

Catalog of medium and large-sized mammals from the state of Pará, Brazil, housed in the *Museu de Zoologia da Universidade de São Paulo* (MZUSP)

Catálogo de médios e grandes mamíferos do estado do Pará, Brasil, depositados no Museu de Zoologia da Universidade de São Paulo (MZUSP)

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Abstract: The Mammal Collection of the *Museu de Zoologia da Universidade de São Paulo* (MZUSP) is one of the largest collections of Neotropical mammals in Latin America, housing about 50,000 specimens. One of the most representative series in this collection comes from the Brazilian Amazon Biome. Among the Brazilian Amazon states, Pará was target of several scientific expeditions led by MZUSP researchers, becoming one of the most representative in terms of number of specimens and species richness in the collection. Here we present a list of the medium and large-sized mammal specimens from Pará state housed in the MZUSP, with comments about taxonomy, the conservation status of the species and other associated information. We found 1,910 specimens representing 79 species and nine orders of medium and large-sized mammals from Pará. Among these, 24 species are currently classified as threatened in Brazil. Furthermore, we found some areas with higher concentration of collection localities, such as at the banks of the lower Rio Tapajós and in the northeastern region of the state. The present catalog plays an important role in presenting the currently known biodiversity of medium and large-sized mammals of Pará, also acting as a primary source for systematics, ecological, conservation and biogeographic studies.

Keywords: Amazon. List of specimens. Mammalogy. Scientific collection.

Resumo: A Coleção de Mamíferos do Museu de Zoologia da Universidade de São Paulo (MZUSP) é uma das maiores coleções de mamíferos neotropicais da América Latina, abrigando cerca de 50.000 espécimes. Uma de suas séries mais representativas é proveniente da Amazônia brasileira. Entre os estados amazônicos brasileiros, o Pará foi alvo de inúmeras expedições científicas conduzidas por pesquisadores do MZUSP, tornando-se um dos mais representativos em termos de quantidade de espécimes e riqueza de espécies na coleção. Aqui, apresentamos uma lista de mamíferos de médio e grande porte do Pará depositados no MZUSP, com comentários sobre taxonomia, estado de conservação da espécie e outras informações associadas. Listamos 1.910 espécimes, representando 79 espécies e nove ordens de mamíferos de médio e grande porte do Pará. Entre estes, 24 espécies estão atualmente ameaçadas no Brasil. Além disso, observamos algumas áreas com maior concentração de coletas, tais como as próximas às margens do baixo rio Tapajós e na região nordeste do estado. O presente catálogo desempenha papel importante em apresentar a biodiversidade atualmente conhecida de mamíferos de médio e grande porte do Pará, também atuando como uma fonte primária para estudos sistemáticos, ecológicos, conservacionistas e biogeográficos.

Palavras-chave: Amazônia. Lista de espécimes. Mastozoologia. Coleção científica.

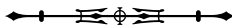
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INTRODUCTION

The Mammal Collection of the *Museu de Zoologia da Universidade de São Paulo* (MZUSP) currently houses about 50,000 specimens preserved as dry skins, skulls and postcranial skeletons, and in liquid, including whole specimens in alcohol. This collection is one of the largest collections of Neotropical mammals in Brazil and Latin America (de Vivo *et al.*, 2011; Bezerra, 2012). The MZUSP does not have concentrated sampling in certain Brazilian regions or biomes but has a broad geographic coverage that includes every biome and most Brazilian states (Percequillo, 2005). One of the most representative series in MZUSP comes from the Brazilian Amazon biome. Since its beginning in the late nineteenth and early twentieth centuries, the MZUSP has sent professional specimen collectors to the Amazon (Pinto, O., 1945).

Among the Brazilian states that encompass the Amazon, Pará is one of the most representative in number of specimens housed in MZUSP. Located in northern Brazil, the Pará state is the second-largest federal unity of the country, with an area of 1,245,759 km², representing 14% of the Brazilian territory (IBGE, 2018). This state encompasses five areas of endemism: Belém, Guiana, Rondônia, Tapajós, and Xingu (Silva, S. *et al.*, 2019, fig. 1). The predominant vegetation is composed of ombrophilous forest, with areas of dense and open forests, and transitional areas with the Cerrado in the southern region of the state (IBGE, 2004). According to Köppen's classification, the climate of Pará state is mainly monsoonal and some areas do not have a dry season (Alvarez *et al.*, 2013).

Localities within Pará were explored by several MZUSP scientific expeditions. The region was explored by Ernst Garbe (in the early 1920s), Alonso Olalla (in the 1930s and 1940s), and the "Expedição Permanente à Amazônia" project (EPA; 1967-1987), coordinated by Paulo Emílio Vanzolini (Pinto, O., 1945; Rodrigues *et al.*, 2000). Contrastingly, in the first two decades of the 21st century, much of the mammal material from Pará state was not derived from collection expeditions aimed to increase the

collection, but rather from environmental impact studies for large enterprises such as railways, highways, mining, and hydroelectric power plants (J. Gualda-Barros, personal communication). In such cases, there is a bias towards the collection of small mammals, especially rodents, bats, and marsupials. In environmental impact studies, the collection of medium and large-sized mammals is mostly occasional, derived from dead individuals found in the wild or roadkilled (F. O. Nascimento, personal observation).

Due to the large collection expeditions carried out in the last century, and few other occasional contributions, the MZUSP is one of the most representative collections in terms of the number of specimens and species from Pará. Here, we present a complete list of the medium and large-sized mammal specimens from Pará state housed in the MZUSP, commenting about the taxonomy, conservation status of the species and other noteworthy associated information.

MATERIAL AND METHODS

We surveyed and listed all specimens from Pará state, Brazil, housed in the MZUSP, including both wild and domestic species. For each specimen, we catalog the preserved parts such as skin, skull and/or skeleton. We transcribed the information on the species name, collection locality and sex present on the specimens labels as well as the handwritten, typed and digitized specimens catalogs held in the MZUSP. Furthermore, we reidentified all specimens.

We consider species belonging to the orders Cingulata, Pilosa, Sirenia, Carnivora, Artiodactyla, Perissodactyla, and Primates as medium and large-sized mammals, as well as some conspicuous and larger species of the orders Didelphimorphia (genera *Chironectes* Illiger, 1811, *Didelphis* Linnaeus, 1758, *Metachirus* Burmeister, 1854, and *Philander* Brisson, 1762), Lagomorpha (genus *Sylvilagus* Gray, 1867) and Rodentia (genera *Hydrochoerus* Brisson, 1762, *Cuniculus* Brisson, 1762, *Dasyprocta* Illiger, 1811, *Myoprocta* Thomas, 1903, and *Coendou* Lacépède, 1799). For cetaceans, we included only coastal and

freshwater species (genera *Inia* d'Orbigny, 1834 and *Sotalia* Gray, 1866). The taxonomy of the species follows the latest comprehensive revisions published for each taxon:

(a) Stein & Patton (2008), Cerqueira & Tribe (2008), Patton & Silva (2008), Gardner & Dagosto (2008), Brandão *et al.* (2015), and Voss *et al.* (2018, 2019) for the large species of didelphids (*Chironectes*, *Didelphis*, *Metachirus*, and *Philander*);

(b) Wetzel *et al.* (2008) and Gardner (2008) for the orders Cingulata and Pilosa, respectively, except in the following cases: the armadillos are classified in the families Dasypodidae and Chlamyphoridae (Delsuc *et al.*, 2016; Gibb *et al.*, 2016); the taxonomic arrangements for long-nosed armadillos (*Dasypus* Linnaeus, 1758), proposed by Feijó & Cordeiro-Estrela (2016) and Feijó *et al.* (2018), and for silky anteaters (*Cyclopes* Gray, 1821), proposed by Miranda *et al.* (2017); the use of the name Choloepodidae instead of Megalonychidae for living two-toed sloths (*Choloepus* Illiger, 1811), as proposed by Delsuc *et al.* (2019);

(c) Shoshani (2005) and Grubb (2005a) for Sirenia and Perissodactyla, respectively;

(d) Wozencraft (2005) for Carnivora, except for Felidae, which we follow Segura *et al.* (2013) and Kitchener *et al.* (2017) in using *Herpailurus* Severtzov, 1858 as the generic name for the jaguarundi, and Nascimento & Feijó (2017) for the taxonomy of the *Leopardus tigrinus* (Schreber, 1775) species group;

(e) Grubb (2005b) for Artiodactyla, except for Cervidae, which we adopted the arrangement proposed by Duarte & González (2010), and for Tayassuidae (Acosta *et al.*, 2020). Moreover, we keep the name Artiodactyla for the clade containing terrestrial artiodactyls and cetaceans, following Asher & Helgen (2010). For the taxonomy of cetacean species, we follow Silva, V. & Martin (2014) for *Inia*, and Caballero *et al.* (2007, 2008, 2010) for *Sotalia*;

(f) Mittermeier *et al.* (2013) for Primates, with the following updates: Garbino & Martins-Junior (2018) for the genus-group taxa of callitrichines; Silva Jr. (2001), Feijó & Langguth (2013), Garbino (2015), Gutiérrez & Marinho-

Filho (2017), and Brandão *et al.* (2019) for the usage of *Cebus* Erxleben, 1777 and *Sapajus* Kerr, 1792 as subgenera of *Cebus*; Serrano-Villavicencio *et al.* (2017), Gutiérrez & Marinho-Filho (2017), Garbino & Aquino (2018), and Brandão *et al.* (2019) keeping *Callicebus* Thomas, 1903 for all titis and *Plecturocebus* Byrne, Rylands, Carneiro, Lynch-Alfaro, Bertuol, da Silva, Messias, Groves, Mittermeier, Farias, Hrbek, Schneider, Sampaio & Boubli, 2016 as its subgenus (contra Byrne *et al.*, 2016); Mercês *et al.* (2015) for the eastern Amazonian populations of *Saimiri* Voigt, 1831; and Serrano-Villavicencio *et al.* (2019) and Hershkovitz (1987) for the saki taxa (*Pithecia* spp.) from Pará state (contra Marsh, 2014). See the contents of each primate species for more details on taxonomic issues;

(g) Ruedas (2017) and Ruedas *et al.* (2017) for *Sylvilagus* Gray, 1867;

(h) For rodents, we have adopted the taxonomic arrangements proposed by Dunnum (2015) for *Hydrochoerus*, Patton (2015) for *Cuniculus*, Patton & Emmons (2015) for *Dasyprocta* and *Myoprocta*, and Voss (2015) for *Coendou*.

We have included the conservation status of species based on the most recent assessments by the Instituto Chico Mendes de Conservação da Biodiversidade – Ministério do Meio Ambiente do Brasil (ICMBio, 2018) and the International Union for Nature Conservation (IUCN, 2019). The conservation status categories and their respective acronyms used here are: Least Concern (LC), Near Threatened (NT), Vulnerable (VU), Endangered (EN), Critically Endangered (CR), and Data Deficient (DD). We use Not Applicable (N/A) for taxa not identified at the species level or for domestic forms in a feral state, in the same manner as Brandão *et al.* (2019).

The geographical coordinates of the collection localities were obtained from gazetteers (Paynter Jr. & Traylor Jr., 1991; Vanzolini, 1992) and the MZUSP localities index, elaborated by Paulo Emílio Vanzolini (unpublished data). All localities and their geographical coordinates are presented in the gazetteer available in the Appendix 1. Additionally, a map

was elaborated with inclusion of the collection localities of the specimens listed here, showing the range of geographical distribution across Pará state. Specimens with 'unknown locality' were certainly collected in Pará state, however, we could not define the exact locality.

RESULTS AND DISCUSSION

TAXONOMIC ACCOUNT AND LIST OF SPECIMENS

Order Didelphimorphia Gill, 1872

Family Didelphidae Gray, 1821

Genus *Chironectes* Illiger, 1811

Chironectes minimus (Zimmermann, 1780)

Common names: *cuíca-d'água* (Port.); water opossum (Eng.).

Records (1 locality and 22 specimens): Cametá, Rio Tocantins: MZUSP 4644 (skin and skull; female), 4654 (skin and skull; male), 4655–4656 (skin; male), 4657 (skin and skull; female), 4658 (skin and skull; male), 4659 (skin and skull; female), 4669–4670 (skin and skull; female), 4671 (skin; female), 4672–4673 (skin and skull; female), 4674 (skin; unknown sex), 4755 (skin and skull; female), 4757 (skin; female), 4759 (skin; male), 4762 (skin and skull; female), 4837 (skin and skull; male), 5334 (skin; unknown sex), 16544 (skull; male), 16545 (skull; female), 16585 (skull; female).

Conservation status: ICMBio (2018): DD; IUCN (2019): LC.

Genus *Didelphis* Linnaeus, 1758

Didelphis marsupialis Linnaeus, 1758

Common names: *gambá-comum*, *gambá-de-orelha-preta*, *mucura*, *saruê*, *sarigueia* (Port.); common opossum, black-eared opossum (Eng.).

Records (19 localities and 256 specimens): Ananindeua: MZUSP 8558–8560 (skull; female), 8561

(skull; unknown sex), 8562 (skull; male), 8563 (skull; male), 8565 (skull; unknown sex), 16549 (skull; unknown sex), 17099–17112 (skull; unknown sex), 17114–17118 (skull; unknown sex); Belém: 16546 (skull; unknown sex), 16555 (skin and skull; unknown sex), 16558 (skin and skull; male), 16560–16561 (skin; female), 16562 (skin; male), 16563 (skin; female), 17098 (skull; unknown sex), 17390 (skull; unknown sex), 17392 (skull; unknown sex), 19090 (skull; unknown sex), 19099–19103 (skull; unknown sex), 19111–19112 (skull; unknown sex), 19206 (skull; unknown sex), 19277 (skull; unknown sex), 19293 (skull; unknown sex), 19343 (skull; unknown sex), 19233 (skull; unknown sex), 19358 (skull; unknown sex); Boa Fé, Parque Nacional do Tapajós: 11867 (skin, skull and partial skeleton; female); BR-010, km 87-94: 17132 (skull; unknown sex), 17134–17135 (skull; unknown sex), 17138 (skull; unknown sex), 17140–17142 (skull; unknown sex), 17145–17150 (skull; unknown sex), 17153–17154 (skull; unknown sex), 17157–17165 (skull; unknown sex), 17167–17169 (skull; unknown sex), 17171–17173 (skull; unknown sex), 17176 (skull; unknown sex), 17178–17180 (skull; unknown sex), 17182–17190 (skull; unknown sex), 17192–17193 (skull; unknown sex), 17200–17203 (skull; unknown sex), 17205 (skull; unknown sex), 17207 (skull; unknown sex), 17238–17277 (skull; unknown sex); BR-010, km 92: 19092–19098 (skull; unknown sex), 19190–19208 (skull; unknown sex), 19234–19242 (skull; unknown sex), 19250 (skull; unknown sex), 19254–19265 (skull; unknown sex), 19267–19279 (skull; unknown sex), 19285 (skull; unknown sex), 19341 (skull; unknown sex), 19344–19348 (skull; unknown sex), 19350–19351 (skull; unknown sex), 19353–19355 (skull; unknown sex); BR-010, km 93: 8971 (skin and skull; male); Cachoeira do Espelho, Rio Xingu: 21311 (skin and skull; female), 21312 (skin and skull; male), 21313 (skull and skeleton; female), 21315 (skin, skull and skeleton; female); Cametá, Rio Tocantins: 4741 (skin and skull; male), 4742 (skin and skull; female), 4746 (skin and skull; female), 4747 (skin and skull; male), 4748 (skin and skull; female), 4765–4766 (skin and skull; male), 4782 (skin and skull;

female), 4784 (skin and skull; male), 10581 (skull; male), 10585 (skull; female), 10586 (skull; male), 10593 (skull; female), 10594 (skull; male), 10596 (skull; male), 20078 (skull; unknown sex); Capim: 19091 (skull; unknown sex); Caxiricatuba, Rio Tapajós: 4768 (skin and skull; female), 4786 (skin and skull; male), 4787 (skin; female), 4788 (skin and skull; male), 10589 (skull; male), 10595 (skull; female), 16547 (skull; female); Fordlândia: 12871 (skin and skull; female), 12872 (skin and skull; female); Igarapé Bravo, Rio Amazonas: 4781 (skin; male); Igarapé São José, near Itaituba: 11866 (skin, skull and partial skeleton; female); Pau de Letra, Rio Tapajós: 4743 (skin and skull; male), 4783 (skin and skull; male); Piquiatuba, Rio Tapajós: 10587 (skull; male); Santarém, Fazenda Marucu: 3653 (skull; unknown sex); São Miguel do Guamá: 8972 (skin and skull; female); Transamazônica km 15, near Itaituba: 11868 (skin; female), 11869 (skin and skull; male); Vila Bravo, Rio Tocantins: 13474–13475 (skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Genus *Metachirus* Burmeister, 1854

Metachirus myosuroides (Temminck, 1824)

Common names: *cuíca-de-quatro-olhos*, *cuíca-marrom*, *jupati* (Port.); brown four-eyed opossum (Eng.).

