the giant anteater, involving all NGOs currently working with the species
Administrative/ political set-up	The current government of Brazil's environmental policies actively work against environmental conservation. We are dealing with historic rates of deforestation in the Amazon, Pantanal and Cerrado, which are a consequence of lack of fiscalization and poor law enforcement.	Recent changes in the Brazilian Forest code may lead to more deforestation in private properties Road concessionaries and public agencies are not implementing effective mitigation measures for preventing roadkill	The giant anteater is an appealing species for the public in general. Roadkill has been receiving more attention by the media, which could help NGOs pressure the government and politicians for change.

		The current government agenda in Brazil is very much anti-science and environment.	
Local expertise and interest	Research conducted in universities (University of Sao Paulo, Federal University of Mato Grosso do Sul) NGOs working for the conservation of the species (listed above) Rural people (Landowners, rural workers) trained by NGOs and engaged in conservation actions	Lack of scholarships for students from Universities Lack of funding for NGOs Challenge to retain qualified staff in projects Rural people often have a negative view of conservationists and NGOs	The Cerrado is the second largest biome in the country and is also a biodiversity hotspot. It attracts many universities and research centres.
Resources	Resources for the conservation of the species often come from international Zoos and NGOs and may vary depending on multiple factors	Lack of local/regional /national resources for a long-term conservation program	Collaboration between NGOs can increase opportuniites for funding

2. ACTION PROGRAMME

This action programme was adapted from Brazil's National Action Plan for the conservation of the giant anteater (2019-2024).

Vision (30-50 years)	
Viable populations of giant anteaters throughout their original distribution	
Goal(s) (5-10 years)	
Understand and mitigate the main threats that affect the species persistence in the Brazilian Cerrado	
Objectives	**Prioritisation** *(low, medium, high or critical)*
Develop strategies for landscape conservation and management to maintain viable populations	*critical*
Decrease the impact of fire on the species	*high*
Reduce vehicle collisions with the species on highways and roads	*critical*
Reduce the loss of individuals as a result of poaching	*low*
Improve integrated management for conservation (ex situ and in situ), considering the genetic and health viability of the populations	*medium*
Reduce the loss of individuals through socio-cultural and economic conflicts	*low*
Expand knowledge of the presence and effects of pesticides and heavy metals on the species	*medium*
Expand scientific knowledge about natural history, ecology, health, genetics and conservation of populations in different biomes	*high*

Activities	Country / region	Priority *(low, medium, high or critical)*	Associated costs (currency)	Time scale	Responsible stakeholders	Indicators	Risks	Activity type
Objective 1: Develop strategies for landscape conservation and management to maintain viable populations								
Classify habitat suitability and identify key areas for the conservation of the species	Cerrado	Critical	Irrelevant	2019-2024	Universities, NGOs	Technical reports and scientific papers widely disseminated and results presented at events	Gaps of knowledge on the distribution of the species	Improving knowledge
Hold meetings to promote coordination between environmental agencies and the private sector, to encourage the creation of protected areas and the recovery of degraded areas, to promote the conservation and connectivity of populations	Cerrado (key areas)	critical	Irrelevant	2020-2024	Universities, NGOs	Documents indicating agreement and commitment between parts	Unfavorable political scenario Resistance from private sector	Land protection
Promote the awareness of different stakeholders regarding the importance of conservation and restoration of natural areas	Cerrado	critical	GBP8,000	2019-2024	NGOs, Educators	Number of education and awareness activities promoted and number of people involved in those activities.	Unfavorable political scenario Economical crisis	Education & Awareness

Objective 2: Decrease the impact of fire on the species								
Analyze, compile and disseminate technical information on fire management	Cerrado	high	Irrelevant	2019-2020	Universities, environmental agencies	List and/or number of people (or groups of people) that have received technical information on fire management	Lack of high quality data	Improving knowledge
Organize events and hold meetings to promote dialogue between researchers and NGOs focused on biodiversity conservation with rural producers and the rural community, aiming at the use of good practices in fire management	Cerrado	high	GBP1,500	2019-2024	Environmental agencies, NGOs	Number of events and meetings Documents indicating agreement and commitment between parts	Unfavorable political scenario Resistance from rural communities	Species management
Deliver courses and training on fire management for rural landowners and managers	Cerrado	high	GBP1,500	2019-2024	2019-2024	Conducted trainings	Human resources	Education & Awareness
Objective 3: Reduce vehicle collisions with the species on highways and roads								
Define roadkill hotspots for the giant anteater	Cerrado	critical	GBP5,000	2019-2020	Environmental agencies, Federal Police, NGOs, Universities	Maps, reports	Hotspots identified only for a few roads within the Cerrado	Threat mitigation
Define and propose mitigation measures	Cerrado	critical	GBP1,500	2019-2024	Environmental agencies, Federal Police, NGOs, Universities	Action Plans, meetings, manuals, guidelines	Mitigation measures are not implemented or not effective	Threat mitigation

