Edentata 19 (2018): **35–41**
DOI: 10.2305/IUCN.CH.2018.EDENTATA-19-1.4.en
Electronic version: ISSN 1852-9208
Print version: ISSN 1413-4411
http://www.xenarthrans.org

IUCN/SSC Anteater, Sloth & Armadillo Specialist Group

SHORT COMMUNICATION

First reports of giant anteater (*Myrmecophaga tridactyla*) and greater naked-tailed armadillo (*Cabassous tatouay*) for the Iguaçu National Park, Paraná, Brazil, with notes on all xenarthran occurrences

Anne-Sophie Bertrand[A,B,1] & Amadeu M.V.M. Soares[A]

[A] Universidade de Aveiro, Biology Department and CESAM (Research Center in Marine and Environment), University of Aveiro, Campus de Santiago, Aveiro, 3810-193, Portugal. E-mail: annesophie.bertrand@gmail.com (ASB)

[B] Iguaçu National Park, Management and Conservation Department – Guest researcher, Avenida das Cataratas, BR-469, KM18, CEP 85857-970, Foz do Iguaçu, Paraná, Brazil

[1] Corresponding author

Abstract Four Xenarthra species appear on the list of mammals whose presence has been documented in the Iguaçu National Park (INP). We conducted the first long-term camera trap monitoring in the Iguaçu region, encompassing the park and its buffer zone. We confirmed the presence of the four Xenarthra species known to occur in the park, with the first photographic records of giant anteaters (*Myrmecophaga tridactyla*). We also detected the presence of the greater naked-tailed armadillo (*Cabassous tatouay*), which had not previously been reported for the park. Giant anteater sightings are described, and habits are discussed. Our data provide important additions to the existing knowledge on giant anteaters inhabiting INP, a key wildlife refuge in southern Brazil.

Keywords: armadillos, Atlantic forest, distribution, habitat preferences, photographic records

Primeiros registros documentados de *Myrmecophaga tridactyla* e *Cabassous tatouay* e notas sobre a ocorrência de xenartros do Parque Nacional do Iguaçu, Paraná, Brasil

Resumo Quatro espécies de xenartros constam na lista oficial de mamíferos cuja presença foi documentada no Parque Nacional do Iguaçu (PNI). Realizamos o primeiro monitoramento por armadilhas fotográficas de longo prazo na região Iguaçu, abrangendo o parque e sua zona de amortecimento. Confirmamos a presença das quatro espécies de xenartros que ocorrem no parque, com os primeiros registros fotográficos de tamanduá-bandeira (*Myrmecophaga tridactyla*). Detectamos também a presença do tatu-de-rabo-mole grande (*Cabassous tatouay*), que não constava na lista do parque. Os registros obtidos de tamanduá-bandeira são descritos e hábitos são discutidos. Nossos dados fornecem complementos importantes ao conhecimento existente sobre o tamanduá-bandeira ocorrendo no PNI, um importante refúgio silvestre do sudoeste do Brasil.

***Palavras-chave*:** distribuição, mata Atlântica, preferências de hábitat, registros fotográficos, tatus

The official list of non-flying mammal species for the Iguaçu National Park (INP) in southwestern Brazil includes 48 species, of which four are xenarthrans: the yellow armadillo (*Euphractus sexcinctus*), the nine-banded armadillo (*Dasypus novemcinctus*), the lesser anteater (*Tamandua tetradactyla*), and the giant anteater (*Myrmecophaga tridactyla*; Medri & Mourão, 2008). Species presence was confirmed by sightings, road kills, or through trichology (*i.e.*, big cats' scat content analysis; MMA, 1999). Regarding the latter, in the absence of other forms of evidence, microscopic hair analysis has been used as an identification technique, but its reliability has been questioned many times. Nowadays, microscopic