Records (10 localities and 51 specimens): BR-010, km 87: MZUSP 17018 (skin and skull; female); BR-010, km 87-94: 17156 (skull; unknown sex), 17170 (skull; unknown sex), 17174 (skull; unknown sex), 17177 (skull; unknown sex), 17181 (skull; unknown sex); BR-010, km 92: 19116 (skull; unknown sex), 19246 (skull; unknown sex), 19251–19252 (skull; unknown sex), 19281–19282 (skull; unknown sex), 19298–19303 (skull; unknown sex), 19305–19308 (skull; unknown sex), 19312 (skull; unknown sex), 19342 (skull; unknown sex), 19352 (skull; unknown sex), 19357 (skull; unknown sex), 20039 (skull; unknown sex); Capim, BR-010, km 94: 17019 (skin; female), 17020–17021 (skin and skull; female); Belém: 9782 (skin and skull; male), 9937 (skin and skull; female), 17022 (skin, skull and skeleton;

female), 17023 (skull and skeleton; female), 17195 (skull; unknown sex), 17395 (skull; female), 19117 (skull; unknown sex), 19280 (skull; unknown sex), 19290–19291 (skull; unknown sex), 19309 (skull; unknown sex), 19311 (skull; unknown sex); Cachoeira do Espelho, Rio Xingu: 21305 (skin, skull and skeleton; male), 21334 (skin, skull and skeleton; female); Fordlândia: 17024 (skin and skull; male); Juruá, Rio Xingu: 25731 (in alcohol; female), 25732 (in alcohol; three fetuses of female 25731), 25733 (in alcohol; unknown sex); Piquiatuba, Rio Tapajós: 4527 (skin and skull; male); São Miguel do Guamá: 8964 (skin and skull; male), 8965 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: a single species, *M. nudicaudatus* (É. Geoffroy, 1803), with five subspecies in South America has been traditionally recognized in the genus (Gardner & Dagosto, 2008). However, a recent study based on morphologic and molecular data has suggested the existence of more than a single species (Voss *et al.*, 2019). Furthermore, *M. nudicaudatus* was restricted to the populations of Guyana, French Guiana, Suriname and the state of Amapá, in Brazil, while every other South American populations were provisionally placed in *M. myosuroides* (Voss *et al.*, 2019). The specimens of *Metachirus* present in the MZUSP collection are from localities south of the Rio Amazonas and they show the diagnostic characters of *M. myosuroides* indicated by Voss *et al.* (2019), such as a small maxillopalatine fenestrae, large entoconids, strongly convergent temporalis and sagittal crest usually present.

Genus *Philander* Brisson, 1762

Philander opossum (Linnaeus, 1758)

Common names: *cuíca-de-quatro-olhos*, *cuíca-verdadeira* (Port.); gray four-eyed opossum (Eng.).

Records (12 localities and 89 specimens): Ananindeua: MZUSP 17113 (skull; unknown sex); Belém: 9943 (skin and skull; male), 17066 (skin; male), 17197–17198 (skull; unknown sex), 17199 (skull; unknown sex), 17391 (skull;



unknown sex), 19114–19115 (skull; unknown sex), 19243 (skull; unknown sex), 19247–19249 (skull; unknown sex), 19288 (skull; unknown sex), 19292 (skull; unknown sex), 19294 (skull; unknown sex), 19295–19296 (skull; unknown sex), 19356 (skull; unknown sex); Boiuçu: 4540 (skin and skull; female); BR-010, km 87: 17027 (skin; male), 19310 (skull; unknown sex); BR-010, km 87-94: 17152 (skull; unknown sex), 17155 (skull; unknown sex), 17175 (skull; unknown sex), 17204 (skull; unknown sex), 17206 (skull; unknown sex), 17278–17282 (skull; unknown sex); BR-010, km 92: 19113 (skull; unknown sex), 19244–19245 (skull; unknown sex), 19266 (skull; unknown sex), 19283–19284 (skull; unknown sex), 19286–19287 (skull; unknown sex), 19289 (skull; unknown sex), 19297 (skull; unknown sex), 19349 (skull; unknown sex); BR-010, km 94: 17026 (skin and skull; female), 17028–17029 (skin and skull; male); Cachoeira do Espelho, Rio Xingu: 21306 (skin, skull and skeleton; female), 21307 (skin and skull; male), 21308 (skin, skull and skeleton; female), 21309–21310 (skin, skull and skeleton; male), 21314 (skull and skeleton; male); Cametá, Rio Tocantins: 4535–4538 (skin; female), 4539 (skin; male), 4542 (skin and skull; male), 4543 (skin and skull; female), 4544–4646 (skin; male), 4648–4650 (skin; female), 4651 (skin and skull; male), 4652 (skin and skull; female), 4653 (skin and skull; male), 9941 (skin; male), 17031 (skull; male), 17063 (skull; male), 17064–17065 (skull; female), 17069 (skull; male), 17070 (skull; female), 17071–17072 (skull; male), 17073 (skull; female), 20079 (skull; unknown sex); Fordlândia: 17030 (skin and skull; female); Igarapé Taperebá, Ilha de Marajó: 8679 (skin, skull and skeleton; male); Rio Bacajá (mouth): 25454 (skin, skull and skeleton; male); São Miguel do Guamá: 8966 (skin and skull; male), 8967 (skin and skull; female), 8968–8969 (skin and skull; male), 8970 (skin and skull; female); Vila Bravo, Rio Tocantins: 13478 (skin and skull; unknown sex), 13479 (unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC. The recent taxonomic changes (see Comments) were not included in the latest conservation assessments by ICMBio (2018) and IUCN (2019).

Comments: Voss *et al.* (2018) revised the genus *Philander*, recognizing eight species: *P. andersoni* (Osgood, 1913), *P. canus* (Osgood, 1913), *P. mcilhennyi* Gardner & Patton, 1972, *P. melanurus* (Thomas, 1899), *P. opossum*, *P. pallidus* (Allen, 1901), *P. pebas* Voss, Diaz-Nieto & Jansa, 2018 and *P. quica* (Temminck, 1824). According to them, *P. opossum* occurs in Guyana, French Guiana, Suriname and the Eastern Brazilian Amazon (Amapá, Pará, Roraima, and part of Amazonas states), east of the Rio Negro and Rio Madeira, on both banks of the Rio Amazonas.

Order Cingulata Illiger, 1811

Family Chlamyphoridae Bonaparte, 1850

Genus *Euphractus* Wagler, 1830

Euphractus sexcinctus (Linnaeus, 1758)

Common names: *tatu-peba*, *tatu-peludo* (Port.); six-banded armadillo, yellow armadillo (Eng.).

Records (1 locality and 1 specimen): Cachimbo, Formiga: MZUSP 8035 (skin; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Genus *Priodontes* F. Cuvier, 1825

Priodontes maximus (Kerr, 1792)

Common names: *tatu-canastra*, *tatuaçu* (Port.); giant armadillo (Eng.).

Records (2 localities and 2 specimens): Reserva Biológica do Rio Trombetas: MZUSP 19995 (partial skull); Vila Bravo, Rio Tocantins: 13492 (skin, skull and skeleton).

Conservation status: ICMBio (2018): VU A2cd; IUCN (2019): VU A2cd.

Family Dasypodidae Gray, 1821

Genus *Dasybus* Linnaeus, 1758

Dasybus beniensis Lönnberg, 1942

Common names: *tatu-de-quinze-quilos* (Port.); greater long-nosed armadillo (Eng.).



Records (1 locality and 3 specimens): Capim, Rodovia BR-14, km 93: MZUSP 8950 (skin and skull; unknown sex); Tavio, Rio Tapajós: 19973–19974 (skull; female).

Conservation status: ICMBio (2018): LC (as *Dasypus kappleri*); IUCN (2019): LC (as *Dasypus kappleri*). The recent taxonomic changes (see Comments) were not included in the latest conservation assessments by ICMBio (2018) and IUCN (2019). Therefore, this species was classified by these agencies as *Dasypus kappleri*.

Comments: Feijó & Cordeiro-Estrela (2016) and Feijó *et al.* (2018) recently revalidated *D. beniensis* as full species, which traditionally was considered a junior synonym of *D. k. pastasae* (Thomas, 1901) (Cabrera, 1958; Gardner, 2005; Wetzel *et al.*, 2008). Placed in the subgenus *Hyperoambon* Peters, 1864 by Wetzel & Mondolfi (1979) and Feijó *et al.* (2019).

Dasypus kappleri Krauss, 1862

Common names: *tatu-de-quinze-quilos* (Port.); greater long-nosed armadillo (Eng.).

Records (1 locality and 1 specimen): As Pedras, Rio Cuminá-Miri: MZUSP 19967 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC. The recent taxonomic changes (see Comments) were not included in the latest conservation assessments by ICMBio (2018) and IUCN (2019).

Comments: traditionally *D. kappleri* has been considered a species with two subspecies, *D. k. kappleri* Krauss, 1862 and *D. k. pastasae* (Thomas, 1901) (Cabrera, 1958; Gardner, 2005; Wetzel *et al.*, 2008), but Feijó & Cordeiro-Estrela (2016) and Feijó *et al.* (2018) raised them as full species and revalidated *D. beniensis* (above), formerly junior synonym of *D. k. pastasae*. Placed in the subgenus *Hyperoambon* Peters, 1864 by Wetzel & Mondolfi (1979) and Feijó *et al.* (2019).

Dasypus novemcinctus Linnaeus, 1758

Common names: *tatu-galinha*, *tatuetê* (Port.); nine-banded armadillo, long-nosed armadillo (Eng.).

Records (13 localities and 15 specimens): Alegre, 15 km NE Marapanim: MZUSP 19982 (skull; unknown sex); Bagagem, Rio Tocantins: 13485 (skin and skull; unknown sex); Cachimbo: 8073 (skin and skull; male), 19970 (skin and skull; unknown sex); Cachoeira do Espelho, Rio Xingu: 20923 (skin and skull; male), 20924 (skin and skull; female), 21301 (skin and skull; female); Caxiricatuba, Rio Tapajós: 5113 (skin and skull; female); Fordlândia: 19969 (skin and skull; female); Igarapé Jaramacaru: 19980 (skin; unknown sex); Piquiatuba, Rio Tapajós: 5112 (skin and skull; male); Rio Curuá (mouth): 5110 (skin; female); Transamazônica km 50, near Itaituba: 19965 (skin and skull; male); Transamazônica km 62, near Itaituba: 19981 (skull; unknown sex); Transamazônica km 75, near Itaituba: 19966 (partial skin; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: *D. novemcinctus* has been traditionally treated as a polytypic species, with the number of recognized subspecies varying among different authors (Cabrera, 1958; Hall, 1981; McBee & Baker, 1982; Gardner, 2005). However, Wetzel & Mondolfi (1979) and Feijó *et al.* (2018) did not recognize any intraspecific subdivisions, and these later authors suggested that a comprehensive study to test geographic races is still needed. *Dasypus novemcinctus* was placed in the subgenus *Dasypus* by Feijó *et al.* (2019), together with *D. pilosus* (Fitzinger, 1856), *D. mazzai* Yepes, 1933, *D. sabanicola* Mondolfi, 1968 and an undescribed species from the Guianas.

Dasypus septemcinctus Linnaeus, 1758

Common names: *tatu-galinha-pequeno*, *tatu-china*, *tatuí* (Port.); Brazilian lesser long-nosed armadillo, seven-banded armadillo (Eng.).

Records (3 localities and 3 specimens): Cachimbo: MZUSP 8111 (skin and skull; male); Soure, Fazenda Teso, Ilha de Marajó: 9970 (skin; unknown sex); Cametá, Rio Tocantins: 5111 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: Feijó *et al.* (2018) recognized three subspecies: *D. s. septemcinctus* Linnaeus, 1758, *D. s. hybridus* (Desmarest, 1804) and *D. s. cordobensis* Feijó, Patterson & Cordeiro-Estrela, 2018; the former occurring from the Amazon Basin to northern Argentina. Placed in subgenus *Muletia* Gray, 1874 by Feijó *et al.* (2019).

Order Pilosa Flower, 1883

Suborder Folivora Delsuc, Catzeflis, Stanhope & Douzery, 2001

Family Bradypodidae Gray, 1821

Genus *Bradypus* Linnaeus, 1758

Bradypus tridactylus Linnaeus, 1758

Common names: *preguiça-de-bentinho*, *preguiça-de-três-dedos* (Port.); pale-throated sloth (Eng.).

Records (1 locality and 1 specimen): Igarapé Bravo, Rio Amazonas: 5302 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Bradypus variegatus Schinz, 1825

Common names: *preguiça-comum*, *preguiça-de-garganta-marrom*, *preguiça-de-três-dedos* (Port.); brown-throated sloth (Eng.).

Records (16 localities and 159 specimens): Aveiro: MZUSP 13504 (skin; female), 20003 (skull; female); Barreira, Rio Tapajós: 13507 (skin; female), 13509 (skin; female), 20005 (skull; female), 20006 (skull; female); Belém: 10660–10661 (skin and skull; female), 10663–10665 (skin and skull; male), 10666–10669 (skin and skull; female), 13510 (skin and skull; female), 23486–23598 (skull; unknown sex); Cachoeira do Espelho, Rio Xingu: 21327 (skin, skull and skeleton; female); Cametá, Rio Tocantins: 5429 (skin and skull; male), 5431 (skin and skull; female), 5432 (skin and skull; male), 5433 (skin; male), 5434 (skin and skull; female), 7118–7119 (skull; female), 13517 (skin and skull; male), 19918 (skull; female), 25209 (skin and skull; female); Caxiricatuba, Rio Tapajós: 5427 (skin and skull),

5430 (skin; unknown sex), 19914 (skin and skull; female), 19917 (skull; female); Fordlândia: 13515 (skeleton; female), 13495–13496 (skin and skull; female), 13497 (skin and skull; unknown sex), 13498 (skin and skull; male), 13499 (skin and skull; female), 13501–13502 (skin and skull; male); Igarapé São José, near Itaituba: 19902 (skull; unknown sex); Piquiatuba, Rio Tapajós: 5426 (skin and skull; female); Ilha de Santa Helena, Rio Pará: 13512 (skin and skull; female); Santarém, Alter do Chão: 19911 (formalina; unknown sex); Santarém, Fazenda Marucu: 3649–3650 (skin and skull; male); São Luís, Rio Tapajós: 13508 (skin; female), 20004 (skull; unknown sex); Transamazônica km 58, near Itaituba: 19929 (skin; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Family Choloepodidae Gray, 1871

Genus *Choloepus* Illiger, 1811

Choloepus didactylus (Linnaeus, 1758)

Common names: *preguiça-real*, *preguiça-de-dois-dedos*, *unau* (Port.); Linnaeus's two-toed sloth (Eng.).

Records (6 localities and 8 specimens): Cachoeira do Espelho, Rio Xingu: MZUSP 21328 (skin, skull and skeleton; unknown sex); Cametá, Rio Tocantins: 5457 (skin; female), 5458 (skin; unknown sex), 19925 (skull; female); Morro da Terra Preta, Transamazônica km 60, near Itaituba: 19930 (skeleton; unknown sex); Óbidos: 3651 (skin and skull; male); Oriximiná: 19931 (skin; unknown sex); unknown locality: 8640 (skin; male) (ex-Zoo).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: two-toed sloths were classified together with *Bradypus* in Bradypodidae (Simpson, 1945; Cabrera, 1958) or in a distinct family Choloepodidae (Wetzel & Ávila-Pires, 1980). They have also been considered the living forms of the extinct family Megalonychidae (Wetzel, 1985; Gardner & Naples, 2008). This latter view has been widely accepted for decades, but recent molecular studies

have pointed out that *Choloepus* is phylogenetically close to the extinct Mylodontidae (Delsuc *et al.*, 2019; Presslee *et al.*, 2019). Thus, *Choloepus* was classified into a separate family, Choloepodidae, as some previous authors have proposed.

Suborder Vermilingua Illiger, 1811
Family Cyclopedidae Pocock, 1924

Genus *Cyclopes* Gray, 1821

Cyclopes didactylus (Linnaeus, 1758)

Common names: *tamanduaí* (Port.); common silky anteater, common pygmy anteater (Eng.).

Records (6 localities and 30 specimens): Arimateua, Rio Tocantins: MZUSP 19946 (skull; unknown sex); Belém: 8680 (skin, skull and skeleton; female), 8681 (skin, skull and skeleton; male), 24137 (skull; unknown sex); Igarapé Bravo, Rio Amazonas: 4696 (skin and skull; female); Cametá, Rio Tocantins: 4675–4678 (skin and skull; male), 4680 (skin and skull; male), 4681–4683 (skin and skull; female), 4684 (skin; male), 4685–4687 (skin and skull; female), 4689 (skin and skull; female), 4690 (skin; female), 4691–4692 (skin and skull; female), 4693–4695 (skin and skull, male), 4697 (skin and skull; female), 4698 (skin and skull; male), 4701 (skin and skull; female), 4702–4703 (skin; unknown sex), 19932 (skin, skull and skeleton; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: a recent taxonomic revision recognizes seven species rather than a single polytypic species of silky anteater (Miranda *et al.*, 2017). In this new arrangement, *C. didactylus* is the only species of the genus *Cyclopes* to have dorsal and ventral stripes clearly marked, and is found from eastern Venezuela, Trinidad, the Guianas, northeastern Brazilian Amazon (state of Pará, north of Rio Amazonas) towards states of Maranhão and Piauí, with a disjunct population in the northeastern Atlantic Forest (from the states of Rio Grande do Norte to Alagoas).

