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The 2010 Anteater Red List Assessment

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The 2010 Anteater Red List Assessment

Mariella Superina
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Abstract

The IUCN/SSC Anteater, Sloth and Armadillo Specialist Group re-assessed the conservation status of the four extant anteater species in May 2010. Three species maintained their Least Concern status. *Myrmecophaga tridactyla* was listed as Vulnerable due to an estimated reduction in population size of at least 30%. The isolated population of *Cyclopes didactylus* that inhabits the Atlantic forest of coastal northeastern Brazil was assessed separately for the first time due to its separation from the main population by over 1000 km. Although its habitat has been severely reduced, it was classified as Data Deficient due to the lack of scientific data. The main threats to the long-term survival of anteaters is habitat degradation and fragmentation, wildfires, traffic accidents, hunting, and their capture for illegal trade and maintenance as pets. Education programs are in place for three species. Basic questions on the taxonomy, population dynamics, life history, and how hunting and extraction of wild individuals affects anteater populations still remain unresolved.

Keywords: Conservation status, threats, *Myrmecophaga*, *Tamandua*, *Cyclopes*, Pilosa, Xenarthra

The IUCN/SSC Anteater, Sloth and Armadillo Specialist Group re-assessed the conservation status of the four extant anteater species in May 2010. Version 3.1 of the IUCN Red List Categories and Criteria (IUCN, 2001) was used in all cases. A total of 13 researchers provided data on the geographic range, population size and status, habitat and ecology, threats, and existing conservation measures of anteaters. All evaluations were checked for consistency by at least two specialists.

The major change from the 2004 assessment (Fonseca and Aguiar, 2004) to the one presented here consists in the separate evaluation of the coastal northeastern Brazil population of *Cyclopes didactylus*. The latter is separated from the main population by over 1000 km, and may be sufficiently differentiated at the genetic level to represent a separate Evolutionary Significant Unit. Due to rapid deforestation in the area, we considered it appropriate to evaluate it apart from the main population. However, knowledge on the ecology and conservation status of the coastal Brazil population is virtually non-existent, and field research is urgently needed to correctly assess the long-term chances of survival of this smallest of all anteaters.

Three species maintained their Least Concern status (Table 1). The coastal northeastern Brazil subpopulation of *C. didactylus* was assessed for the first time and classified as Data Deficient due to the lack of data. Based on the observed habitat loss, it is inferred that its populations are declining (Table 1). *Myrmecophaga tridactyla* returned to its 1996 category (Vulnerable) due to an estimated reduction in population size of at least 30% and the fact that it is listed in a threat category in almost all regional and national Red Lists within its range. Sixty percent of the assessed anteater species and populations are now classified as Least Concern. However, it should be noted that their population trend is unknown (Table 1).

Giant anteaters, tamanduas, and silky anteaters are subjected to similar threats. Habitat degradation and fragmentation are affecting all assessed anteaters (Fig. 1). Similarly, all anteaters are hunted for food, persecuted as pest species, or captured for illegal trade or to maintain them as pets. Three out of five assessed anteaters are affected by wildfires and killed on roads (Fig. 1).

Basic questions on the taxonomy, population dynamics, life history, and how hunting and extraction of wild individuals affects anteater populations still remain unresolved (Fig. 2). It is interesting to note that education programs are in place for three out of five anteaters (Fig. 3) but only one out of 21 armadillo species (Abba and Superina, 2010). Similarly, *ex situ* conservation programs are proportionally more frequent for anteaters than for armadillos. Two species are included in the CITES Appendices: *Myrmecophaga tridactyla* is listed in Appendix II, and the Guatemalan populations of *Tamandua mexicana* are listed in Appendix III (CITES, 2009). No action recovery, harvest management or area-based management plans exist for any assessed anteater.

We thank all researchers, graduate students, rangers, and enthusiasts who participated in the 2010 Anteater Red List Assessment. Detailed species descriptions and updated range maps can be found on the following pages.