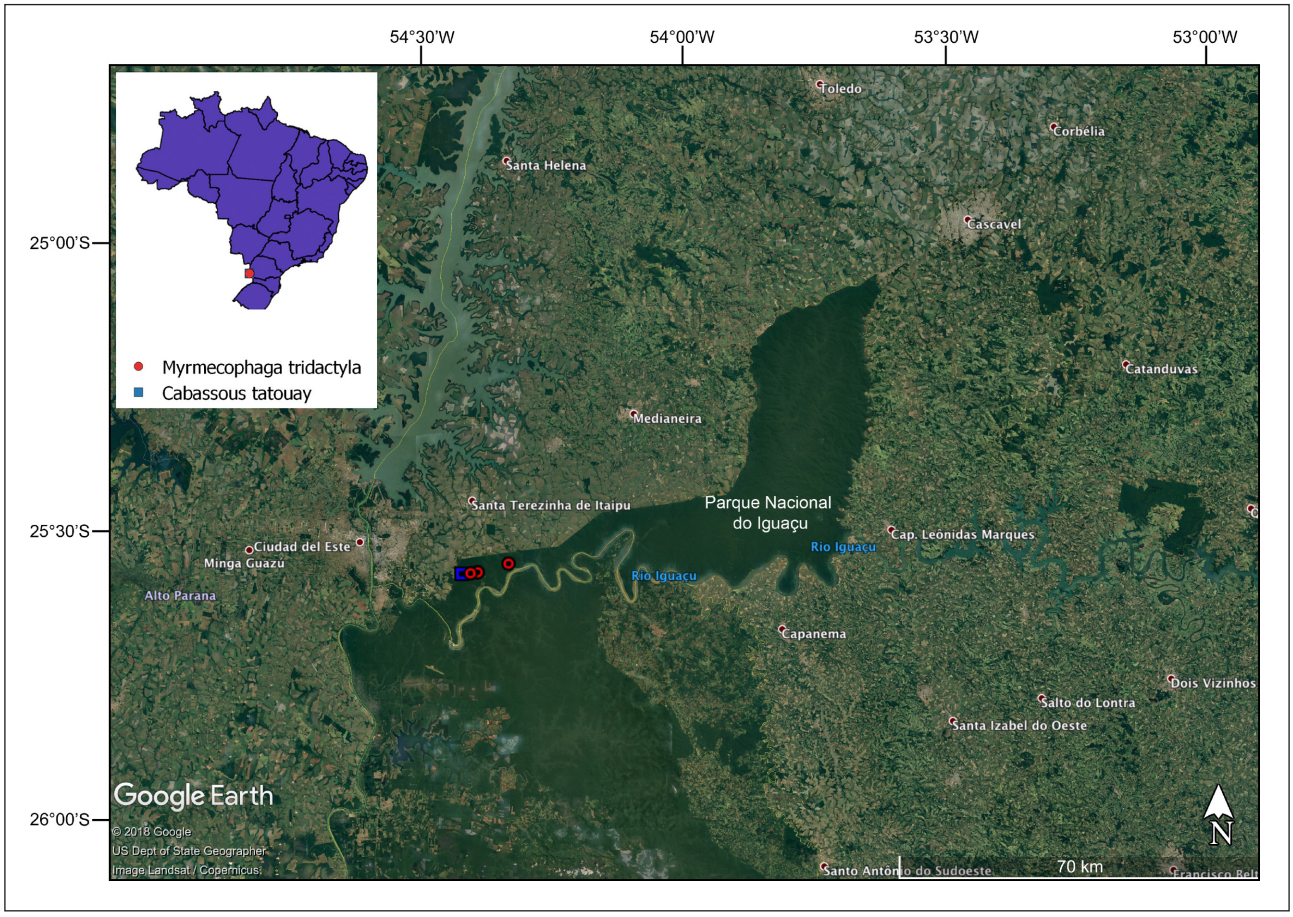

FIGURE 1. Locations of confirmed occurrence for two Xenarthra species, *Cabassous tatouay* (N=1, blue) and *Myrmecophaga tridactyla* (N=3, red), at Iguaçu National Park, Paraná, Brazil.

hair identification is not considered definitive when compared to DNA or photographic evidence (Foran *et al.*, 1997; Farrel *et al.*, 2000; Sahajpal *et al.*, 2009). Of course, DNA can be extracted from hair material and would help tremendously to turn a microscopic identification into conclusive evidence (Bertrand *et al.*, 2006).