Cyclopes xinguensis Miranda, Casali, Perini, Machado & Santos, 2018

Common names: *tamanduaí* (Port.); Xingu silky anteater, Xingu pygmy anteater (Eng.).

Records (3 localities and 8 specimens): Caxiricatuba, Rio Tapajós: MZUSP 4700 (skin and skull; female); Fordlândia: 19934 (skin and skull; female), 19935 (skin and skull; male), 19936 (skin; female), 19937–19938 (skin and skull; female), 19939 (skin and skull; male); Santarém: 3691 (skin and skull; female).

Conservation status: ICMBio (2018): LC (as *Cyclopes didactylus*); IUCN (2019): LC (as *Cyclopes didactylus*). The recent taxonomic changes (see Comments) were not included in the latest conservation assessments by ICMBio (2018) and IUCN (2019). Therefore, this species was classified by these agencies as *Cyclopes didactylus*.

Comments: *Cyclopes xinguensis* has been described by Miranda *et al.* (2017), who characterized the species as having a grayish body color with a dorsal stripe clearly marked, yellow rump and pale yellowish venter (Miranda *et al.*, 2017). It is found in the region south of the Rio Amazonas, east of the Rio Madeira and west of the Rio Xingu (Miranda *et al.*, 2017).

Family Myrmecophagidae

Genus *Myrmecophaga* Linnaeus, 1758

Myrmecophaga tridactyla Linnaeus, 1758

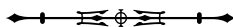
Common names: *tamandua-bandeira*, *tamandua-açu*, *tamandua-cavalo*, *jurumim* (Port.); giant anteater (Eng.).

Records (1 locality and 1 specimen): Fordlândia: MZUSP 19958 (skin and skull; female).

Conservation status: ICMBio (2018): VU A2c; IUCN (2019): VU A2c.

Genus *Tamandua* Gray, 1825

Tamandua tetradactyla (Linnaeus, 1758)



Common names: *tamanduá-mirim*, *tamanduá-de-colete*, *melete* (Port.); Southern tamanduá, collared anteater, lesser anteater (Eng.).

Records (13 localities and 38 specimens): Ananindeua: MZUSP 8566 (skin; unknown sex); Barreira, Rio Tapajós: 19959 (skin and skull; male); Belém: 23593–23594 (skull; unknown sex); Cachoeira do Espelho, Rio Xingu: 21329 (skin, skull and skeleton; male); Cametá, Rio Tocantins: 4979 (skin and skull; female), 5234 (skin and skull; male), 5236 (skin and skull; male), 5237–5239 (skin and skull; female), 5440 (skin and skull; female), 5442 (skin and skull; female), 5448–5449 (skin and skull; male), 5450 (skin; unknown sex), 5451 (skin and skull; male), 5452 (skin; male), 5453 (skin and skull; female), 10484 (skull; male), 19986 (skull; unknown sex); Capim, BR-010, km 93: 8999 (skin and skull; male); Caxiricatuba, Rio Tapajós: 4977 (skin; female), 5240 (skin and skull; female); Fordlândia: 19951 (skin and skull; male), 19952–19954 (skin and skull; female), 19960–19962 (skin and skull; female), 19972 (skin and skull; female), 20002 (skull and skeleton); Lago Jacaré, Rio Trombetas: 10708 (skin and skull; female); Óbidos: 3652 (skin and skull; female); Piquiatuba, Rio Tapajós: 5456 (skin and skull; male); Rio Curuá (mouth): 5454 (skin and skull; female); Santo Antônio, Rio Tocantins: 13484 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: *T. tetradactyla* presents body-color with great geographical variation, especially the vest (Wetzel, 1975). Most specimens from Pará in the MZUSP have a yellow body with a black or dark brown vest. However, one individual (MZUSP 3652) has the yellow body color with partial fading black vest, with a grayish appearance due to black hair with yellowish tips, while two others (MZUSP 5138 and 10708) are entirely yellow and without the vest. There are no records of melanistic specimens in the MZUSP collection.

Order Sirenia Illiger, 1811
Family Trichechidae Gill, 1872

Genus *Trichechus* Linnaeus, 1758
Trichechus inunguis (Natterer, 1883)

Common names: *peixe-boi-da-amazônia*, *manati* (Port.); Amazonian manatee (Eng.).

Records (3 localities and 3 specimens): Lago Sapucaá, Rio Trombetas: MZUSP 19535 (skull and skeleton; unknown sex); Óbidos: 19545 (skull and skeleton; male); Oriximiná: 19544 (skull and skeleton; unknown sex).

Conservation status: ICMBio (2018): VU A4cd; IUCN (2019): VU A3cd.

Order Carnivora Bowdich, 1821
Suborder Caniformia Kretzoi, 1943
Family Canidae Fischer, 1817

Genus *Atelocynus* Cabrera, 1940
Atelocynus microtis (Sclater, 1883)

Common names: *cachorro-do-mato-de-orelhas-curtas*, *raposa-de-orelhas-pequenas* (Port.); short-eared dog, short-eared zorro, small-eared dog (Eng.).

Records (2 localities and 5 specimens): Fordlândia: MZUSP 19751 (skin, skull and skeleton; male), 19752 (skin, skull and skeleton; female), 19753 (skin and skull; male), 19754 (skin and skull; male); Morro da Terra Preta, Transamazônica km 60, near Itaituba: 19750 (skull and partial skeleton).

Conservation status: ICMBio (2018): VU A2c; IUCN (2019): NT.

Genus *Cerdocyon* C.E.H. Smith, 1839
Cerdocyon thous (Linnaeus, 1766)

Common names: *cachorro-do-mato*, *lobinho*, *lobete* (Port.); crab-eating fox (Eng.).

Records (2 localities and 2 specimens): Canaã dos Carajás: MZUSP 34778 (skull; unknown sex); unknown locality: 2762 (skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: the oldest MZUSP specimen from Pará is MZUSP 2762, already identified as *Cerdocyon thous* and

collected in 1909. Originally, this specimen was a stuffed animal with a separated skull; however, only the skull was found.

Family Procyonidae Gray, 1825

Genus *Nasua* Storr, 1780

Nasua nasua (Linnaeus, 1766)

Common names: *quati*, *quati-de-cauda-anelada*, *quati-de-nariz-marrom* (Port.); South American coati, ring-tailed coati (Eng.).

Records (15 localities and 28 specimens): Baixo Amazonas: MZUSP 19785 (skin; unknown sex); Igarapé Bravo, Rio Amazonas: 5540 (skin and skull; female); Cachimbo: 8034 (skin; female); Cachoeira do Espelho, Rio Xingu: 20926 (skin and skull; male), 21333 (skin, skull and skeleton; female); Cametá, Rio Tocantins: 5233 (skin; female), 5242 (skin and skull; male), 7157 (skull; female); Caxiricatuba, Rio Tapajós: 5228 (skin and skull; female), 5230 (skin and skull; female), 5247 (skin and skull; female), 5251 (skin and skull; female); Fordlândia: 19777 (skin and skull; female), 19781 (skin and skull; female), 19783 (skin and skull; male), 19784 (skin and skull; female); Ilha do Limão, Rio Xingu: 25456 (skin, skull and skeleton; male); Itaituba: 24834 (skull; unknown sex), 24835 (skull; male); Monte Cristo, Rio Tapajós: 19773 (skin and skull; female); Piquiatuba, Rio Tapajós: 5241 (skin; female); Rio Curuá (mouth): 5246 (skin and skull; female); Santarém, Fazenda Marucu: 3648 (skin; male); Sumaúma, Rio Tapajós: 19765 (skin and skull; male), 19768 (skin and skull; female); Urucurituba, Rio Tapajós: 19778–19779 (skin and skull; female), 19780 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Genus *Potos* É Geoffroy & F.G. Cuvier, 1795

Potos flavus (Schreber, 1774)

Common names: *jupará*, *jurupará*, *macaco-da-noite* (Port.); kinkajou (Eng.).

Records (5 localities and 7 specimens): Belém: MZUSP 8645 (skin; male); Cachoeira do Espelho, Rio Xingu: 21330 (skin, skull and skeleton; female); Cametá, Rio Tocantins: 5534 (skin and skull; male), 5563 (skin and skull; female), 5564 (skin; male); Capim: 8951 (skin and skull; female); Fordlândia: 12000 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Genus *Procyon* Storr, 1780

Procyon cancrivorus (G. Cuvier, 1798)

Common names: *mão-pelada*, *guaxinim*, *jaguacinim* (Port.); crab-eating raccoon, South American raccoon (Eng.).

Records (2 localities and 2 specimens): Cametá, Rio Tocantins: MZUSP 5559 (skin and skull; female); Fordlândia: 19794 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Family Mustelidae Fischer, 1817

Genus *Eira* C.E.H. Smith, 1842

Eira barbara (Linnaeus, 1758)

Common names: *irara*, *papa-mel*, *jaguapé* (Port.); tayra (Eng.).

Records (9 localities and 30 specimens): Boiucú: MZUSP 5183 (skin and skull; female), 5186 (skin and skull; female), 5195 (skin and skull; female); Caxiricatuba, Rio Tapajós: 5184 (skin and skull; male), 5187 (skin and skull; male), 5190 (skin, female), 5275 (skin and skull; male), 19845 (skull; female); Fordlândia: 10143 (skin and skull; female), 10144 (skin and skull; male), 10145 (skin and skull; female), 19798 (skull and skeleton; male), 19800–19801 (skin and skull; female), 19803 (skin and skull; female), 19804 (skin and skull; male), 19805–19806 (skin and skull; female), 19808–19809 (skin and skull; female), 19810 (skin and skull; male), 19811–19812 (skull; unknown sex), 19813 (skull and skeleton; female); Óbidos: 3672 (skin and skull; female);



Rio Tapajós: 19825 (skin; unknown sex); Tauari, Rio Tapajós: 19799 (skin and skull; female); Urucurituba, Rio Tapajós: 19802 (skin and skull; female), 19807 (skin and skull; male); unknown locality: 8642 (skin, skull and skeleton; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: all specimens in the MZUSP have the typical coat color pattern, *i.e.*, trunk, limbs, and tail black or dark brown contrasting with light-colored head and neck (grayish bronze, grayish brown or light yellow), except one individual, MZUSP 5186 (from Boiuçu), which has the body entirely whitish-yellow. Entirely dark specimens are not represented in the MZUSP collection.

Genus *Galictis* Bell, 1826

Galictis vittata (Schreber, 1776)

Common names: *furão*, *furão-grande* (Port.); greater grison (Eng.).

Records (3 localities and 3 specimens): Belém: MZUSP 19826 (skin and skull; female); Brasília Legal, Rio Tapajós: 19824 (skin; female); Sumaúma, Rio Tapajós: 19823 (skin; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: genus *Galictis* revised by Bornholdt *et al.* (2013). *Galictis vittata* distinguishes from its sister species, *G. cuja* (Molina, 1782), by its shorter fur, larger body size and presence of metaconid in the m1 (Yensen & Tarifa, 2003a, 2003b; Bornholdt *et al.*, 2013).

Genus *Mustela* Linnaeus, 1758

Mustela africana Desmarest, 1818

Common names: *doninha-amazônica* (Port.); Amazon weasel, tropical weasel (Eng.).

Records (3 localities and 3 specimens): Icoaraci: MZUSP 6632 (skin; female); Tauari, Rio Tapajós: 19828 (skin; male); unknown locality: 24837 (skin; male).

Conservation status: ICMBio (2018): DD; IUCN (2019): LC.

Comments: there is scarce information regarding this species in the literature, with only a few specimens known to exist worldwide, collected mainly in the early 20th century (Oliveira, T., 2009; Ramírez-Chaves *et al.*, 2014). According to the Global Biodiversity Information Facility (GBIF, 2019), only 31 specimens are housed in mammals' collections from Europe, USA, and Brazil. Thus, the specimens preserved at the MZUSP have a high scientific value for this poorly sampled species.

Genus *Pteronura* Gray, 1837

Pteronura brasiliensis (Zimmerman, 1780)

Common names: *ariranha*, *lontra-gigante*, *onça-d'água* (Port.); giant otter, giant river otter (Eng.).

Records (1 locality and 1 specimen): Cachimbo: MZUSP 8061 (skin and skull; male).

Conservation status: ICMBio (2018): VU A3cd; IUCN (2019): EN A3ce.

Suborder Feliformia Kretzoi, 1945

Family Felidae Fischer, 1817

Genus *Herpailurus* Severtzov, 1858

Herpailurus yagouaroundi (É. Geoffroy, 1803)

Common names: *jaguarundi*, *gato-mourisco* (Port.); jaguarundi (Eng.).

Records (4 localities and 7 specimens): Cametá, Rio Tocantins: MZUSP 5175–5176 (skin and skull; female); Fordlândia: 13598 (skin and skull; female), 13606 (skin and skull; female), 13607 (skin and skull; male); Óbidos: 3692 (skull; unknown sex); Puraquecuará, Rio Tocantins: 13481 (skin, skull and skeleton; unknown sex).

Conservation status: ICMBio (2018): VU C1; IUCN (2019): LC.

Comments: all specimens of jaguarundi from Pará state in the MZUSP are brownish or blackish gray, except for MZUSP 13598 (from Fordlândia), which has a reddish pelage.

Genus *Leopardus* Gray, 1842

Leopardus emiliae (Thomas, 1914)

Common names: *gato-do-mato-pequeno*, *gato-do-mato-pequeno-do-norte*, *gato-macambira* (Port.); Eastern tigrina, Snethlage's tigrina (Eng.).

Records (1 locality and 1 specimen): Terra Santa, Rio Jamari: MZUSP 13605 (skin, skull and skeleton; female).

Conservation status: ICMBio (2018): EN C2 (as *Leopardus tigrinus*); IUCN (2019): VU A2c (as *Leopardus tigrinus*).

Comments: previously considered a junior synonym of *L. tigrinus* (Schreber, 1775), Eastern or Snethlage's tigrina has been raised to species rank by Nascimento & Feijó (2017).

Leopardus pardalis (Linnaeus, 1758)

Common names: *jaguaririca*, *maracajá-açu* (Port.); ocelot (Eng.).

Records (5 localities and 6 specimens): As Pedras, Rio Cuminá-Miri: MZUSP 13595 (skull and skeleton; unknown sex); Curuá, Lago Cuiteuá, Rio Amazonas: 5553 (skin and skull; male); Ponta de Pedras, Ilha de Marajó: 29025 (skin; male); Vila Bravo, Rio Tocantins: 13470 (skin and skull; unknown sex); unknown Locality: 8633–8634 (skin, skull and skeleton; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Leopardus wiedii (Schinz, 1821)

Common names: *maracajá*, *maracajá-mirim*, *gato-peludo* (Port.); margay (Eng.).

Records (2 localities and 4 specimens): Anajás: MZUSP 13604 (skin; male); Cametá, Rio Tocantins: 5560 (skin and skull; male), 5561 (skull; male), 5562 (skin and skull; male).

Conservation status: ICMBio (2018): VU C1; IUCN (2019): NT.

Genus *Puma* Jardine, 1834

Puma concolor (Linnaeus, 1771)

Common names: *suçuarana*, *onça-parda*, *onça-vermelha*, *puma* (Port.); cougar, mountain lion, puma (Eng.).

Records (2 localities and 2 specimens): Serra do Cachimbo: MZUSP 8121 (skin and skull; female); Transamazônica km 46: 24904 (skull; unknown sex).

Conservation status: ICMBio (2018): VU C1; IUCN (2019): LC.

Genus *Panthera* Oken, 1816

Panthera onca (Linnaeus, 1758)

Common names: *onça-pintada*, *jaguar*, *jaguetê* (Port.); jaguar (Eng.).

Records (3 localities and 4 specimens): Taperinha: MZUSP 3685 (skin and skull; male), 3686 (skull; male); Transamazônica km 100: 13596 (mandible and skeleton); Vila Bravo, Rio Tocantins: 13493 (skin, skull and skeleton; unknown sex).

Conservation status: ICMBio (2018): VU A2bcd + 3cd; IUCN (2019): NT.

Order Artiodactyla Owen, 1848

Suborder Ruminantia Scopoli, 1777

Infraorder Pecora Flower, 1883

Family Bovidae Gray, 1821

Genus *Bubalus* C.E.H. Smith, 1827

Bubalus bubalis (Linnaeus, 1758)

Common names: *búfalo-d'água*, *búfalo-asiático* (Port.); water buffalo, domestic water buffalo (Eng.).

Records (1 locality and 1 specimen): Ilha de Marajó: no record number (horns; unknown sex).

Conservation status: N/A.

Comments: species introduced in the region in the last decade of the 19th century, with populations currently living in a semi-feral state (Tiepolo & Tomas, 2011).

Family Cervidae Goldfuss, 1820

Genus *Mazama* Rafinesque, 1817

Mazama americana (Erxleben, 1777)



Common names: *veado-mateiro*, *veado-vermelho*, *veado-pardo*, *suaçupita* (Port.); red brocket deer (Eng.).