Objective 4: Reduce the loss of individuals as a result of poaching								
Diagnose what type of poaching is affecting the species	Cerrado	low	GBP5,000	2019-2024	Universities, NGOs	Technical reports and scientific papers widely disseminated and results presented at events	Sensitive data	Improving knowledge
Make a diagnosis about the motivations and barriers (internal and external) of the actors involved in the poaching activity (buyers, poachers, fiscalization agents).	Cerrado	low	GBP5,000	2019-2024	Universities, NGOs	Technical reports and scientific papers widely disseminated and results presented at events	Sensitive data	Improving knowledge
Propose measures to minimize poaching activity	Cerrado (key areas)	low	GBP1,500	2022-2024	Universities, NGOs	Action Plan	Measures are not effective for changing behaviour	Threat mitigation
Objective 5: Improve integrated management for conservation (ex situ and in situ), considering the genetic and health viability of the populations								
Establish protocols for the genetic and demographic management of the captive population of giant anteaters	Brazil	medium	GBP3,000	2019-2024	Zoos, Universities	Studbook	Collaboration between Zoos	Species management
Establish (minimum) protocols for receiving, maintaining and disposing of rescued individuals and distribute to the environmental police, veterinary hospitals and other institutions that receive these animals.	Brazil	medium	GBP3,000	2019-2024	Zoos, Universities, NGOs	Protocols	Zoos not adopting minimum protocols	Species management

Objective 6: Reduce the loss of individuals through socio-cultural and economic conflicts								
Analyse scientific available data and conduct household socio-economic surveys in key communities within the Cerrado to identify and map economic and / or socio-cultural conflicts	Cerrado	low	GBP1,500	2019-2024	Universities, NGOs	Technical reports and scientific papers	Lack of data	Improving knowledge
Identify possible / potential mitigation measures for the conflicts identified and propose a coexistence manual.	Cerrado	low	GBP1,500	2019-2024	Universities, NGOs	Technical reports with mitigation measures, coexistence manual	Lack of human resources	Threat mitigation
Implement an environmental education and communication network with an emphasis on conflict resolution.	Cerrado	low	GBP1,500	2019-2024	Universities, NGOs, Educators	Network implemented and functional, reports with list of activities developed	Lack of human resources	Education & Awareness
Objective 7: Expand knowledge of the presence and effects of pesticides and heavy metals on the species								
Identify the presence of pesticides and heavy metals in wild giant anteaters	Cerrado	medium	GBP8,000	2019-2024	Zoos, Universities, NGOs	Georeferenced database; Biological samples;Techniical reports and scientific papers	Low concentrations may be hard to detect	Improving knowledge
Diagnose and monitor the presence of pesticides, heavy metals and health in captive giant anteaters	Cerrado	medium	GBP30,000	2019-2024	Zoos, Universities, NGOs	Database shared with the studbook containing reference values for the concentration of substances in animals over time	High cost	Improving knowledge

Objective 8: Expand scientific knowledge about natural history, ecology, health, genetics and conservation of populations in different biomes								
Direct resources and stimulate research projects in areas lacking information (i.e. outside protected areas, mainly in the north and south regions of the Cerrado)	Cerrado	high	Irrelevant	2019-2024	Environmental agencies, NGOs	Projects initiated	Lack of funding opportunities	Capacity building
Characterize the reproductive and social biology of the target species	Cerrado	high	GBP8,000	2019-2024	Zoos, Universities, NGOs	Scientific papers, thesis, dissertations	More time needed	Improving knowledge
Identify environmental factors that drive the current distribution of the species	Cerrado	high	Irrelevant	2019-2024	Universities, NGOs	Scientific papers, thesis, dissertations	Lack of ecological studies	Improving knowledge
Characterize the genetic variability of individuals throughout the species distribution	Cerrado	high	GBP30,000	2019-2024	Universities, Zoos	Scientific papers, thesis, dissertations	Lack of biological samples	Improving knowledge
Identify pathogens relevant to the health of the target species	Cerrado	high	GBP8,000	2019-2024	Universities, NGOs, Zoos	Scientific papers, thesis, dissertations	Lack of biological samples	Improving knowledge

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