All of the xenarthrans at INP, except the giant anteater, are listed as Least Concern in the IUCN Red List of Threatened Species (IUCN, 2017). However, much remains unknown regarding species dynamics, ecology, distribution, and trends (Abba *et al.*, 2014; Anacleto *et al.*, 2014; Loughry *et al.*, 2014; Miranda *et al.*, 2014a). The giant anteater is listed as Vulnerable based on local extinctions, road kills (Cáceres *et al.*, 2010), and habitat loss due to fire (Prada & Marinho-Filho, 2004) and human-oriented soil use (Miranda *et al.*, 2014b). In fact, it is listed in a threatened category everywhere it is known to occur (Miranda *et al.*, 2014b).

This short communication presents findings on xenarthrans extracted from a broader mammal inventory conducted in the INP region between September 2012 and October 2014. We used camera-traps to record over 30 different non-flying species of mammals. Here we provide the first photographic evidence confirming the presence of the giant anteater in INP, and also report the first record of the greater naked-tailed armadillo (*Cabassous tatouay*), which was not previously listed for the park. Finally, we discuss our findings on *M. tridactyla* and *C. tatouay*, provide brief notes on other recorded xenarthran species, and mention some important conservation issues.

Sixteen motion-triggered cameras were used to conduct a broad mammal survey in the region of the INP. We randomly placed the cameras within the INP as well as in its 5-km surrounding buffer zone. At each sampling station, we recorded latitude and longitude coordinates, as well as habitat type, microhabitat, canopy closure, and soil type. Habitat type and microhabitat were identified *in loco*, canopy closure was calculated using a quadrant, and soil type was identified using existing classification map (Ricobom & Skiba, 2001). Rapidfire PC900™ cameras (Reconyx, Holmen, WI, USA) automatically recorded air temperature, date, and time while taking 15 pictures in near-video sequences. Cameras were set in bursting mode, taking one photograph per second until the animal left the detection zone.

Sampling effort consisted of 6,190 sampling days in 193 different locations, covering 80 km² of the westernmost section of the INP (N=84 sampling stations) and its buffer zone (N=109), from São Miguel do Iguaçu to Foz do Iguaçu (**Fig. 1**). This is the first long-term monitoring in the region, covering 755 consecutive days, and totaling 247,693 photographic records. Each sampling location was monitored for 33 days on average. Three of our 16 cameras were stolen, and possibly destroyed, by fishermen and poachers, who represent one of the main pressures on giant anteater populations (Miranda *et al.*, 2014b; Quiroga *et al.*, 2016).

Of 7,681 individual animal records, 540 (7.0%) were of xenarthrans, accounting for 6.3% of INP records (N=216) and 14.9% in the buffer zone (N=324). With 97.4% of all xenarthran records (N=526), the nine-banded armadillo was the species most commonly observed; it was found equally often inside and outside the INP (Bertrand, 2016). In order to fully characterize the habitat gradient offered by the Iguaçu region, we installed our cameras in the widest variety of natural habitats. Thus, the predominance of the nine-banded armadillo is likely due to the fact that it is the most common armadillo species locally, rather than an artifact of a selective sampling procedure. The lesser anteater (1.1%, N=6) was found more times in unprotected forest remnants than inside the INP (Bertrand, 2016). Our remaining records consisted of four yellow armadillos, three giant anteaters (0.56%; **Fig. 2**), and one greater naked-tailed armadillo (**Fig. 3**). These last two species were solely found within the INP boundaries, whereas the yellow armadillo was only found in the forest thickets of the park buffer zone, suggesting that habitat differences may dictate species distribution, which in turn may reflect sensitivity to habitat alterations (Abba & Superina, 2010). **Table 1** presents a detailed description, including date, time, weather, soil type, and habitat features, of the records obtained for giant and lesser anteaters, yellow armadillos, and the greater naked-tailed armadillo. The time of day when the three giant anteater photographs were taken is consistent with the timing of activity cycles reported by Shaw *et al.* (1987).