Records (7 localities and 13 specimens): Cachimbo: MZUSP 8039 (skin; female); Caxiricatuba, Rio Tapajós: 5483 (skin; female); Capim, BR-010, km 94: 9627 (skin and skull; female), 9628 (skull; female), 9629 (skin and skull; female), 9630 (skin and skull; male), 9631 (skin and skull; female); Fordlândia: 13562 (skin and skull; female); Itaituba, Parque Nacional da Amazônia: 13570 (skull; male); Lago Jacaré, Rio Trombetas: 10713 (skin and skull; female); Vila Bravo, Rio Tocantins: 13494 (skull; unknown sex), 13516 (skin; unknown sex), 19996 (skull; unknown sex).

Conservation status: ICMBio (2018): DD; IUCN (2019): DD.

Mazama nemorivaga (F. Cuvier, 1817)

Common names: *veado-roxo*, *fuboca* (Port.); Amazonian brown brocket deer, small brown brocket deer (Eng.).

Records (5 localities and 26 specimens): Caxiricatuba, Rio Tapajós: MZUSP 4994 (skin; male), 4995 (skin; unknown sex), 4997 (skin and skull; male), 4998–4999 (skin; female), 5177 (skin; female), 5260 (skin and skull; female), 5261 (skin and skull; male), 7163 (skull; female), 7165 (skull; male), 7263 (skin; unknown sex), 13559 (skull; male); Fordlândia: 10150 (skin and skull; female), 13563 (skin and skull; male), 13573 (skin and skull; female), 13575 (skin and skull; male), 13576 (skin and skull; female), 13577–13579 (skin and skull; male); Pimental: 19994 (skull; unknown sex); Rio Curuá-Una (mouth): 5262 (skin and skull; female); Tauari, Rio Tapajós: 13564 (skin and skull; male), 13565 (skin and skull; female), 13566 (skin and skull; male), 13567 (skin and skull; female).

Conservation status: ICMBio (2018): DD; IUCN (2019): LC.

Suborder Suina Gray, 1868
Family Tayassuidae Palmer, 1897

Genus *Dicotyles* Cuvier, 1816

Dicotyles tajacu (Linnaeus, 1758)

Common names: *caititu*, *cateto*, *porco-do-mato* (Port.); collared peccary (Eng.).

Records (7 localities and 9 specimens): Aruã, Rio Arapiuns: MZUSP 5339 (skin and skull; female); Cametá, Rio Tocantins: 5338 (skin and skull; female); Capim, BR-010, km 93: 8942 (skull; male); Ilha de Nova Olinda, Rio Tapajós: 20022 (skull; unknown sex); Rio Curuá (mouth): 5335 (skin; male), 5340 (skin and skull; female); Transamazônica km 80, near Itaituba: 20019 (skull; unknown sex); Vila Bravo, Rio Tocantins: 13488 (skin and skull; unknown sex), 13490 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: Acosta *et al.* (2020) solved the nomenclatural issues involving peccaries and according to these authors the valid genus for the collared peccary is *Dicotyles* Cuvier, 1816, with *Pecari* Reichenbach, 1835 as its junior synonym.

Genus *Tayassu* Fischer, 1814

Tayassu pecari (Link, 1795)

Common names: *queixada*, *porco-do-mato* (Port.); white-lipped peccary (Eng.).

Records (6 localities and 15 specimens): Cachimbo: MZUSP 8087 (skull; female); Caxiricatuba, Rio Tapajós: 5437 (skin and skull; male), 5594 (skin and skull; male), 5597 (skin and skull; male), 5598 (skin; male), 5599 (skin and skull; male); Fordlândia: 20014 (skin and skull; male); Parque Nacional da Amazônia, Rio Tapajós: 20016 (skull; unknown sex), 20017 (skull; unknown sex); Uruá, Rio Tapajós: 20018 (skull; unknown sex), 20020 (mandible; unknown sex), 20021 (partial skull; unknown sex); Vila Bravo, Rio Tocantins: 13487 (skull; unknown sex), 13489 (skin and skull; unknown sex), 13491 (skin, skull and partial skeleton; female).

Conservation status: ICMBio (2018): VU A2abcde+3abcde; IUCN (2019): VU A2bcde+3bcde.



Suborder Whippomorpha Wadell, Okada &
Hasegawa, 1999

Infraorder Cetacea Brisson, 1762

Family Delphinidae Gray, 1821

Genus *Sotalia* Gray, 1866

Sotalia fluviatilis (Gervais & Deville, 1853)

Common names: *tucuxi*, *pirajaguara*, *boto-preto* (Port.); *tucuxi* (Eng.).

Records (2 localities and 3 specimens): Lago Jacaré, Rio Trombetas: MZUSP 18946 (skull; female), 19913 (skull; unknown sex); Oriximiná: 18924 (skeleton; female).

Conservation status: ICMBio (2018): NT; IUCN (2019): DD.

Sotalia guianensis (Van Beneden, 1864)

Common names: *boto-cinza* (Port.); Guiana dolphin (Eng.).

Records (2 localities and 2 specimens): Maracanã, Ilha de Maiandeuá, Algodoal: MZUSP 27383 (skull; unknown sex); Marapanim, Marudá: 28413 (partial skull; unknown sex).

Conservation status: ICMBio (2018): VU A3bcd; IUCN (2019): NT A2d+3d+4d.

Family Iniidae Gray, 1846

Genus *Inia* d'Orbigny, 1834

Inia geoffrensis (Blainville, 1817)

Common names: *boto*, *boto-cor-de-rosa*, *boto-rosa*, *boto-vermelho* (Port.); *boto*, Amazon river dolphin, pink river dolphin (Eng.).

Records (2 localities and 2 specimens): Lago Jacaré, Rio Trombetas: MZUSP 18871 (skull; male); Taperinha: 18883 (skull; female).

Conservation status: ICMBio (2018): EN A3cde; IUCN (2019): EN A2acd+3cd+4acd.

Comments: traditionally, a single polytypic species has been recognized for Amazonian river dolphins, but the number of subspecies is a matter of debate, with

authors recognizing two subspecies *I. g. geoffrensis* and *I. g. boliviensis* (d'Orbigny, 1834) (Committee on Taxonomy, 2017), while others recognize a third *I. g. humboldtiana* Pilleri & Gihl, 1977 (Mead & Brownell Jr., 2005). Moreover, for some authors (Martínez-Agüero *et al.*, 2006) at least one of these subspecies (*I. g. boliviensis*) would be a full species. Recently some studies (Hrbek *et al.*, 2014; Siciliano *et al.*, 2016) have pointed out that the populations present in the Rio Araguaia Basin are a valid species, named *I. araguaiaensis* Hrbek, da Silva, Dutra & Farias, 2014, which is not represented in the MZUSP.

Order Perissodactyla Owen, 1848

Family Tapiridae Gray, 1821

Genus *Tapirus* Brisson, 1762

Tapirus terrestris (Linnaeus, 1758)

Common names: *anta*, *tapir* (Port.); lowland tapir, South American tapir, Brazilian tapir (Eng.).

Records (3 localities and 5 specimens): Ilha da Nova Olinda, Rio Tapajós: MZUSP 20037 (skull; unknown sex); Lago Jacaré, Rio Trombetas: 10715 (skull; unknown sex), 20035 (skin and skull; female), 20036 (skin and skull; male); Transamazônica km 66, Parque Nacional da Amazônia: 20033 (skull; unknown sex).

Conservation status: ICMBio (2018): VU A2bcd+3bcd; IUCN (2019): VU A2cde+3cde.

Comments: Cozzuol *et al.* (2013) described a new species of tapir from Brazilian and Colombian Amazon, named as *Tapirus kabomani* Cozzuol, Clozato, Holanda, Rodrigues, Ienow, Thoisy, Redondo & Santos, 2013. However, the validity of this species has been questioned by some authors (Voss *et al.*, 2014; Ruiz-García *et al.*, 2016) due to morphologic and genetic similarities with *T. terrestris*. Thus, here we provisionally treat *T. kabomani* as a junior synonym for *T. terrestris*.

Order Primates Linnaeus, 1758

Suborder Haplorhini Pocock, 1918



Family Cebidae Bonaparte, 1821
Subfamily Callitrichinae Gray, 1821

Genus *Mico* Lesson, 1840

Mico argentatus (Linnaeus, 1771)

Common names: *sagui-branco*, *sagui-argênteo* (Port.); silvery marmoset (Eng.).

Records (8 localities and 55 specimens): Cametá, Rio Tocantins: MZUSP 4833 (skin and skull; female), 4916 (skin and skull; female), 4967 (skin and skull; male), 4968 (skin and skull; female); Caxiricatuba, Rio Tapajós: 4829 (skin; female), 4865 (skin and skull; female), 4900 (skin and skull; male), 4901 (skin and skull; female), 4902 (skin; female), 4903 (skin; male), 4904 (skin and skull; female), 4906–4907 (skin and skull; female), 4908–4909 (skin and skull; male), 4911 (skin and skull; male), 4913 (skin and skull; female), 4940 (skin and skull; male), 4959 (skin and skull; female), 4964–4966 (skin and skull; male), 4969–4970 (skin and skull; male), 4972–4974 (skin and skull; male), 4975 (skin and skull; female), 5007 (skin and skull; male), 5026 (skin and skull; female), 11407 (skin and skull; male), 18865 (skull; female); Piquiatuba, Rio Tapajós: 4840 (skin and skull; male), 4899 (skin and skull; male), 4905 (skin and skull; female), 4910 (skin and skull; female), 4914 (skin and skull; female), 4915 (skin and skull; male), 4918 (skin and skull; male); Os Patos: 11367 (skin, skull and skeleton; female); Santarém: 6633 (skin; female); Santarém, Fazenda Marucu: 3588–3589 (skin and skull; female), 3590 (skull; female), 3591 (skin and skull; female), 3592 (skull; male), 3593 (skin and skull; male), 3594–3596 (skin and skull; female); Santarém: 4971 (skin and skull; male); Tauari, Rio Tapajós: 4313 (skin and skull; male), 11272 (skin and skull; male), 11307–11308 (skin and skull; male); unknown locality: 3587 (skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Mico humeralifer (É. Geoffroy Saint-Hilaire, 1812)

Common names: *sagui-de-tufos* (Port.); black and white tassel-ear marmoset (Eng.).

Records (7 localities and 67 specimens): Arara, Rio Tapajós: MZUSP 11396 (skin; male); Barreira, Rio Tapajós: 11360 (skin and skull; male); Boim: 4927 (skin; female), 7108 (skull; female); Brasília Legal, Rio Tapajós: 11294 (skin and skull; male), 11298 (skin and skull; female), 11299 (skin and skull; male), 11300 (skin and skull; female), 11301 (skin and skull; female), 11306 (skin and skull; female), 11309–11310 (skin and skull; male), 11312 (skin and skull; female); Itaituba: 3577 (skin and skull; female), 3578–3580 (skin and skull; male), 3581 (skull; female), 3582 (skin and skull; male), 3583 (skull; male), 3584 (skin and skull; female), 3585–3586 (skin and skull; male); Monte Cristo, Rio Tapajós: 3597 (skull; male); Santa Rosa, Ilha de Urucurituba: 11397 (skin and skull; male), 11398 (skin and skull; female), 11399 (skin and skull; male), 11400 (skin and skull; female), 11401 (skin and skull; male); Sumaúma, Rio Tapajós: 11254 (skin and skull; male), 11264 (skin and skull; female), 11265–11266 (skin and skull; male), 11267 (skin and skull; unknown sex), 11268–11270 (skin and skull; male), 11271 (skin and skull; female), 11297 (skin and skull; male), 11302 (skin and skull; male), 11303–11304 (skin and skull; female), 11332 (skin and skull; male), 11333 (skin and skull; female); Transamazônica, km 62, near Itaituba: 18866 (skin and skull; male); Urucurituba, Rio Tapajós: 10095–10099 (skin and skull; male); 11249–11253 (skin and skull; male), 11255 (skin and skull; female), 11256 (skin and skull; male), 11257–11258 (skin and skull; female), 11259 (skin and skull; male), 11260 (skin and skull; female), 11261–11262 (skin and skull; male), 11263 (skin and skull; female), 11356–11358 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): DD.

Mico leucippe Thomas, 1922

Common names: *sagui-de-orelha-nua-branco* (Port.); white marmoset, golden-white bare-ear marmoset (Eng.).

Records (6 localities and 22 specimens): Fordlândia: MZUSP 10093 (skin and skull; male), 11248 (skin and skull; female), 11279–11280 (skin and skull; male), 11281 (skin and

skull; female), 11291 (skin and skull; male), 11295–11296 (skin and skull; female), 11305 (skin and skull; female), 11311 (skin and skull; male); Fordlândia, Fazenda Nova: 11402 (skin; male), 11403 (skin and skull; female); Lago Arapá, Rio Tapajós: 9965 (skin; male); Monte Cristo, Rio Tapajós: 3598–3599 (skin and skull; male), 3600 (skin and skull; female), 3602–3603 (skin and skull; female), 11361 (skin and skeleton; female); Pedreira, Rio Tapajós: 9964 (skin; male); Tavio, Rio Tapajós: 10094 (skin and skull; female), 11394 (skin; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): VU A2c.

Genus *Saguinus* Hoffmannsegg, 1807

Subgenus *Saguinus* Hoffmannsegg, 1807

Saguinus midas (Linnaeus, 1758)

Common names: *sagui-de-mãos-douradas*, *sagui-de-mãos-amarelas* (Port.); golden-handed tamarin, red-handed tamarin, Midas tamarin (Eng.).

Records (8 localities and 46 specimens): Boiuçu: MZUSP 4830 (skin and skull; female), 4834 (skin and skull; male), 4863 (skin and skull; male), 4868 (skin; male), 4869 (skin and skull; male), 4872 (skin and skull; female), 4877 (skin and skull; male), 4930 (skin and skull; male), 4935–4936 (skin and skull; male), 4941 (skin and skull; female), 4944 (skin and skull; female), 4948 (skin and skull; female), 5000 (skin and skull; male), 5013 (skin and skull; male), 5021 (skin and skull; female); Igarapé Bravo, Rio Amazonas: 4866 (skin and skull; female), 4867 (skin and skull; male), 4870 (skin and skull; female), 4871 (skin and skull; male), 4873–4875 (skin and skull; female), 4876 (skin and skull; male), 4878–4879 (skin and skull; male), 4958 (skin and skull; male), 4960 (skin and skull; female), 4961 (skin and skull; male), 4962 (skin; male), 4963 (skin and skull; female); Cacaoal Grande: 3604 (skin and skull; male), 3605 (skin and skull; female); Curuá, Lago Cuiteuá, Rio Amazonas: 4306 (skin; female); Óbidos: 3606–3607 (skin and skull; female), 3608–3610 (skin and skull; male),

3611–3612 (skull; male); Oriximiná: 11343–11344 (skin and skeleton; female); Paissandu, Igarapé Bom Jardim: 7170 (skull; female); Rio Cuminá-Miri (mouth): 11341 (skin and skull; male), 11342 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: Gregorin & de Vivo (2013) examined two specimens (MZUSP 2867 and 7170) from Bom Jardim, Pará state, identifying them as *Saguinus ursula* Hoffmannsegg, 1807, but this locality falls within the geographical distribution of *S. midas*. One of these specimens cited by Gregorin & de Vivo (2013), MZUSP 2867, was not found in the collection and this registration number is occupied by a *Didelphis aurita* Wied, 1826 (from Bauru, São Paulo state), which was discarded decades ago due to damages on the skin.

Saguinus niger (É. Geoffroy, 1803)

Common names: *sagui-una*, *sagui-preto* (Port.); Western black tamarin, Western black-handed tamarin (Eng.).

Records (5 localities and 24 specimens): Cametá, Rio Tocantins: MZUSP 4749 (skin; male), 4750 (skin and skull; male), 4790 (skin and skull; male), 4792–4793 (skin and skull; female), 4794 (skin and skull; male), 4795–4796 (skin and skull; female), 4825 (skin and skull; male), 4922 (skin and skull; male), 4926 (skin and skull; male), 4933 (skin and skull; female), 4937 (skin and skull; female), 4946 (skin and skull; male), 4950 (skin and skull; male), 4951 (skin and skull; female), 4954 (skin and skull; male), 4955 (skin and skull; female), 20042 (skin and skull; female); Cachoeira do Espelho, Rio Xingu: 21321 (skin and skeleton; female), 21322 (skin and skeleton; male); Rio Bacajá (mouth): 25447 (skin, skull and skeleton; male); Santana do Araguaia, Fazenda Fartura: 35403 (skin; female); Santo Antonio, Rio Tocantins: 13471 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): VU A4c; IUCN (2019): VU A2c.



Saguinus ursula Hoffmannsegg, 1807

Common names: *sagui-una*, *sagui-preto* (Port.); Eastern black tamarin, Eastern black-handed tamarin (Eng.).

Records (2 localities and 43 specimens): Belém: MZUSP 10658 (skin and skull; female), 11247 (skin and skull; male), 19035–19061 (skull; unknown sex), 19076 (skull; unknown sex); BR-010, km 93: 8923–8928 (skin and skull; male), 8929–8933 (skin and skull; female), 8934 (skin and skull; male), 8935 (skin and skull; female).