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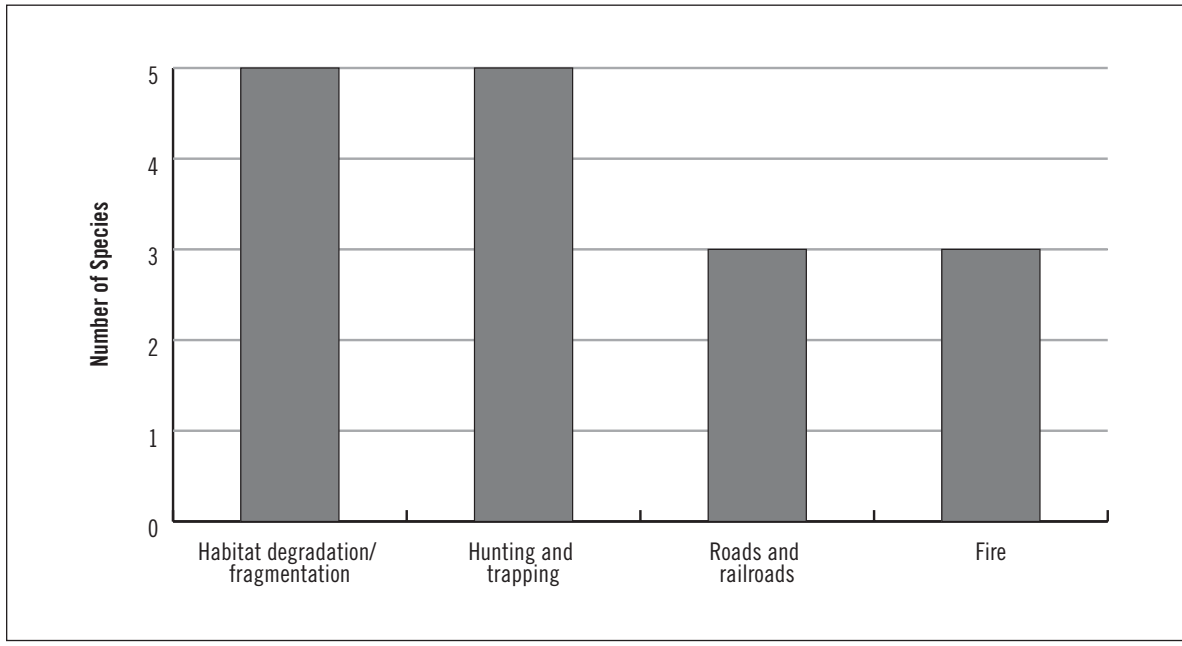


Figure 1. Main threats affecting wild anteaters. Note that the northeastern Brazil population of *C.didactylus* is counted as a species.

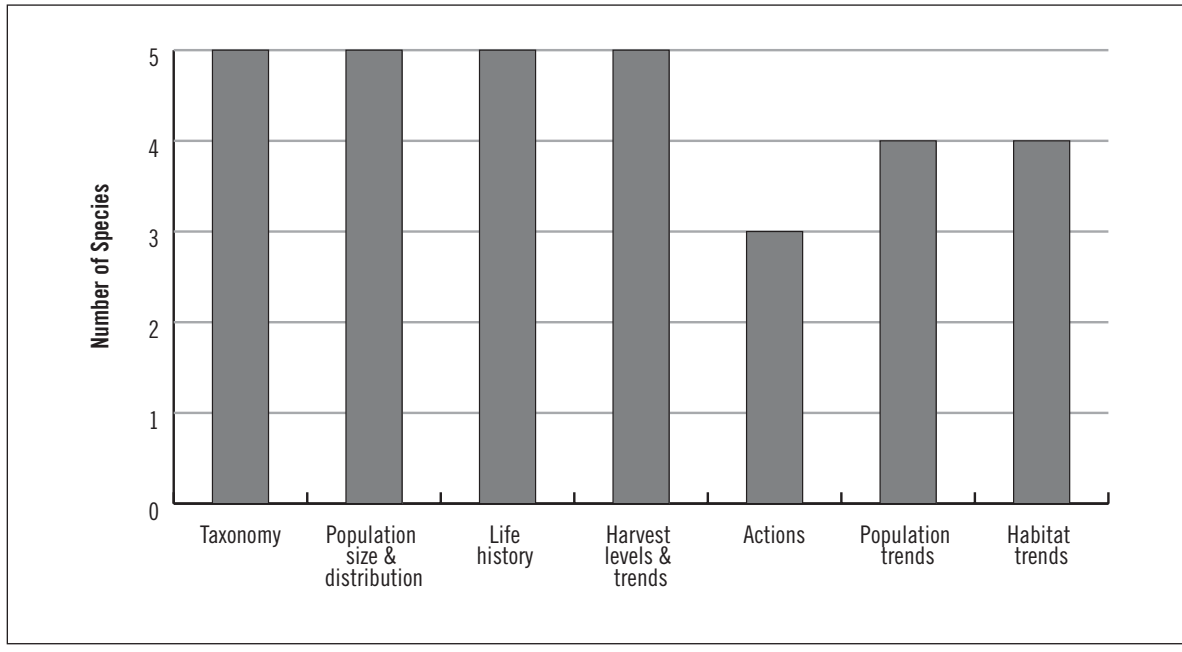


Figure 2. Research priorities for anteaters. Note that the northeastern Brazil population of *C.didactylus* is counted as a species.