Confusion over the taxonomic identification of the greater naked-tailed armadillo has made its conservation status and distribution uncertain (González & Abba, 2014). Currently, this species is listed as Least Concern by the IUCN, primarily because it is thought to have a wide distribution and to be relatively tolerant of habitat modification, being found in agricultural lands and secondary forests. In this study, the animal we observed was found on the edge of an illegal salt lick within the park boundary, where human-related pressures abound. Nationally, *C. tatouay* is known to occur in the southern and eastern portions of Brazil (Abba & Superina, 2010), which includes our study site. As we only collected one record, our intention here is merely to report the presence of the species in one of the most important conservation areas in southwestern Brazil, rather than extrapolate about its potential habitat preferences or distribution. Nonetheless, habitat information is provided for this record in **Table 1**.

Scientists have shown considerable interest in charismatic giant anteaters; hence, there are more data available on this species as compared with many other xenarthrans (Miranda *et al.*, 2014a). They appear to select different habitat types according to temperature; such thermoregulatory sensitivity may be linked with the fact that they feed exclusively on low-caloric foods (*i.e.*, ants and termites; McNab, 2000). During colder days, giant anteaters can be seen sun bathing in open areas, whereas they rest in forest shade on hotter days (Medri, 2002; Sampaio *et al.*, 2006). They also have

Figure 2. Near-sequence video of one of the three photographic records of a giant anteater (*Myrmecophaga tridactyla*) in the Iguaçu National Park, Paraná, Brazil, on 31 March 2014.

been observed bathing in ponds in order to regulate their body temperature (and/or avoid bothersome flies) on hot days in Bolivia (Emmons *et al.*, 2004). In one of our three photographic records, the animal was indeed on the edge of a river within the INP early at night on a hot day (**Table 1**). While this corroborates what Sampaio *et al.* (2006) found based on the monitoring of 11 individuals in the Brazilian Pantanal, the bathing habits of giant anteaters still puzzle ecologists. For example, Emmons *et al.* (2004) reported individuals also bathing in the middle of cool nights, and during the dry season, a time when they are unlikely to be bothered by flies. Unfortunately, our data do not allow any insights on the matter.

In Venezuela and Argentina, giant anteaters were exclusively nocturnal during the hot season (Shaw *et al.*, 1987; Di Blanco *et al.*, 2015). In the Brazilian Cerrado, all xenarthrans except the yellow armadillo usually display nocturnal habits (Zimbres *et al.*, 2013). While nearly all of our records of xenarthrans were indeed made between 19:00 hr and 03:00 hr, two of the three giant anteater records occurred during the day (**Table 1**). Diurnal activity has been reported by others (Shaw *et al.*, 1987; Sampaio *et al.*, 2006), with activity occurring during the day when temperatures are mild, and later in the evening on hotter days.

Habitat preferences remain unclear as giant anteaters use open and forested lands in unknown proportions (*e.g.*, Medri & Mourão, 2005). Sampaio *et al.* (2006) demonstrated that, while active, habitat choice by giant anteaters is mainly related to food/prey availability. In a study conducted in Serra da Canastra in the Brazilian Cerrado (Minas Gerais; Shaw *et al.*, 1987), individuals preferred scrublands over other habitat types. However, some individuals had none of this common habitat type in their home range. Giant anteaters also favored riparian forests, which may be rich in termites and ants (Reis & Cancello, 2007; Brown *et al.*, 2009). In our study, all three records were in forest and riparian habitats (**Table 1**).

The limits of giant anteaters' distribution range in South America are also periodically altered by

Figure 3. Photographic record of a greater naked-tailed armadillo (*Cabassous tatouay*) on 3 May 2014 in the Iguaçu National Park, Paraná, Brazil.

TABLE 1. Detailed description of the photographic records of Xenarthra species obtained at Iguaçu National Park and its surrounding buffer zone, with the exception of nine-banded armadillos. **C.T.:** *Cabassous tatouay*; **E.S.:** *Euphractus sexcinctus*; **M.T.:** *Myrmecophaga tridactyla*; **T.T.:** *Tamandua tetradactyla*; **R.H:** relative humidity; soil types: **NVEF2:** rhodic paleudalf; **LVEF1:** typic haplorthox; **GX1:** epiaquic haplustult; **LOC:** location; **P:** park; **B:** buffer zone.