Conservation status: ICMBio (2018): VU A4c (as part of *S. niger*); IUCN (2019): VU A2c (as part of *S. niger*). Due to its being recently split from *Saguinus niger*, this species was not included in the assessments of ICMBio (2018) and IUCN (2019).

Comments: this species was revalidated by Gregorin & de Vivo (2013). We follow Garbino & Martins-Junior (2018, p. 168) in using *Saguinus ursula* instead of *Saguinus ursulus* because “this species was named after a proper noun and treat it as a noun in apposition”.

Subfamily Cebinae Bonaparte, 1841

Genus *Cebus* Erxleben, 1777

Subgenus *Cebus* Erxleben, 1777

Cebus (Cebus) kaapori Queiroz, 1992

Common names: *caiarara*, *caicara* (Port.); Kaapori capuchin (Eng.).

Records (1 locality and 1 specimen): Bragança: MZUSP 8252 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): CR A2acd; IUCN (2019): CR A2cd.

Comments: MZUSP 8252 was originally labeled and identified as *Cebus olivaceus nigrivittatus* (Wagner, 1848) by C.O.C. Vieira. However, it was considered as *C. (Cebus) kaapori* by Silva Jr. (2001). Furthermore, Silva Jr. *et al.* (2010) reported that the specimen was acquired at a street fair in Belém and the original locality, indicated as Bragança, is doubtful.

Cebus (Cebus) unicolor Spix, 1823

Common names: *caiarara*, *caicara* (Port.); Spix's white-fronted capuchin (Eng.).

Records (2 localities and 2 specimens): Aruã, Rio Arapiuns: MZUSP 5133 (skin and skull; female); Sumaúma, Rio Tapajós: 7175 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC [as a synonym of *Cebus albifrons* (Humboldt, 1812)].

Comments: Silva Jr. (2001) did not recognize *C. unicolor* as a distinct species, treating it as a junior synonym of *C. albifrons*. In his revision, Silva Jr. (2001) identified MZUSP 5133 as *C. apella* (Linnaeus, 1758) and MZUSP 7175 as *C. albifrons*, following the identification on the labels by C.O.C. Vieira. Here we follow Mittermeier *et al.* (2013) in recognizing *C. unicolor* as a valid species. We identified both MZUSP 5133 and 7175 as *C. unicolor*.

Subgenus *Sapajus* Kerr, 1792

Cebus (Sapajus) apella (Linnaeus, 1758)

Common names: *macaco-prego* (Port.); tufted capuchin (Eng.).

Records (26 localities and 113 specimens): Aruã, Rio Arapiuns: MZUSP 5674 (skin and skull; male), 5675 (skin and skull; female); Barreira, Rio Tapajós: 19562 (skin and skull; female); Belém: 24250 (skull; unknown sex); Boim: 4291 (skin and skull; male); Boiçu: 5126 (skin and skull; female), 5134 (skin and skull; male); Bom Jardim, Rio Amazonas: 5128 (skin and skull; male), 5132 (skin and skull; male); Capim, BR-010, km 93: 8920 (skin and skull; male); Brasília Legal, Rio Tapajós: 19561 (skin and skull; male); Igarapé Bravo, Rio Amazonas: 5114 (skin; male), 5115 (skin and skull; male), 5116–5117 (skin and skull; female), 10546 (skull; male); Cachoeira do Espelho, Rio Xingu: 21325 (skin and skull; male), 22794 (skeleton; unknown sex); Caxiricatuba, Rio Tapajós: 5118 (skin and skull; female), 5119 (skin; female), 5120–5121 (skin and skull; male), 5122–5123 (skin; male), 5752–5753 (skin and skull; male), 10535 (skull; female), 10537 (skull; male), 10540–10541

(skull; male), 19560 (skin; male); Curral Grande: 3636 (skin and skull; female); Fordlândia: 19564 (skin and skull; male), 19565 (skin and skull; female), 19566 (skin and skull; male), 19567 (skin and skull; female), 19568–19573 (skin and skull; male), 19574 (skin and skull; female), 19575–19577 (skin and skull; male), 19578 (skin and skull; female), 19579 (skin and skull; male), 19580 (skin and skull; female), 19581 (skin and skull; male), 19582 (skin and skull; female), 19583–19585 (skin and skull; male), 19586 (skin and skull; unknown sex), 19587–19588 (skin and skull; male), 19589 (skin and skull; female), 19590–19593 (skin and skull; male), 19594–19595 (skin and skull; female), 19596 (skin and skull; male), 19597–19599 (skin and skull; female), 19645 (skeleton; female), 19646 (skull; female); Ilha de Nova Olinda, Rio Tapajós: 24252 (skull; unknown sex); Itupiranga, Rio Tocantins: 19617 (skin and skull; male); Largo do Souza, Rio Iiriri: 25446 (skin, skull and skeleton; male); Monte Cristo, Rio Tapajós: 19563 (skin and skull; female); Paissandu, Igarapé Bom Jardim: 8956 (skin and skull; female), 8957–8959 (skin and skull; male); Piquiatuba, Rio Tapajós: 10503 (skull; female); Rio Bacajá (mouth): 25451 (skin, skull and skeleton; male), 25452 (skin and skull; male); Rio Curuá (mouth): 5127 (skin; unknown sex), 5129 (skin and skull; male), 5130 (skin and skull; female), 5131 (skin; female), 5464 (skin; female), 5466 (skin; female), 10499 (skull; female), 10536 (skull; male), 10538 (skull; female), 10544 (skull; female); Rio Pucuruí, tributary of Rio Tocantins: 13482 (skin and skull; unknown sex); Santarém, Fazenda Maruá: 3633–3634 (skin; male); Santa Rosa, Ilha de Urucurituba: 19602–19603 (skin and skull; female); Santo Antônio, Rio Tocantins: 13480 (skin and skull; male); Urucurituba, Rio Tapajós: 19600–19601 (skin and skull; male), 19604–19606 (skin and skull; male), 19607–19608 (skin and skull; female), 19609 (skin and skull; male), 19610 (skin and skull; female), 19611–19612 (skin and skull; male), 19613 (skin and skull; female), 19614 (skin and skull; male), 19615 (skull and skeleton; female), 19616 (skull and skeleton; male), 19644 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Subfamily Saimiriinae Miller, 1912

Genus *Saimiri* Voigt, 1831

Saimiri collinsi Osgood, 1916

Common names: *macaco-de-cheiro*, *mico-de-cheiro*, *macaco-mão-de-ouro* (Port.); Collins' squirrel monkey (Eng.).

Records (15 localities and 105 specimens): Belém: MZUSP 19137 (skin and skull; female), 19138–19140 (skin; female); Bom Jardim, Rio Amazonas: 5517 (skin and skull; male), 5519 (skin and skull; female), 5520–5521 (skin and skull; male); Capim, BR-010, km 93: 8921 (skin and skull; male), 8922 (skin and skull; female); Cachoeira do Espelho, Rio Xingu: 25435 (skin, skull and skeleton; male); Cametá: 5531 (skin and skull; male); Caxiricatuba, Rio Tapajós: 5523 (skin and skull; male), 5525–5526 (skin and skull; male), 5527 (skin and skull; female), 5528 (skin; unknown sex), 5529 (skin and skull; male), 5530 (skin and skull; unknown sex), 10515 (skull; female); Curral Grande: 3616 (skull; unknown sex), 3618 (skull; male), 3619 (skull; female), 3620 (skin and skull; female); Fordlândia: 10101–10102 (skin and skull; female), 19142 (skin and skull; female), 19143–19144 (skin and skull; male), 19145 (skin and skull; female), 19146–19150 (skin and skull; male), 19151–19153 (skin and skull; female), 19711–19714 (skin and skull; male), 19715 (skin; female), 19717 (skull and skeleton; female), 19718–19719 (skull and skeleton; male), 19722 (skull; unknown sex), 19723 (skin; male), 19724–19725 (skin and skull; male); Igarapé Taperebá, Ilha de Marajó: 8677 (skin and skull; female), 8678 (skin and skeleton; male), 19704–19705 (skull; male); Itapoama, Rio Tapajós: 10100 (skin and skull; female); Monte Cristo, Rio Tapajós: 3613–3614 (skin and skull; male); Posto DNERu (Departamento Nacional de Endemias Rurais), Rio Tocantins: 19709 (skin; male); Posto DNERu (Departamento Nacional de Endemias Rurais), Rio Tracajuba: 19710 (skin and skull; unknown



sex); Piquiatuba, Rio Tapajós: 10531 (skull; female); Rio Bacajá (mouth): 25436–25438 (skin, skull and skeleton; male); Santo Antônio, Rio Tocantins: 13473 (skin and skull; unknown sex); Taperinha: 3615 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC [as a synonym of *S. sciureus* (Linnaeus, 1758)].

Comments: MZUSP 5521 from Bom Jardim has the same catalog number as a specimen of *Saimiri sciureus* from Boiuçu.

Saimiri sciureus (Linnaeus, 1758)

Common names: *macaco-de-cheiro*, *mico-de-cheiro*, *macaco-mão-de-ouro* (Port.); Guianan squirrel monkey, common squirrel monkey (Eng.).

Records (6 localities and 17 specimens): Boiuçu: MZUSP 5219 (skin and skull; male), 5220 (skin and skull; female), 5221 (skin and skull; male), 5224 (skin; male), 5225 (skin and skull; female), 5226 (skin and skull; male), 5227 (skin and skull; female); Igarapé Bravo, Rio Amazonas: 5222 (skin and skull; female), 5523 (skin and skull; female); Igarapé Piaba: 4315 (skin and skull; male); Jaguara: 8899 (skin and skull; male), 8900–8901 (skin and skull; female), 8902 (skin and skull; male); Lago Paru, Rio Trombetas: 19135 (skin and skull; female), 19141 (skin and skull; male); Paissandu, Igarapé Bom Jardim: 8955 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: The MZUSP 5521 from Boiuçu has the same catalog number as a specimen of *Saimiri collinsi* from Bom Jardim.

Saimiri sp.

Common names: *macaco-de-cheiro*, *mico-de-cheiro*, *macaco-mão-de-ouro* (Port.); squirrel monkey (Eng.).

Records (*Unknown locality and 1 specimen*): MZUSP 6786 (skin and skull; male).

Conservation status: not applicable.

Comments: identification remains as indeterminate due to the lack of detailed information regarding this

specimen. No precise collection locality provided. The specimen is an old skin, which lost its original coloration, an important diagnostic character (Mercês *et al.*, 2015).

Family Aotidae Elliot, 1913

Genus *Aotus* Illiger, 1811

Aotus infulatus (Kuhl, 1920)

Common names: *macaco-da-noite*, *macaco-da-noite-de-pescoço-vermelho* (Port.); feline night monkey (Eng.).

Records (8 localities and 38 specimens): BR-010, km 92: MZUSP 10468 (skin and skull; female); Cachoeira do Espelho, Rio Xingu: 21326 (skin, skull and skeleton; male); Caxiricatuba, Rio Tapajós: 5046 (skin and skull; male); Fordlândia: 10156 (skin and skull; male), 10157 (skin and skull; female), 11513–11515 (skin and skull; female), 11516 (skin and skull; male), 11517 (skin and skull; female), 11518 (skin and skull; male), 11519–11520 (skin and skull; female), 11521–11523 (skin and skull; male), 11524–11527 (skin and skull; female), 11528 (skin and skull; male), 11530 (skull and skeleton; female), 11532 (skull and skeleton; unknown sex), 11533 (skull and skeleton; female); Largo do Souza, Rio Iriri: 25439 (skin and skull; female), 25440 (skin and skull; male); Monte Cristo, Rio Tapajós: 11504 (skin and skull; female), 11505–11506 (skin, skull and skeleton; female), 11507 (skin and skull; female), 11508 (skin, skull and skeleton; female), 11509 (skin and skull; male), 11510–11511 (skin, skull and skeleton; female), 11512 (skin and skull; female); Piquiatuba, Rio Tapajós: 5045 (skin and skull; female); Santo Antônio, Rio Tocantins: 13477 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): NT [as *Aotus azarae infulatus* (Kuhl, 1820)]. The recent taxonomic changes (see Comments) were not included in the latest conservation assessments by ICMBio (2018) and IUCN (2019). Therefore, this species was classified by these agencies as *Aotus azarae infulatus*.

Comments: Hershkovitz (1983) recognized *Aotus infulatus* as a full species, but Ryland *et al.* (2000), Groves (2001)

and Fernandez-Duque *et al.* (2013) classified it as a subspecies of *Aotus azarae*. However, Paglia *et al.* (2012) followed the opinion of Hershkovitz (1983).

Family Pitheciidae Mivart, 1865

Subfamily Callicebinae Pocock, 1925

Genus *Callicebus* Thomas, 1903

Subgenus *Plecturocebus* Byrne, Rylands, Carneiro, Lynch-Alfaro, Bertuol, da Silva, Messias, Groves, Mittermeier,

Farias, Hrbek, Schneider, Sampaio & Boubli, 2016

Callicebus (Plecturocebus) hoffmannsi (Thomas, 1908)

Common names: *guigó*, *sauá*, *zogue-zogue* (Port.); Hoffmanns's titi (Eng.).

Records (6 localities and 20 specimens): Aruã, Rio Arapiúns: MZUSP 5091 (skin and skull; male); Brasília Legal, Rio Tapajós: 11715 (skin and skull; male), 11721 (skin and skull; female), 11726 (skin and skull; male); Fordlândia: 11731 (skin and skull; female), 11839 (skin and skull; unknown sex); Itaituba: 3574 (skull; female), 3575 (skin and skull; female), 3576 (skin and skull; male); Sumaúma, Rio Tapajós: 11741 (skin and skull; female), 11745 (skin and skull; female); Urucurituba, Rio Tapajós: 19534 (skull; unknown sex); 10154–10155 (skin and skull; female), 11743 (skin and skull; female), 11815 (skin and skull; female), 11833 (skin and skull; male), 11834 (skin and skull; female), 11835–11836 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: according to Hershkovitz (1990), this species does not occur on the east bank of Rio Tapajós. Therefore, the two specimens from Fordlândia, a district located on the east bank of the river, are probably mislabeled or had been transferred to this bank in an oxbow cutoff (Hershkovitz, 1990).

Callicebus (Plecturocebus) moloch (Hoffmannsegg, 1807)

Common names: *zogue-zogue*, *sauá-de-barriga-vermelha*, *sauá-moreno* (Port.); red-bellied titi, dusky titi, red-bellied titi (Eng.).

Records (14 localities and 73 specimens): Bom Jardim, Rio Amazonas: MZUSP 5198 (skin; female); 5200 (skin and skull; female); Cachimbo: 8062 (skin and skull; male); Caxiricatuba, Rio Tapajós: 5143 (skin and skull; male), 5144 (skin and skull; female), 5146 (skin and skull; female), 5147 (skull; female), 5148 (skull; male), 5149 (skull; female), 5150–5151 (skull; male), 5152 (skull; female), 5157 (skull; female), 5159 (skin and skull; male), 5165 (skin and skull; male), 5166 (skin and skull; female), 5167 (skin and skull; male), 5169 (skin and skull; female), 24735 (skin and skull; male); Fordlândia: 10151 (skin and skull; female), 10153 (skin and skull), 11716–11718 (skin and skull; male), 11719–11720 (skin and skull; female), 11723 (skin and skull; female), 11724 (skin and skull; male), 11725 (skin and skull; female), 11727 (skin and skull; female), 11728 (skin; female), 11729 (skin and skull; female), 11730 (skin and skull; male), 11732 (skin and skull; male), 11733 (skin and skull; female), 11734 (skin and skull; male), 11735 (skin and skull; female), 11736 (skin and skull; male), 11737 (skin and skull; female), 11738–11739 (skin and skull; male), 11740 (skin and skull; female), 11742 (skin and skull; female), 11744 (skin and skull; female), 11813–11814 (skin and skull; female), 11816 (skin and skull; female), 11837 (skin; male), 11838 (skin and skull; male), 11840 (skin and skull; female), 11841 (skin; female), 19690 (skull; female); Itaituba: 3566 (skin and skull; male); Itapoama, Rio Tapajós: 10152 (skin and skull; male); Monte Cristo, Rio Tapajós: 3567 (skin and skull; male), 3568 (skin; female); 3569 (skin and skull; female), 11817 (skin and skull; male); Piquiatuba, Rio Tapajós: 5142 (skin and skull; female), 5153 (skin; male), 5155 (skin; female), 5156 (skin and skull; female), 5158 (skin and skull; female), 5160 (skin and skull; male); Rio Bacajá (mouth): 25444 (skin and skull; female), 25445 (skin and skull; male); Rio Curuá (mouth): 5196–5197 (skin and skull; female), 5202 (skin and skull; female); Santana do Araguaia, Fazenda Fartura: 35406 (skin; female); Santarém, Fazenda Marucu: 3571 (skin and skull; female), 3572 (skin and skull; male); Santo Antônio, Rio Tocantins: 13472 (skin and skull; unknown sex); Taperinha: 3570 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Callicebus (Plecturocebus) vieirai (Gualda-Barros, Nascimento & Amaral, 2012)

Common names: *guigó-de-vieira*, *sauá-de-vieira*, *zogue-zogue-de-vieira* (Port.); Vieira's titi (Eng.).