Species	Coordinates	Date	Time	Habitat	Microhabitat	Canopy (%)	Soil type	Precipitation (mm)	Temperature (°C)	R.H.	Loc
C.t.	25°34'11"S, 54°25'11"W	03/05/2014	02:08	Subtropical rainforest	Alluvial	80	NVef2	0.0	26.3	74.6	P
M.t.	25°33'08"S, 54°19'49"W	04/06/2013	16:22	Subtropical rainforest	Palm trees	80	NVef2	0.0	17.4	90.5	P
M.t.	25°34'02"S, 54°23'21"W	31/03/2014	18:50	Tropical rainforest	Riparian	95	LVef1	29.6	23.8	87.6	P
M.t.	25°34'08"S, 54°24'10"W	24/04/2014	11:20	Tropical rainforest	Palm trees	90	LVef1	0.0	19.5	85.0	P
T.t.	25°37'09"S, 54°29'18"W	07/06/2013	05:56	Subtropical rainforest	Alluvial	90	NVef2	0.0	18.3	91.8	B
T.t.	25°31'35"S, 54°20'05"W	03/07/2013	1:29	Subtropical rainforest	Alluvial	95	GX1	0.0	18.6	82.8	B
T.t.	25°29'25"S, 54°21'26"W	01/11/2013	0:44	Subtropical rainforest	Bamboo	100	NVef2	0.0	26.9	64.9	B
T.t.	25°37'07"S, 54°29'24"W	24/01/2014	0:31	Subtropical rainforest	Riparian	90	NVef2	0.0	29.4	70.4	B
T.t.	25°35'07"S, 54°25'05"W	10/06/2014	2:58	Tropical rainforest	Palm trees	85	LVef1	0.0	17.7	89.0	P
T.t.	25°38'00"S, 54°26'41"W	03/09/2014	23:23	Tropical rainforest	Alluvial	100	LVef1	0.0	25.4	71.9	P
E.s.	25°31'32"S, 54°20'01"W	08/06/2013	22:29	Subtropical rainforest	Alluvial	95	GX1	0.0	18.7	82.9	B
E.s.	25°31'32"S, 54°20'01"W	29/06/2013	1:41	Subtropical rainforest	Alluvial	95	GX1	8.2	21.0	91.2	B
E.s.	25°29'24"S, 54°21'20"W	05/12/2013	0:14	Subtropical rainforest	*Dicksonia* ferns	95	NVef2	23.0	18.2	78.1	B
E.s.	25°33'25"S, 54°24'46"W	09/04/2014	2:05	Subtropical rainforest	Alluvial	70	NVef2	65.4	23.5	91.2	B

sporadic sightings or roadkills. In Honduras, the species was thought to be extirpated in the 1990s but few sightings have recently been reported (McCain, 2001; Reyes *et al.*, 2010). One sighting was also reported in Costa Rica in 1989 (Timm *et al.*, 1989), and another individual was killed by a hunter in Nicaragua (Koster, 2008), all suggesting extension or maintenance of their current distribution.

Much still needs to be understood about the behavior of giant anteaters but recent studies indicate that this species can show a high capacity to respond to habitat disturbance. In the Brazilian state of Paraná they are able to inhabit pine plantations, where they feed on leaf-cutter ants (Braga *et al.*, 2014). In the Cerrado, they have shown resilience to human-caused habitat alterations, such as fire and habitat loss (Shaw *et al.*, 1987), and remained present even when most natural habitat had been converted to soy crops (Klink & Moreira, 2002). Additionally, a high survival rate was observed during a reintroduction project in the Iberá Nature Reserve, Corrientes province, Argentina. Between 2007 and 2013, 31 giant anteaters were released and 18 were radiotracked, providing information on habitat selection and indicating factors that could hamper long-term survival (Di Blanco *et al.*, 2015). The animals preferred forest habitats where they almost exclusively rested. Deforestation and cattle management seemed to be the main threats to their survival. Only time will tell whether human-caused landscape transformation indeed negatively impacts giant anteaters (Superina *et al.*, 2010). Regardless, the species has proved able to cope in unexpected ways with human-imposed pressures and contexts (Young *et al.*, 2003; Braga *et al.*, 2014).