Records (1 locality and 3 specimens): Largo do Souza, Rio Iriri: MZUSP 25441 (skin and skull; female), 25442–25443 (skin and skull; male) [paratypes].

Conservation status: ICMBio (2018): DD; IUCN (2019): DD.

Comments: this species was described based on specimens held in the MZUSP since 1997. Gualda-Barros *et al.* (2012) named the species after Dr. Octaviano da Cunha Vieira, former Curator of the Mammal Collection of the MZUSP from 1941 to 1958.

Subfamily Pitheciinae Mivart, 1865

Genus *Chiropotes* Lesson, 1840

Chiropotes albinasus (I. Geoffroy & Deville, 1848)

Common names: *cuxiú-de-nariz-vermelho* (Port.); red-nosed bearded saki, red-nosed saki, white-nosed bearded saki, white-nosed saki (Eng.).

Records (8 localities and 31 specimens): Aruã, Rio Arapiuns: MZUSP 5304 (skin and skull; female), 5305 (skin and skull; male), 5307 (skin; male), 5309 (skin and skull; male), 5310 (skin and skull; female), 5313 (skin and skull; female); Barreira, Rio Tapajós: 19653 (skin; male); Cachimbo: 8008 (skin; female), 8009 (skin and skull; female), 8069 (skin and skull; female); Caxiricatuba, Rio Tapajós: 5311–5312 (skin and skull; female); Fordlândia: 12885 (skin and skull; female), 12886 (skin; female), 19660 (skin and skull; female), 19661–19662 (skin and skull; male), 19664–19667 (skin and skull; female), 19668 (skin; male); Monte Cristo, Rio Tapajós: 3626 (skin and skull; male), 19654 (skin, skull and skeleton; female), 19655–19656 (skin, skull and skeleton; male), 19657–19658 (skin and

skull; female), 19659 (skin, skull and skeleton; male); Piquiatuba, Rio Tapajós: 5308 (skin and skull; female); Sumaúma, Rio Tapajós: 19663 (skin and skull; female).

Conservation status: ICMBio (2018): NT; IUCN (2019): EN A3cd.

Chiropotes sagulatus (Trail, 1821)

Common names: *cuxiú-de-humboldt* (Port.); Guianan bearded saki (Eng.).

Records (2 localities and 2 specimens): Cachoeira da Porteira, Rio Nhamundá: MZUSP 13632 (skull; male); Oriximiná: 19669 (skin, skull and skeleton; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): NA.

Chiropotes satanas (Hoffmannsegg, 1807)

Common names: *cuxiú-preto* (Port.); black-bearded saki (Eng.).

Records (1 locality and 8 specimens): Capim, BR-010, km 93: MZUSP 8912–8913 (skin and skull; female), 8914–8915 (skin and skull; male), 8916–8917 (skin and skull; female), 8918 (skin, skull and skeleton; female), 8919 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): CR A2cd; IUCN (2019): CR A2c+3c.

Chiropotes utahicki Hershkovitz, 1985

Common names: *cuxiú-de-uta-hick* (Port.); Uta Hick's bearded saki (Eng.).

Records (4 localities and 5 specimens): Cachoeira do Espelho, Rio Xingu: MZUSP 21323 (skin and skeleton; female), 21324 (skin and skeleton; male); Igarapé Águas da Saúde, Rio Tocantins: 23484 (skin and skull; male); Itupiranga, Rio Tocantins: 13523 (skin; male); Remansinho, Rio Tocantins: 23485 (skin and skull; female).

Conservation status: ICMBio (2018): VU A4cd; IUCN (2019): EN A3cd.

Comments: the specimen MZUSP 13523 was identified as *Chiropotes satanas satanas* by Philip Hershkovitz

in 1987, when he visited the MZUSP. However, in his previous work (Hershkovitz, 1985) he had identified the same specimen as *C. s. utahicki*. The pelage characters of specimen MZUSP 13523 have allowed us to identify it as *Chiropotes utahicki*.

Genus *Pithecia* Desmarest, 1804

Pithecia irrorata Gray, 1843

Common names: *parauacu*, *macaco-velho*, *macaco-cabeludo* (Port.); Gray's bald-faced saki (Eng.).

Records (2 localities and 2 specimens): Aruã, Rio Arapiuns: MZUSP 5549 (skin and skull; male) [Paratype of *Pithecia mittermeieri* Marsh, 2014]; Santarém, Fazenda Mararu, Rio Tapajós: 3632 (skin and skull; female).

Conservation status: ICMBio (2018): DD (as *Pithecia irrorata irrorata*); IUCN (2019): DD.

Comments: Hershkovitz (1987) recognized two subspecies for *Pithecia irrorata*: *P. i. irrorata* (Gray, 1843) and *P. i. vanzolinii* Hershkovitz, 1987. Subsequently Marsh (2014) raised these subspecies to species level and additionally proposed three putative new species from *P. irrorata*: *P. mittermeieri*, *P. pissinattii* Marsh, 2014 and *P. rylandsi* Marsh, 2014. However, Serrano-Villavicencio *et al.* (2019) concluded that these new putative species are not distinguished from each other and from *P. irrorata*, considering them junior synonyms of the latter.

Pithecia pithecia (Linnaeus, 1766)

Common names: *parauacu*, *parauacu-de-cara-branca*, *macaco-velho*, *macaco-cabeludo* (Port.); white-faced saki (Eng.).

Records (3 localities and 18 specimens): Boiuçu: MZUSP 5580 (skin and skull; male), 5582 (skin and skull; male), 5584–5585 (skin and skull; male), 5587 (skin and skull; female), 5591 (skin and skull; female), 5592 (skin and skull; male); Igarapé Bravo, Rio Amazonas: 5581 (skin and skull; male), 5583 (skin and skull; male), 5586 (skin and skull; male), 5588 (skin and skull; female), 5589 (skin and skull; male), 5590 (skin and skull; female); Óbidos: 3621

(skin and skull; male), 3622–3623 (skin and skull; female), 3624–3625 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: two subspecies are traditionally recognized, *P. p. pithecia* (Linnaeus, 1766) and *P. p. chrysocephala* (L. Geoffroy, 1850). Hershkovitz (1987) identified specimens from Pará as *P. p. chrysocephala*, but subsequent studies (Silva Jr. *et al.*, 2013) suggested that this taxon it is restricted to the Amazonas state (Negro-Nhamundá interfluvium), while *P. p. pithecia* is present in Pará (according to Hershkovitz, *P. p. pithecia* would present in the Guianas). Moreover, there is evidence of the existence of intermediate morphotypes in the region between the Rio Nhamundá and Rio Jari, supporting the recognition of subspecies (Silva Jr. *et al.*, 2013). On the other hand, Marsh (2014) elevated these two subspecies to full species status. Here we follow Silva Jr. *et al.* (2013).

Family Atelidae Gray, 1825

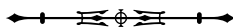
Subfamily Alouattinae Trouessart, 1897

Genus *Alouatta* Lacépède, 1799

Alouatta belzebul (Linnaeus, 1766)

Common names: *bugio-de-mãos-vermelhas*, *guariba-de-mãos-vermelhas*, *bugio-de-mãos-ruivas*, *guariba-de-mãos-ruivas* (Port.); red-handed howler (Eng.).

Records (8 localities and 22 specimens): Belém: MZUSP 19004 (skin and skull; male); Capim, BR-010, km 93: 8910 (skin, skull and hyoid; female), 8911 (skin and skull; female), 8936 (skin, skull and hyoid; female), 8937 (skin and skull; female), 8938 (skin and skull; male), 8939 (skull; male); Cametá, Rio Tocantins: 5256 (skin; female), 5405 (skin; male), 5406 (skin and skull; male), 5407 (skin, skull and hyoid; male), 5408 (skin, skull; female); 10489 (skull; female), 26831 (skull; male); Cachoeira do Espelho, Rio Xingu: 20927 (skin and skull; male), 20928 (skin; female), 20929 (skin and skull; male); Largo do Souza, Rio Iriri: 25448 (skin, skull and skeleton; male); Rio Amazonas:



19511 (fetus in formalin); Rio Bacajá (mouth): 25449 (skin, skull and hyoid; male), 25450 (skull, hyoid and skeleton; female); Santo Antônio, Rio Tocantins: 13483 (skin, skull and hyoid; female).

Conservation status: ICMBio (2018): VU A2cd; IUCN (2019): VU A2cd.

Alouatta discolor (Spix, 1823)

Common names: *bugio-de-mãos-vermelhas*, *guariba-de-mãos-vermelhas*, *bugio-de-mãos-ruivas*, *guariba-de-mãos-ruivas* (Port.); Spix red-handed howler (Eng.).

Records (10 localities and 68 specimens): Barreira: MZUSP 18972 (skin and skull; female); Boiuçú: 5472 (skin; male); Bom Jardim, Rio Amazonas: 5409–5410 (skin and skull; female), 5411 (skull; male), 5568 (skin and skull; male), 5572 (skin; female), 5573 (skin and skull; male), 5747 (skin and skull; female), 5748 (skin; female), 7110 (skull; female), 18996 (skull; male), 24833 (skin and skull; male); Caxiricatuba, Rio Tapajós: 5328 (skin and skull; female), 5565 (skin and skull; male), 5566 (skin, skull and hyoid; male), 5567 (skin and skull; male), 5570 (skin and skull; female), 6022 (skull; male), 10563 (skull; male), 10565 (skull; male), 18997 (skin; unknown sex), 19032 (skin; male), 19118 (skull; male); Fordlândia: 18966 (skin and skull; female), 18967 (skin, skull and hyoid; male), 18968–18970 (skin and skull; female), 18971 (skin, skull and hyoid; female), 18973–18974 (skin, skull and hyoid; female), 18975 (skin and skull; male), 18976 (skin, skull and hyoid; male), 18977 (skin, skull and hyoid; female), 18978 (skin and skull; female), 18979 (skin, skull and hyoid; male), 18981 (skin, skull and hyoid; female), 18982 (skin and skull; male), 18983 (skin, skull and hyoid; male), 18984 (skin, skull and hyoid; female), 18985 (skin, skull and hyoid; male), 18986 (skin, skull and hyoid; female), 18987 (skin, skull and hyoid; male), 18988 (skin and skull; male), 18989 (skin, skull and hyoid; female), 18991 (skin, skull and hyoid; male), 18992 (skin, skull and hyoid; female), 18993 (skin, skull and hyoid; male), 18994–18995 (skin, skull and hyoid; female), 18998 (skin; female), 18999–19000 (skin, skull and hyoid;

male); Monte Cristo, Rio Tapajós: 3645 (skin; skin, skull and hyoid; female); Piquiatuba, Rio Tapajós: 5329–5330 (skin and skull; male), 5333 (skin and skull; male), 5574 (skin and skull; male), 10495 (skull and hyoid; male); Rio Tapajós: 3644 (skin, skull and hyoid; male), 24256 (skull and hyoid; male); Serra do Cachimbo: 8063 (skin, skull and hyoid; male), 8066 (skin, skull and hyoid; male), 8067 (skull; male), 8068 (skin; female), 8071 (skin and skull; female); Taperinha: 18935 (skin, skull and hyoid; male).

Conservation status: ICMBio (2018): VU A4cd; IUCN (2019): VU A2c.

Alouatta macconnelli (Linnaeus, 1766)

Common names: *bugio-vermelho*, *guariba-vermelho* (Port.); Guianan red howler (Eng.).

Records (8 localities and 33 specimens): Boiuçú: MZUSP 5095 (skin and skull; female), 5096 (skin, skull and hyoid; male), 5473 (skin and skull; male), 5474 (skin and skull; male), 19088 (skull and hyoid; male); Igarapé Bravo, Rio Amazonas: 5094 (skin and skull; male), 5435 (skin; female), 5470 (skin and skull; male), 5471 (skin and skull; female), 5476 (skin and skull; female), 5478 (skin and skull; male), 5480 (skin and skull; female), 5481 (skin and skull; male), 7113 (skull; female), 10496 (skull; male), 19123 (skull; female); Faro: 9955 (skin, skull and hyoid; female), 9956 (skin, skull and hyoid; male); Jaguara: 19121 (skull and hyoid; male); Óbidos: 3637 (skin and skull; male), 3638–3639 (skin and skull; female), 3640 (skin and skull; male), 19086 (skull; male); Paissandu, Igarapé Bom Jardim: 9949 (skin; male), 9950 (skin; unknown sex), 9951–9952 (skin, skull and hyoid; male), 9953–9954 (skin and skull; male), 9957–9958 (skin, skull and hyoid; female), 19085 (skull and skeleton; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Alouatta nigerrima Lönnberg, 1941

Common names: *bugio-preto*, *guariba-preto* (Port.); Amazon black howler (Eng.).

Records (6 localities and 7 specimens): Itaituba: MZUSP 3646 (skin, skull and hyoid; male); Samaúma: MZUSP: 19003 (skin, skull and skeleton; male); Óbidos: 3643 (skull; male); Parque Nacional da Amazônia, Igarapé do Cotovelo: 24603 (skull; unknown sex); Parque Nacional da Amazônia, Uruá: 19119 (skull and skeleton; male); Urucurituba, Rio Tapajós: 19001 (skin; male), 19002 (skin, skull and hyoid; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Subfamily Atelinae Gray, 1825

Genus *Ateles* É. Geoffroy, 1806

Ateles chamek (Humboldt, 1812)

Common names: *macaco-aranha-de-cara-preta*, *coatá-de-cara-preta* (Port.); Peruvian spider monkey (Eng.).

Records (2 localities and 2 specimens): Barreira, Rio Tapajós: MZUSP 19326 (skin and skull; male); Urucurituba, Rio Tapajós: 19543 (skeleton; female).

Conservation status: ICMBio (2018): VU A4cd; IUCN (2019): EN A2cd.

Ateles marginatus É. Geoffroy, 1809

Common names: *macaco-aranha-de-cara-branca*, *coatá-de-cara-branca* (Port.); white-cheeked spider monkey (Eng.).

Records (9 localities and 47 specimens): Cachimbo: MZUSP 8064 (skull; male), 8070 (skull; unknown sex), 19331 (skin; female), 19332 (skin; unknown sex); Caxiricatuba, Rio Tapajós: 5281–5282 (skin and skull; female), 5284–5285 (skin and skull; female), 5287 (skin and skull; female), 5603 (skin; male), 5604 (skin; unknown sex), 5605 (skin and skull; female); Fordlândia: 10158 (skin and skull; female), 19313 (skin and skull; male), 19314–19316 (skin and skull; female), 19317–19322 (skin and skull; male), 19323 (skin and skull; female), 19324 (skin and skull; male), 19325 (skin and skull; female), 19327 (skin and skull; female), 19329 (skin and skull;

female), 19330 (skin and skull; male); Piquiatuba, Rio Tapajós: 5279 (skin and skull; female), 5286 (skin and skull; female), 5606 (skin and skull; female), 5607 (skin and skull; male), 7104–7105 (skull; female), 19188 (skin; female); Rio Curuá do Sul (mouth): 7101–7102 (skull; female), 19335 (skull; female); Rio Curuá-Una (mouth): 5288 (skin and skull; male), 5600 (skin and skull; female); Santarém: 19328 (skin and skull; female); Tapaiúna, Rio Tapajós: 10159 (skin and skull; female); Taperinha: 3565 (skin and skull; female).

Conservation status: ICMBio (2018): EN A4cd; IUCN (2019): EN A4cd.

Ateles paniscus (Linnaeus, 1758)

Common names: *macaco-aranha-de-cara-vermelha*, *coatá-de-cara-vermelha* (Port.); red-faced spider monkey, red-faced black spider monkey, Guiana spider monkey (Eng.).

Records (3 localities and 6 specimens): Igarapé Bravo, Rio Amazonas: MZUSP 5277 (skin and skull; male), 5278 (skull; female), 25777 (skin; female); Óbidos: 3641–3642 (skin and skull; female); Rio Cuminá-Miri (mouth): 19334 (skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): VU A4cd.

Order Lagomorpha Brandt, 1855

Family Leporidae Fischer, 1817

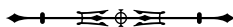
Genus *Sylvilagus* Gray, 1867

Sylvilagus minensis Thomas, 1901

Common names: *tapiti*, *coelho-do-mato* (Port.); tapeti, Brazilian cottontail, forest cottontail (Eng.).

Records (3 localities and 3 specimens): Barreirinha, Rio Tapajós: MZUSP 26750 (skin and skull; male); Cachoeira do Espelho, Rio Xingu: 21304 (skin and skull; female); Fordlândia: 26751 (skin and skull; male).

Conservation status: ICMBio (2018): LC (as *S. brasiliensis*); IUCN (2019): NA.



Comments: the taxonomy of *Sylvilagus brasiliensis* (Linnaeus, 1758) is undergoing profound changes, and some of the subspecies and synonyms are now treated as a full species (Ruedas, 2017; Ruedas *et al.*, 2017). Tapetis found in the state of Pará are now classified as *S. minensis* (see Ruedas, 2017; Ruedas *et al.*, 2017).

Order Rodentia Bowdich, 1821

Family Caviidae Fischer, 1817

Subfamily Hydrochoerinae gray, 1825

Genus *Hydrochoerus* Brisson, 1762

Hydrochoerus hydrochaeris (Linnaeus, 1766)

Common names: *capivara* (Port.); *capybara* (Eng.).