Our photographic confirmation of giant anteaters in the INP is an important addition to the existing knowledge on the species. The INP is the only wildlife refuge in the entire region and is therefore of invaluable worth in terms of biodiversity and conservation (Tabarelli *et al.*, 2005). Considering the conservation significance of the species and the lack of information about it in such an important part of its range, more research would help in piecing together recent occurrence reports and behavioral descriptions from different locations in South and Central America (Koster, 2008; Pérez Jimeno & Amaya, 2009; Hack & Krüger, 2013; Braga *et al.*, 2014). Consequently, the most important goal of this paper is to inform the scientific community

about the presence of both the giant anteater and the greater naked-tailed armadillo in this part of their range, and thus serve as an invitation for further research.

Acknowledgements

This project was funded by the University of Aveiro (Portugal, grant number BD/UI88/5538/2011) and supported by the Bird Park (Brazil).

References

Abba, A.M. & M. Superina. 2010. The 2009–2010 armadillo Red List assessment. Edentata 11: 135–184. https://doi.org/10.5537/020.011.0203

Abba, A.M., E. Lima & M. Superina. 2014. *Euphractus sexcinctus*. The IUCN Red List of Threatened Species 2014: e.T8306A47441708. <http://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T8306A47441708.en>. Downloaded on 17 April 2015.

Anacleto, T.C.S., P. Smith, A.M. Abba & M. Superina. 2014. *Dasypus septemcinctus*. The IUCN Red List of Threatened Species 2014: e.T6293A47441509. <http://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T6293A47441509.en>. Downloaded on 17 April 2015.

Bertrand, A.-S. 2016. Characterization and conservation of the Iguaçu National Park, Paraná, Brazil. PhD Thesis, University of Aveiro, Aveiro. 167 pp.

Bertrand, A.-S., S. Kenn, D. Gallant, E. Tremblay, L. Vasseur & R. Wissink. 2006. MtDNA analyses on hair samples confirm cougar, *Puma concolor*, presence in Southern New Brunswick, Eastern Canada. Canadian Field Naturalist 120: 438–442. http://dx.doi.org/10.22621/cfn.v120i4.352

Braga, F.G., N.J. Souza, A.C. Batista & P.P.S. de Lima. 2014. Consumo de formigas cortadeiras por tamanduá-bandeira *Myrmecophaga tridactyla* (Linnaeus, 1758) em plantios de *Pinus* spp. no Paraná, Brasil. Edentata 15: 1–8. https://doi.org/10.5537/020.015.0101

Brown, G.G., W. Maschio & L.C.M. Froufe. 2009. Macrofauna do solo em sistemas agroflorestais e Mata Atlântica em regeneração nos municípios de Barra do Turvo, SP, e Adrianópolis, PR. Embrapa Florestas, Colombo. 51 pp.

Cáceres, N.C., W. Hannibal, D.R. Freitas, E.L. Silva, C. Roman & J. Casella. 2010. Mammal occurrence and roadkill in two adjacent ecoregions (Atlantic Forest and Cerrado) in southwestern Brazil. Zoologia 27: 709–717. http://dx.doi.org/10.1590/S1984-46702010000500007

Di Blanco, Y.E., I.J. Pérez & M.S. Di Bitetti. 2015. Habitat selection in reintroduced giant anteaters: the critical role of conservation areas. Journal of Mammalogy 96: 1024–1035. https://doi.org/10.1093/jmammal/gyv107

Emmons, L.H., R.P. Flores, S.A. Alpirre & M.J. Swarner. 2004. Bathing behavior of giant anteaters (*Myrmecophaga tridactyla*). Edentata 6: 41–43. https://doi.org/10.1896/1413-4411.6.1.41

Farrel, L.E., J. Roman & M.E. Sunquist. 2000. Dietary separation of sympatric carnivores identified by molecular analysis of scats. Molecular Ecology 9: 1583–1590. http://dx.doi.org/10.1046/j.1365-294x.2000.01037.x

Foran, D.R., S.C. Minta & K.S. Heinemeyer. 1997. DNA-based analysis of hair to identify species and individuals for population research and monitoring. Wildlife Society Bulletin 25: 840–847.