Records (1 locality and 1 specimen): Cachoeira do Espelho, Rio Xingu: MZUSP 20925 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Family Cuniculidae Miller & Gidley, 1918

Genus *Cuniculus* Brisson, 1762

Cuniculus paca (Linnaeus, 1766)

Common names: *paca* (Port.); lowland paca, spotted paca (Eng.).

Records (11 localities and 29 specimens): As Pedras, Rio Cuminá-Miri: MZUSP 25462 (skin and skull; male), 25463 (skin and skull; female), 25464 (skin and skull; male); Igarapé Bravo, Rio Amazonas: 5263 (skin and skull; female); Capim, BR-010, km 94: 9616 (skin and skull; male), 9617–9618 (skin and skull; female and fetus), 9619 (skull; female), 9620 (skull; male), 9621 (skull; unknown sex), 9622 (skull; female), 9623–9626 (skull; male); Cachoeira do Escalço, Rio Xingu: 25457 (skin and skull; male); Cachoeira do Espelho, Rio Xingu: 21331 (skin and skull; female and embryo), 21335 (skull; male); Ilha de Nova Olinda, Rio Tapajós: 25466 (skull; unknown sex); Lago Jacaré, Rio Trombetas: 10709 (skin and skull; female), 10710 (skin and skull; female), 10711 (skin and skull; pregnant

female), 10712 (skin and skull; male), 26840 (fetus of female 10709; in alcohol); Oriximiná, Açaizinho: 24919 (fetus in alcohol); Parque Nacional da Amazônia: 25465 (skull; unknown sex), 25467 (partial skeleton; unknown sex); Piquiatuba, Rio Tapajós: 5267 (skin and skull; female); Rio Curuá (mouth): 5265 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Family Dasyproctidae Bonaparte, 1838

Genus *Dasyprocta* Illiger, 1811

Dasyprocta croconota Wagler, 1831

Common names: *cutia* (Port.); orange agouti (Eng.).

Records (9 localities and 67 specimens): Bom Jardim, Rio Amazonas: MZUSP 5373 (skin and skull; female), 5377 (skin and skull; female), 5378–5379 (skin and skull; male), 5384 (skin and skull; female); Cametá, Rio Tocantins: 5363 (skin; unknown sex), 5478–5479 (skin; male), 5475–5477 (skull; male), 25558 (skull; male), 25564 (skull; unknown sex), 25568 (skull; male); Caxiricatuba, Rio Tapajós: 5356–5357 (skin and skull; male), 5359–5360 (skin; female), 5361 (skin and skull; female), 5365 (skin and skull; male), 5366 (skin and skull; female), 5368 (skin and skull; unknown sex), 5371–5372 (skin and skull; female), 5374 (skin and skull; male), 5376 (skin; female), 5383 (skin and skull; male); Fordlândia: 10146–10147 (skin and skull; male), 10148 (skin and skull; female), 10149 (skin and skull; male), 25477 (skin and skull; female), 25478–25480 (skin and skull; male), 25481 (skin and skull; unknown sex), 25482–25483 (skin and skull; female), 25484–25487 (skin and skull; male), 25488 (skin and skull; female), 25489–25490 (skin and skull; male), 25491–25492 (skin and skull; female), 25534 (skin and skull; female), 25535 (skull and skeleton; female); Piquiatuba, Rio Tapajós: 5355 (skin and skull; female), 5358 (skin and skull; female), 5364 (skin and skull; male), 5367 (skin and skull; female), 5369 (skin and skull; female), 5381 (skin and skull; male), 5382 (skin and skull; male), 5438 (skin and skull; male); Rio Curuá (mouth): 5353 (skin and

skull; female), 5354 (skin and skull; male), 5362 (skin and skull; female), 5380 (skin and skull; male), 25493 (skin and skull; male), 25559 (skin and skull; male), 25560 (skin and skull; male); Taperinha: 3789 (skin and skull; female); Urucurituba, Rio Tapajós: 25476 (skin and skull; female); Santarém: 3790 (skin; male); Santarém, Fazenda Marucu: 25530 (skin; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): DD.

Dasyprocta leporina (Linnaeus, 1758)

Common names: *cutia* (Port.); red-rumped agouti (Eng.).

Records (6 localities and 10 specimens): Igarapé Bravo, Rio Amazonas: MZUSP 5324–5325 (skin and skull; female), 5331 (skin and skull; female); Cachoeira do Espelho, Rio Xingu: 20930 (skin and skull; male), 21332 (skin and skull; male); Gorotire: 25515 (skin; unknown sex); Lago Jacaré, Rio Trombetas: 10714 (skin and skull; female), 26742 (fetus of 10714); Óbidos: 3788 (skin and skull; unknown sex); Parque Nacional da Amazônia, Rio Tapajós: 25514 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: Lack-Ximenes (1999) considered specimens south of the Rio Amazonas as *D. aguti* Linnaeus, 1766, while those in the north of this river and the Guianas were recognized as *D. leporina*.

Dasyprocta prymnolopha Wagler, 1831

Common names: *cutia* (Port.); black-rumped agouti (Eng.).

Records (3 localities and 10 specimens): Capim, BR-010, km 93: MZUSP 8943 (skull; unknown sex), 8944–8945 (skin and skull; male), 8946–8947 (skin and skull; female), 8948 (skin and skull; unknown sex), 8949 (skin and skull; male), 8952 (skin and skull; male); Belém: 8641 (skin; male); Paraná do Samaúma, Rio Tocantins: 25516 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Genus *Myoprocta* Thomas, 1903

Myoprocta acouchy (Erxleben, 1777)

Common names: *cutiara*, *cutia-de-rabo* (Port.); red acouchi (Eng.).

Records (4 localities and 9 specimens): Igarapé Bravo, Rio Amazonas: MZUSP 4709 (skin and skull; female), 4821 (skin; female); Boiuçu: 4710 (skin and skull; skin and skull; female); Curuá, Lago Cuiteuá, Rio Amazonas: 4635 (skin and skull; female), 4832 (skin and skull; female); Óbidos: 3688 (skin and skull; female), 3689 (skin and skull; unknown sex), 3690 (skin and skull; male), 4204 (skin and skull; male).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

Comments: two species of *Myoprocta* are recognized, the red acouchi *M. acouchy*, found in the Guianas and northern Brazil (north bank of the Rio Amazonas), and the green acouchi *M. pratti* Pocock, 1913, distributed in the western Amazon, from Venezuela and Colombia to northern Bolivia (Voss *et al.*, 2001; Patton & Emmons, 2015; Teta, 2019). Lack-Ximenes (1999) identified the specimens distributed in the Negro-Trombetas interfluvium as *M. exilis* (Wagler, 1831), while those found east of the Rio Trombetas as *M. demararae* (Tate, 1939), both considered junior synonyms of *M. acouchy* by other authors.

Family Erethizontidae Bonaparte, 1845

Genus *Coendou* Lacépède, 1799

Coendou nycthemera (Olfers, 1818)

Common names: *ouriço-cacheiro*, *porco-espinho* (Port.); Eastern Amazonian dwarf porcupine (Eng.).

Records (4 localities and 10 specimens): Belém: MZUSP 13519–13520 (skin and skull; male); BR-010, km 87-94: 25591 (skull; unknown sex); Cametá, Rio Tocantins:



5031–5034 (skin and skull; unknown sex), 5036–5037 (skin and skull; unknown sex), 5038 (skin; female), 5039 (skin and skull; unknown sex); Caxiricatuba, Rio Tapajós: 5035 (skin and skull; female).

Conservation status: ICMBio (2018): LC; IUCN (2019): DD.

Coendou prehensilis (Linnaeus, 1758)

Common names: *ouriço-cacheiro*, *porco-espinho* (Port.); Brazilian porcupine (Eng.).

Records (5 localities and 8 specimens): Barreira, Rio Tapajós: MZUSP 25232 (skin and skull; female); Cachoeira do Espelho, Rio Xingu: 20931 (skin, skull and skeleton; unknown sex), 21302 (skin, skull and skeleton; male), 21303 (skin, skull and skeleton; female); Cametá, Rio Xingu: 5042 (skin and skull; male); Parque Nacional da Amazônia, Uruá, km 65: 25230 (partial skeleton; unknown sex), 25231 (skull; unknown sex); Santo Antônio, Rio Tocantins: 13486 (skin and skull; unknown sex).

Conservation status: ICMBio (2018): LC; IUCN (2019): LC.

SPECIES RECORDED FOR THE STATE OF PARÁ WITHOUT VOUCHER SPECIMENS IN THE MZUSP

Table 1 contains the species of medium and large-sized mammals that have records in the literature for the state of Pará, but do not have voucher specimens deposited in the MZUSP.

SAMPLING RICHNESS

The MZUSP houses 1,910 specimens representing 79 species of mammals from Pará state. These species correspond to nine of the 10 orders recognized for the state (Percequillo & Gregorin, 2019), emphasizing the importance of the MZUSP collection. However, this representativeness is not equal in terms of the number of specimens for each genus (Figure 1).

Table 1. List of medium and large-sized mammal species (scientific and popular names in Portuguese and English) recorded for the state of Pará, Brazil, but without voucher specimens deposited in the MZUSP. In the right column are the bibliographic sources of the species records. References: 1 = Andrade *et al.* (2018); 2 = Boubli *et al.* (2008); 3 = Brandão *et al.* (2015); 4 = Duarte *et al.* (2012); 5 = Emin-Lima *et al.* (2010); 6 = Faria & Melo (2017); 7 = Goeldi & Hagmann (1904); 8 = González *et al.* (2010); 9 = Hrbek *et al.* (2014); 10 = Mendes-Oliveira *et al.* (2011); 11 = Oliveira, L. *et al.* (2009); 12 = Pimenta & Silva Jr. (2005); 13 = Rossi *et al.* (2017); 14 = Siciliano *et al.* (2016); 15 = Silva Jr. *et al.* (2010); 16 = de Vivo (1991); 17 = Voss *et al.* (2001); 18 = Voss *et al.* (2018); 19 = Wetzel *et al.* (2008).

(Continue)

Taxa	Common name		References
	Portuguese	English	
Didelphimorphia Gill, 1872			
Didelphidae Gray, 1821			
<i>Didelphis</i> Linnaeus, 1758			
<i>D. imperfecta</i> Mondolfi & Pérez-Hernández, 1984	<i>Gambá, mucura, saruê, sarigueia</i>	Guianan white-eared opossum	3, 6, 13
<i>Philander</i> Brisson 1762			
<i>P. canus</i> (Osgood, 1913)	<i>Cuíca-de-quatro-olhos</i>	Gray four-eyed opossum	17
Cingulata Illiger, 1811			
Chlamyphoridae Bonaparte, 1850			
<i>Cabassous</i> McMurtrie, 1831			
<i>C. unicinctus</i> (Linnaeus, 1758)	<i>Tatu-de-rabo-mole-pequeno</i>	Southern naked-tailed armadillo	19

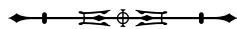


Table 1. (Conclusion)

Taxa	Common name		References
	Portuguese	English	
Sirenia Illiger, 1811			
Trichechidae Gill, 1872			
<i>Trichechus</i> Linnaeus, 1758			
<i>T. manatus</i> (Linnaeus, 1758)	<i>Peixe-boi-marinho</i>	West Indian manatee	5
Carnivora Bowdich (1821)			
Mustelidae Fischer, 1817			
<i>Lontra</i> Gray, 1843			
<i>L. longicaudis</i> (Olfers, 1818)	<i>Lontra</i>	Neotropical otter	5, 15
Artiodactyla Owen, 1848			
Cervidae Goldfuss, 1820			
<i>Blastocerus</i> Wagner, 1844			
<i>B. dichotomus</i> (Illiger, 1815)	<i>Cervo-do-pantanal, suaquetê</i>	Marsh deer	4
<i>Odocoileus</i> Rafinesque, 1832			
<i>O. virginianus</i> (Zimmermann, 1780)	<i>Veado-galheiro, cariacu</i>	White-tailed deer	10
<i>Ozotoceros</i> Ameghino, 1891			
<i>O. bezoarticus</i> (Linnaeus, 1758)	<i>Veado-campeiro, veado-branco</i>	Pampas deer	7, 8, 15
Iniidae Gray, 1846			
<i>Inia</i> d'Orbigny, 1834			
<i>I. araguaiaensis</i> Hrbek et al., 2014	<i>Boto-do-araguaia</i>	Araguaian river dolphin	9, 14
Primates Linnaeus, 1758			
Callitrichidae Thomas, 1903			
<i>Mico</i> Lesson, 1840			
<i>M. emiliae</i> (Thomas, 1920)	<i>Sagui-de-snehlage, mico-de-snehlage</i>	Emilia's marmoset, Snehlage's marmoset	1, 12, 16
<i>Saguinus</i> Hoffmannsegg, 1807			
<i>S. (S.) martinsi</i> (Thomas, 1912)	<i>Sauim</i>	Martins's tamarin	11
Cebidae Bonaparte, 1831			
<i>Cebus</i> Erxleben, 1777			
<i>C. (C.) olivaceus</i> (Schomburgk, 1848)	<i>Caiarara, caiara</i>	Wedge-capped capuchin	15
Atelidae Gray, 1825			
<i>Lagothrix</i> É. Geoffroy, 1812			
<i>Lagothrix cana</i> (É. Geoffroy, 1812)	<i>Macaco-barrigudo</i>	Peruvian woolly monkey	2
Rodentia Bowdich, 1821			
Erethizontidae Bonaparte, 1845			
<i>Coendou</i> Lacépède, 1799			
<i>C. melanurus</i> (Wagner, 1842)	<i>Ouriço-cacheiro</i>	Black-tailed hairy dwarf porcupine	17

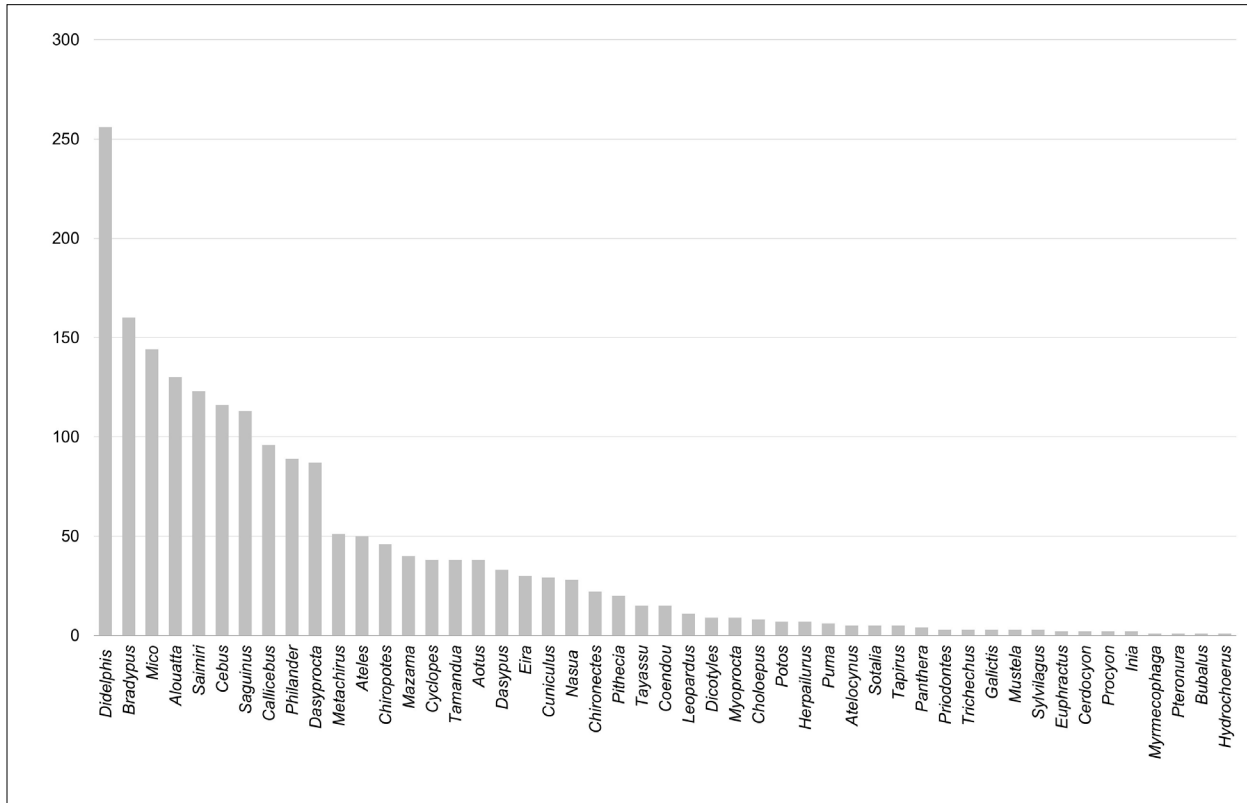


Figure 1. Number of specimens per genus collected in the state of Pará, Brazil, and housed in the Mammal Collection of the *Museu de Zoologia da Universidade de São Paulo*, SP, Brazil.

The most represented genus in the collection is *Didelphis*, with 216 specimens, corresponding to 13% of all specimens from Pará state. *Bradypus* and some primate genera (*Mico*, *Alouatta*, *Saimiri*, *Cebus*, and *Saguinus*), also have large number of specimens (> 100). On the other hand, 46% of the genera found in MZUSP are represented by less than 10 specimens, demonstrating a possible collection bias in favor of the first-mentioned taxa.

Regarding the geographical distribution of the samples (Figure 2), there are four areas of denser collection: (1) a large concentration in the west of the state, which encompasses the Lower Rio Tapajós, Lower Rio Trombetas, and the Rio Amazonas between the mouth of Rio Nhamundá and mouth of Rio Curuá-Una; (2) Lower Rio Xingu, between the mouth of Rio Iriri and the mouth of Rio Bacajá; (3) Rio Tocantins in the Tucuú region; and

(4) the northeastern portion of Pará, which encompasses the mouth of the Rio Tocantins, Ilha de Marajó, and Belém municipality area. On the Tucuú region, it is worth mentioning that many collection localities are currently submerged by a giant reservoir (> 2,400 km²) caused by the Tucuú Dam, which was completed in the mid-1980s (Goulding *et al.*, 2003; Pinto, L., 2012).

On the other hand, there is a lack of specimen representation mainly in the central and southern regions of the state, as well as the region on the left bank of the Rio Amazonas. Most of the specimens were collected in forested areas of the Amazon biome, and only a few in Cerrado patches or Amazon-Cerrado transition areas, such as Serra do Cachimbo, Formiga, Canaã dos Carajás, Gorotire, and Santana do Araguaia. These large concentrations of collection points in certain areas of the

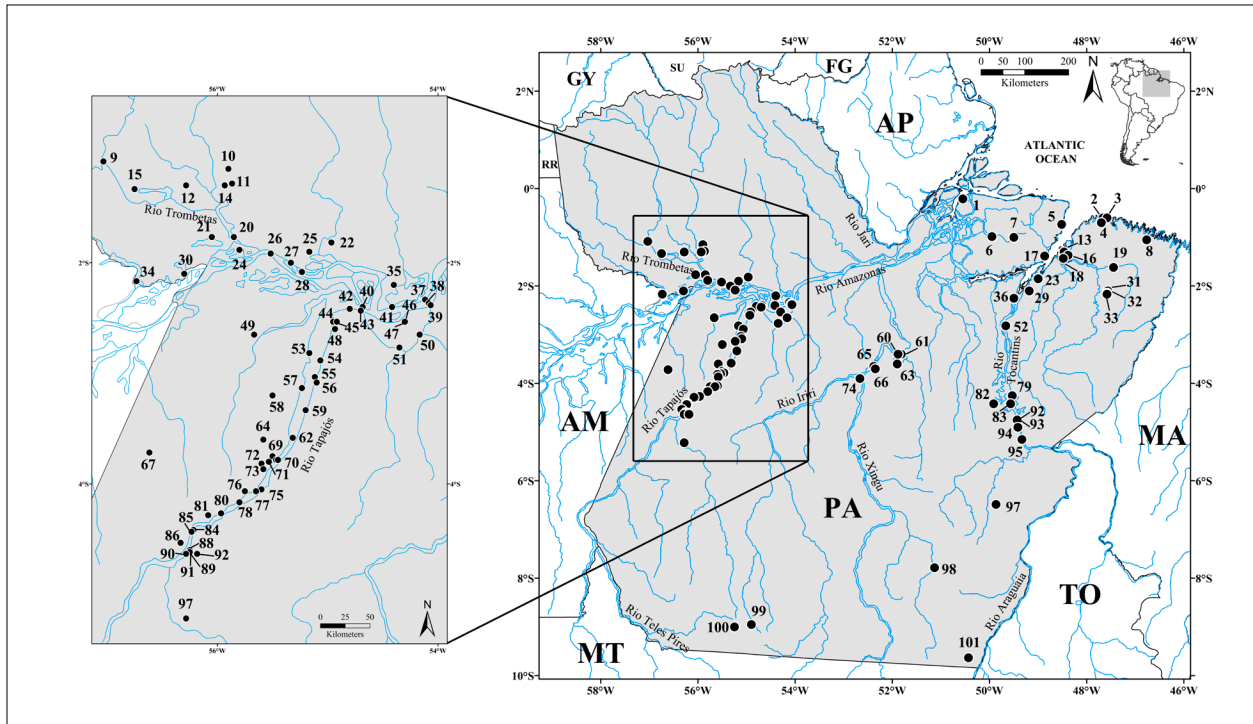


Figure 2. Collection localities (black dots) of the specimens of medium and large-sized mammals from Pará state (in gray) housed in the Mammal Collection of the *Museu de Zoologia da Universidade de São Paulo*, SP, Brazil. Numbers correspond to collection localities listed in the gazetteer (see Appendix 1). Legend: AM = state of Amazonas, Brazil; AP = state of Amapá, Brazil; FG = French Guiana; GY = Guyana; MA = state of Maranhão, Brazil; MT = state of Mato Grosso, Brazil; PA = state of Pará, Brazil; RR = state of Roraima, Brazil; SU = Suriname; TO = state of Tocantins, Brazil.

state reflect the history of collection expeditions, which were conducted along major rivers and near municipalities or localities with a higher concentration of human population at the time [for example, see Pinto, O. (1945) who reported in detail the routes and collection localities of the MZUSP expeditions in the Amazon in the first half of the last century].

As pointed out by de Vivo *et al.* (2014), even the best museums in terms of geographical representation cannot provide, alone, sufficient data about the distribution of a single taxon. Therefore, for more comprehensive studies about mammals of Pará state, it is crucial to consult additional Mammalogy collections, such as *Museu Paraense Emílio Goeldi*, Belém, Pará state, and the *Museu Nacional/Universidade Federal do Rio de Janeiro*, Rio de Janeiro state. In this context, museum catalogs, such as Vieira (1944, 1945,

1946, 1949, 1951, 1953a, 1953b, 1957), Ávila-Pires (1968), Napier (1976), Lawrence (1993), Fisher & Ludwig (2014), Bezerra & Bordallo (2018), and the present contribution, are important references for the mammal richness represented in scientific collections. For medium and large-sized mammals, especially, these catalogs should be considered as primary sources to found specimens, since they cannot be collected as it was in the first half of the 20th century (Pinto, O., 1945; Nascimento, 2014), and the number of samples housed in scientific collections are usually small (Rossi, 2000).

Among the species listed here, 24 are currently threatened (VU: 18; EN: 4; CR: 2, following the classification of ICMBio, 2018) according to the definitions proposed by Portaria MMA (Brasil, 2014, Art. 6° § 2°). One of the greatest threats for mammals in Brazil is habitat loss and fragmentation (Costa *et al.*, 2005). The eastern,

southern and southeastern state of Pará, for being insert in the arc of deforestation, suffers of a heavy human pressure, resulting in a few and sparsely forested areas surrounded by agricultural farms (Negrões *et al.*, 2011; Aldrich *et al.*, 2012). Additionally, medium and large-sized mammals are heavily affected by the hunting pressure in the remaining forests, even in the protected ones, resulting in population decline or local extinction (Costa *et al.*, 2005; Peres *et al.*, 2016). Two critically endangered species present in the MZUSP, *Cebus (Cebus) kaapori* and *Chiropotes satanas*, are examples of population reduction due to these threats. These primate species were originally distributed through the Belém area of endemism (ICMBio, 2018). In this area, deforestation has reached 76%, remaining only few fragments of primary and secondary forest (Almeida & Vieira, 2010), leading to the population decline of these two species to an estimated 80% during the last 30-40 years (ICMBio, 2018).

In this scenario, the MZUSP, as well as other scientific collections, are of great importance to preserve samples of the biodiversity, especially of the threatened and extinct species. The relevance of scientific collections transcends time and space. Thus, MZUSP holds an important and priceless part of the Brazilian mammalogy that will be the legacy to be used by the next generations of scientists worldwide.

CONCLUSIONS

The present catalog demonstrates that most of the medium and large-sized mammal richness of Pará state is represented in the MZUSP. The majority of the preserved material was collected in a few areas of the state, leaving many areas unsampled. These results reflect the history of the collection over the years and allow the researcher to make projections of the main areas of study and possible important regions for sample collection. In this context, this catalog plays an important role in presenting the currently known biodiversity of medium and large-sized mammals of Pará, also acting as a primary source for systematics, ecological, conservation and biogeographic studies.

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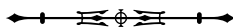
Appendix 1. Geographic coordinates of the collections localities.

(Continue)

BRAZIL

Pará state

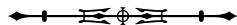
1. Igarapé Taperebá, Ilha de Marajó. 00° 13' S, 50° 33' W
2. Alegre, 15 km NE Marapanim. 00° 36' S, 47° 40' W
3. Maracanã, Ilha de Maiandeuá, Algodão. 00° 36' S, 47° 35' W
4. Marapanim, Marudá. 00° 42' S, 47° 42' W
5. Soure, Fazenda Teso, Ilha de Marajó. 00° 44' S, 48° 31' W
6. Anajás. 00° 59' S, 49° 57' W
7. Ilha de Marajó. 01° 00' S, 49° 30' W
8. Bragança. 01° 03' S, 46° 46' W
9. Cachoeira da Porteira, Rio Nhamundá. 01° 05' S, 57° 02' W
10. Igarapé Jaramacaru. 01° 09' S, 55° 54' W
11. As Pedras, Rio Cuminá-Miri. 01° 17' S, 55° 52' W
12. Lago Jacaré, Rio Trombetas. 01° 18' S, 56° 17' W
13. Icoaraci. 01° 18' S, 48° 28' W
14. Rio Cuminá-Miri (mouth). 01° 18' S, 55° 56' W
15. Reserva Biológica do Rio Trombetas. 01° 20' S, 56° 45' W
16. Ananindeua. 01° 22' S, 48° 23' W
17. Ponta de Pedras, Ilha de Marajó. 01° 23' S, 48° 52' W
18. Belém. 01° 26' S, 48° 29' W
19. São Miguel do Guamá. 01° 37' S, 47° 27' W
20. Oriximiná. 01° 46' S, 55° 51' W
21. Lago Sapucaá, Rio Trombetas. 01° 46' S, 56° 03' W
22. Curuá, Lago Cuíteuá, Rio Amazonas. 01° 49' S, 54° 58' W
23. Paran do Samama, Rio Tocantins. 01° 51' S, 49° 00' W
24. Lago Paru, Rio Trombetas. 01° 53' S, 55° 48' W
25. Igarap Bravo, Rio Amazonas. 01° 54' S, 55° 10' W
26. bidos. 01° 55' S, 55° 31' W
27. Igarap Piaba. 02° 00' S, 55° 20' W
28. Boiuu. 02° 05' S, 55° 14' W
29. Arimateua, Rio Tocantins. 02° 06' S, 49° 11' W
30. Paissandu, Igarap Bom Jardim. 02° 06' S, 56° 18' W
31. BR-010, km 87-94. 02° 06' S, 47° 34' W
32. BR-010, km 92 / So Domingos do Capim, BR-10, km 92. 02° 09' S, 47° 35' W
33. Capim, Rodovia BR-14, km 93 / Capim, BR-010, km 93 / Capim, BR-010, km 94 / Capim. 02° 10' S, 47° 35' W
34. Faro. 02° 10' S, 56° 44' W
35. Jaguar. 02° 12' S, 54° 24' W



Appendix 1.

(Continue)

36. Cameté, Rio Tocantins. 02° 15' S, 49° 30' W
37. Curral Grande. 02° 20' S, 54° 07' W
38. Rio Curuá (mouth). 02° 22' S, 54° 05' W
39. Rio Curuá-Una (mouth). 02° 23' S, 54° 04' W
40. Rio Tapajós. 02° 24' S, 54° 41' W
41. Cacaoal Grande. 02° 24' S, 54° 25' W
42. Santarém. 02° 25' S, 54° 48' W
43. Santarém, Fazenda Mararu, Rio Tapajós. 02° 26' S, 54° 42' W
44. Santarém, Alter do Chão. 02° 32' S, 54° 57' W
45. Santarém, Fazenda Marucu. 02° 32' S, 54° 55' W
46. Taperinha. 02° 32' S, 54° 18' W
47. Os Patos. 02° 32' S, 54° 18' W
48. Caxiricatuba, Rio Tapajós. 02° 36' S, 54° 56' W
49. Aruã, Rio Arapiuns. 02° 39' S, 55° 40' W
50. Rio Curuá do Sul (mouth). 02° 39' S, 54° 10' W
51. Bom Jardim, Rio Amazonas. 02° 46' S, 54° 21' W
52. Santo Antônio, Rio Tocantins. 02° 49' S, 49° 40' W
53. Boim. 02° 49' S, 55° 10' W
54. Tapaiúna, Rio Tapajós. 02° 53' S, 55° 04' W
55. Piquiatuba, Rio Tapajós. 03° 02' S, 55° 07' W
56. Tauari, Rio Tapajós. 03° 05' S, 55° 06' W
57. Pau de Letra, Rio Tapajós. 03° 08' S, 55° 14' W
58. Urucurituba, Rio Tapajós. 03° 12' S, 55° 30' W
59. Itapoama, Rio Tapajós. 03° 20' S, 55° 12' W
60. Ilha do Limão, Rio Xingu. 03° 24' S, 51° 49' W
61. Juruá, Rio Xingu. 03° 24' S, 51° 53' W
62. Aveiro. 03° 35' S, 55° 19' W
63. Rio Bacajá (mouth). 03° 36' S, 51° 54' W
64. Samaúma. 03° 36' S, 55° 35' W
65. Cachoeira do Espelho, Rio Xingu. 03° 39' S, 52° 23' W
66. Cachoeira do Escalço, Rio Xingu. 03° 42' S, 52° 21' W
67. Terra Santa, Rio Jamari. 03° 43' S, 56° 37' W
68. Santa Rosa, Ilha de Urucurituba. 03° 45' S, 55° 30' W
69. Tavio, Rio Tapajós. 03° 47' S, 55° 27' W
70. Fordlândia / Fordlândia, Fazenda Nova. 03° 47' S, 55° 28' W
71. Sumaúma, Rio Tapajós. 03° 48' S, 55° 32' W
72. Brasília Legal, Rio Tapajós. 03° 49' S, 55° 36' W
73. Arara, Rio Tapajós. 03° 52' S, 55° 35' W



Appendix 1.

(Conclusion)

74. Largo do Souza, Rio Iriri. 03° 54' S, 52° 40' W
75. Pedreira, Rio Tapajós. 04° 03' S, 55° 36' W
76. Barreira, Rio Tapajós. 04° 04' S, 55° 45' W
77. Monte Cristo, Rio Tapajós. 04° 04' S, 55° 39' W
78. Lago Araipá, Rio Tapajós. 04° 10' S, 55° 48' W
79. Vila Bravo, Rio Tocantins. 04° 15' S, 49° 32' W
80. Transamazônica km 46 / Transamazônica km 50, near Itaituba / Transamazônica km 75, near Itaituba / Transamazônica km 62, near Itaituba / Transamazônica km 58, near Itaituba / Transamazônica km 80, near Itaituba / Transamazônica km 100 / Itaituba / Itaituba, Parque Nacional da Amazônia / Parque Nacional da Amazônia / Parque Nacional da Amazônia, Rio Tapajós / Transamazônica km 66, Parque Nacional da Amazônia / Parque Nacional da Amazônia, Igarapé do Cotovelo. 04° 16' S, 55° 58' W
81. Transamazônica km 15, near Itaituba. 04° 17' S, 56° 05' W
82. Rio Pucuruí, tributary of Rio Tocantins. 04° 25' S, 49° 55' W
83. Remansinho, Rio Tocantins. 04° 25' S, 49° 34' W
84. Barreirinha, Rio Tapajós. 04° 25' S, 56° 13' W
85. São Luís, Rio Tapajós. 04° 26' S, 56° 14' W
86. Morro da Terra Preta, Transamazônica km 60, near Itaituba. 04° 32' S, 56° 20' W
87. Pimental. 04° 36' S, 56° 15' W
88. Uruá, Rio Tapajós / Parque Nacional da Amazônia, Uruá / Parque Nacional da Amazônia, Uruá, km 65. 04° 37' S, 56° 15' W
89. Igarapé São José, near Itaituba. 04° 38' S, 56° 11' W
90. Ilha de Nova Olinda, Rio Tapajós. 04° 38' S, 56° 17' W
91. Boa Fé, Parque Nacional do Tapajós. 04° 38' S, 56° 11' W
92. Bagagem, Rio Tocantins. 04° 45' S, 49° 26' W
93. Igarapé Águas da Saúde, Rio Tocantins. 04° 45' S, 49° 26' W
94. Puraquecua, Rio Tocantins. 04° 54' S, 49° 25' W
95. Itupiranga, Rio Tocantins. 05° 09' S, 49° 20' W
96. Ilha de Santa Helena, Rio Pará. 05° 13' S, 56° 17' W
97. Canaã dos Carajás. 06° 29' S, 49° 52' W
98. Gorotire. 07° 47' S, 51° 08' W
99. Cachimbo / Cachimbo, Formiga. 08° 57' S, 54° 54' W
100. Serra do Cachimbo. 09° 00' S, 55° 15' W
101. Santana do Araguaia, Fazenda Fatura. 09° 38' S, 50° 26' W