González, E. & A.M. Abba. 2014. *Cabassous tatouay*. The IUCN Red List of Threatened Species 2014: e.T3414A47437737. <http://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T3414A47437737.en>. Downloaded on 17 April 2015.

Hack, R.O.E. & F.A. Krüger. 2013. Novos registros de *Myrmecophaga tridactyla* (Mammalia: Xenarthra) no estado do Paraná, Brasil. Edentata 14: 70–73. https://doi.org/10.5537/020.014.0109

IUCN, 2017. The IUCN Red List of Threatened Species. Version 2017-3. <http://www.iucnredlist.org>. Downloaded on 5 December 2017.

Klink, C.A. & A.G. Moreira. 2002. Past and current human occupation and land use. Pp. 69–90 in: The Cerrados of Brazil: ecology and natural history of a Neotropical savanna (P.S. Oliveira & R.J. Marquis, eds.). Columbia University Press, New York. http://dx.doi.org/10.7312/oliv12042

Koster, J.M. 2008. Giant anteaters (*Myrmecophaga tridactyla*) killed by hunters with dogs in the Bosawas biosphere reserve, Nicaragua. The Southwestern Naturalist 53: 414–416. https://doi.org/10.1894/PS-38.1

Loughry, W.J., C.M. McDonough & A.M. Abba. 2014. *Dasypus novemcinctus*. The IUCN Red List of Threatened Species 2014: e.T6290A47440785. <http://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T6290A47440785.en>. Downloaded on 17 April 2015.

McCain, C.M. 2001. First evidence of the giant anteater (*Myrmecophaga tridactyla*) in Honduras. Southwestern Naturalist 46: 252–254. http://dx.doi.org/10.2307/3672542

McNab, B.K. 2000. Metabolic scaling: energy constraints on carnivore diet. Nature 407: 584. http://dx.doi.org/10.1038/35036695

Medri, I.M. 2002. Área de vida e uso de hábitat de tamanduá-bandeira – *Myrmecophaga tridactyla* Linnaeus, 1758 – nas Fazendas Nhumirim e Porto Alegre, Pantanal da Nhecolândia, MS. MSc thesis, Universidade Federal de Mato Grosso do Sul, Campo Grande.

Medri, I.M. & G. Mourão. 2005. Home range of giant anteaters (*Myrmecophaga tridactyla*) in the Pantanal wetland, Brazil. Journal of Zoology 266: 365–375. http://dx.doi.org/10.1017/S0952836905007004

Medri, I.M. & G. Mourão. 2008. *Myrmecophaga tridactyla* Linnaeus, 1758. Pp. 711–713 in: Livro Vermelho da fauna brasileira ameaçada de extinção. Vol. II

(A.B.M. Machado, G.M. Drummond & A.P. Paglia, eds.). Ministério do Meio Ambiente, Brasília. 1420 pp.

Miranda, F., A. Fallabrino, M.C. Arteaga, D.G. Tirira, D.A. Meritt & M. Superina. 2014a. *Tamandua tetradactyla*. The IUCN Red List of Threatened Species 2014: e.T21350A47442916. <http://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T21350A47442916.en>. Downloaded on 17 April 2015.

Miranda, F., A. Bertassoni & A.M. Abba. 2014b. *Myrmecophaga tridactyla*. The IUCN Red List of Threatened Species 2014: e.T14224A47441961. <http://dx.doi.org/10.2305/IUCN.UK.2014-1.RLTS.T14224A47441961.en>. Downloaded on 17 April 2015.

MMA – Ministério do Meio Ambiente do Brasil. 1999. Plano de Manejo. Parque Nacional do Iguaçu. <http://www.cataratasdoiguacu.com.br/parque-nacional-do-iguacu/plano-de-manejo>. Downloaded on 15 September 2016.

Pérez Jimeno, G. & L.L. Amaya. 2009. Contribución al conocimiento de la distribución del oso hormiguero gigante (*Myrmecophaga tridactyla*) en Argentina. Edentata 8–10: 8–12. https://doi.org/10.1896/020.010.0106

Prada, M. & J. Marinho-Filho. 2004. Effects of fire on the abundance of Xenarthrans in Mato Grosso, Brazil. Austral Ecology 29: 568–573. http://dx.doi.org/10.1111/j.1442-9993.2004.01391.x

Quiroga, V.A., A.J. Noss, G.I. Boaglio & M.S. Di Bitetti. 2016. Local and continental determinants of giant anteater (*Myrmecophaga tridactyla*) abundance: biome, human and jaguar roles in population regulation. Mammalian Biology 81: 274–280. http://dx.doi.org/10.1016/j.mambio.2016.03.002

Reis, Y.T. & E.M. Cancello. 2007. Riqueza de cupins (Insecta, Isoptera) em áreas de Mata Atlântica primária e secundária do sudeste da Bahia. Iheringia 97: 229–234. http://dx.doi.org/10.1590/S0073-47212007000300001

Reyes, H.O.P., W.A. Matamoros & S.L. Glowinski. Distribution and conservation status of the giant anteater (*Myrmecophaga tridactyla*) in Honduras. The Southwestern Naturalist 55: 119–121. https://doi.org/10.1894/CLG-25.1

Ricobom, A.E. & M.M. Skiba. 2001. Mapa das classes de solos do Parque Nacional do Iguaçu e entorno. P. 130 in: O parque do Iguaçu como unidade de conservação da natureza no âmbito do Mercosul: os problemas decorrentes da degradação ambiental (A.E. Ricobom, ed.). MSc thesis, Federal University of Paraná, Curitiba. 226 pp.

Sahajpal, V., S.P. Goyal, K. Singh & V. Thakur. 2009. Dealing wildlife offences in India: role of the hair as physical evidence. International Journal of Trichology 1: 18–26. http://dx.doi.org/10.4103/0974-7753.51928

Sampaio, C.C., P. Camilo-Alves & G.M. Mourão. 2006. Responses of a specialized insectivorous mammal (*Myrmecophaga tridactyla*) to variation in ambient temperature. Biotropica 38: 52–56. http://dx.doi.org/10.1111/j.1744-7429.2006.00106.x

Shaw, J.H., J. Machado-Neto & T.C. Carter. 1987. Behavior of free-living giant anteaters (*Myrmecophaga tridactyla*). Biotropica 19: 255–259. http://dx.doi.org/10.2307/2388344

Superina, M., F.R. Miranda & A.M. Abba. 2010. The 2010 anteater Red List assessment. Edentata 11: 96–114. https://doi.org/10.5537/020.011.0201

Tabarelli, M., L.P. Pinto, J.M.C. Silva, M.M. Hirota & L.C. Bedê. 2005. Desafios e oportunidades para a conservação da biodiversidade na Mata Atlântica brasileira. Megadiversidade 1: 132–138.

Timm, R.M., D.E. Wilson, B.L. Clauson, R.K. La Val & C.S. Vaughan. 1989. Mammals of the La Selva-Braulio Carrillo complex, Costa Rica. North American Fauna 75: 1–62. https://doi.org/10.3996/nafa.75.0001

Young, R.J., C.M. Coelho & D.R. Wieloch. 2003. A note on the climbing abilities of giant anteaters, *Myrmecophaga tridactyla* (Xenarthra, Myrmecophaga). Boletim do Museo de Biologia Mello Leitão 15: 41–43.

Zimbres, B. *et al.* 2013. The impact of habitat fragmentation on the ecology of xenarthrans (Mammalia) in the Brazilian Cerrado. Landscape Ecology 28: 259–269. http://dx.doi.org/10.1007/s10980-012-9832-2

Received: 19 April 2015; Accepted: 24 February 2018