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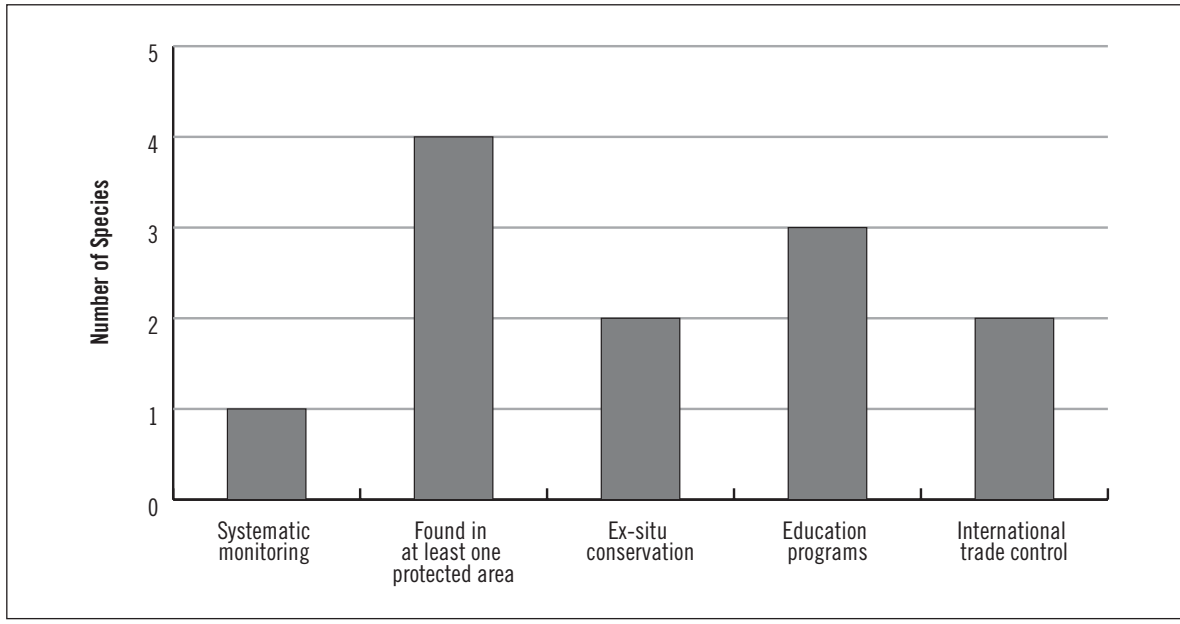


Figure 3. Existing conservation actions for anteaters. Note that the northeastern Brazil population of *C.didactylus* is counted as a species.

Table 1. Historical overview of the Red List categories and current population trends of the four anteater species. See glossary for definitions of the categories.

Species	1996	2004	2010	Population trend
Cyclopes didactylus	LR/lc	LC	LC	?
Cyclopes didactylus – northeastern Brazil subpopulation	--	--	DD	↓
Myrmecophaga tridactyla	VU	NT	VU A2c	↓
Tamandua mexicana	LR/lc	LC	LC	?
Tamandua tetradactyla	LR/lc	LC	LC	?

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Cyclopes didactylus, main population

Least Concern (LC)



Photograph: Flávia Miranda

Common Names: Silky anteater (English), pygmy anteater (English), serafín (Spanish), serafín del platanar (Spanish), inti pelejo (Spanish), tamanduaí (Portuguese), tamandua-cigarra (Portuguese).

Assessment Rationale: *C. didactylus* is listed as Least Concern in view of its wide distribution, presumed large population, its occurrence in a number of protected areas, its tolerance of a degree of habitat modification, and because it is unlikely to be declining fast enough to qualify for listing in a threatened category.

Taxonomic Note: There are seven subspecies of *C. didactylus* (Gardner, 2007).

Geographic Range: *C. didactylus* occurs from Mexico (Veracruz and Oaxaca) throughout Central America. West of the Andes, it occurs from Colombia to southern Ecuador. East of the Andes, it can be found in Venezuela, Trinidad Island, Guyana, Suriname, French Guiana, Brazil (Acre to western Maranhão), and as far south as Bolivia (La Paz and Santa Cruz; Fig. 4). The species has not been recorded from El Salvador and it is unclear if the species was ever present there. It has been recorded from sea level up to 1,500 m asl. There is a population of *C. didactylus* on the northeastern coast of Brazil; it is evaluated separately due to its isolation from the main population (see below). The extent of occurrence of the main population is approximately 7,600,000 km^2.

Population: Not much is known about the wild populations of *C. didactylus*.

Habitats and Ecology: This nocturnal and arboreal species occurs in semi-deciduous and evergreen tropical moist lowland forest, gallery forest, and mangrove forest. It can be found in secondary forest habitat. Adults are solitary; the home range of a male overlaps the home range of three females (Montgomery, 1983, 1985a). The females give birth to a single young once per year.

Threats: Although general deforestation is taking place over many parts of its range, *C. didactylus* remains widespread in the Amazon Basin and there are currently no major threats to the survival of this small anteater. In some areas it is captured and kept as a pet species, although it usually does not survive long in captivity.

Conservation: *C. didactylus* is present in a number of protected areas.

Assessors: Miranda, F. and Meritt Jr., D.A.

Evaluators: Superina, M. and Bermúdez Larrazabal, L.

Contributors: Tirira, D. and Arteaga, M.C.

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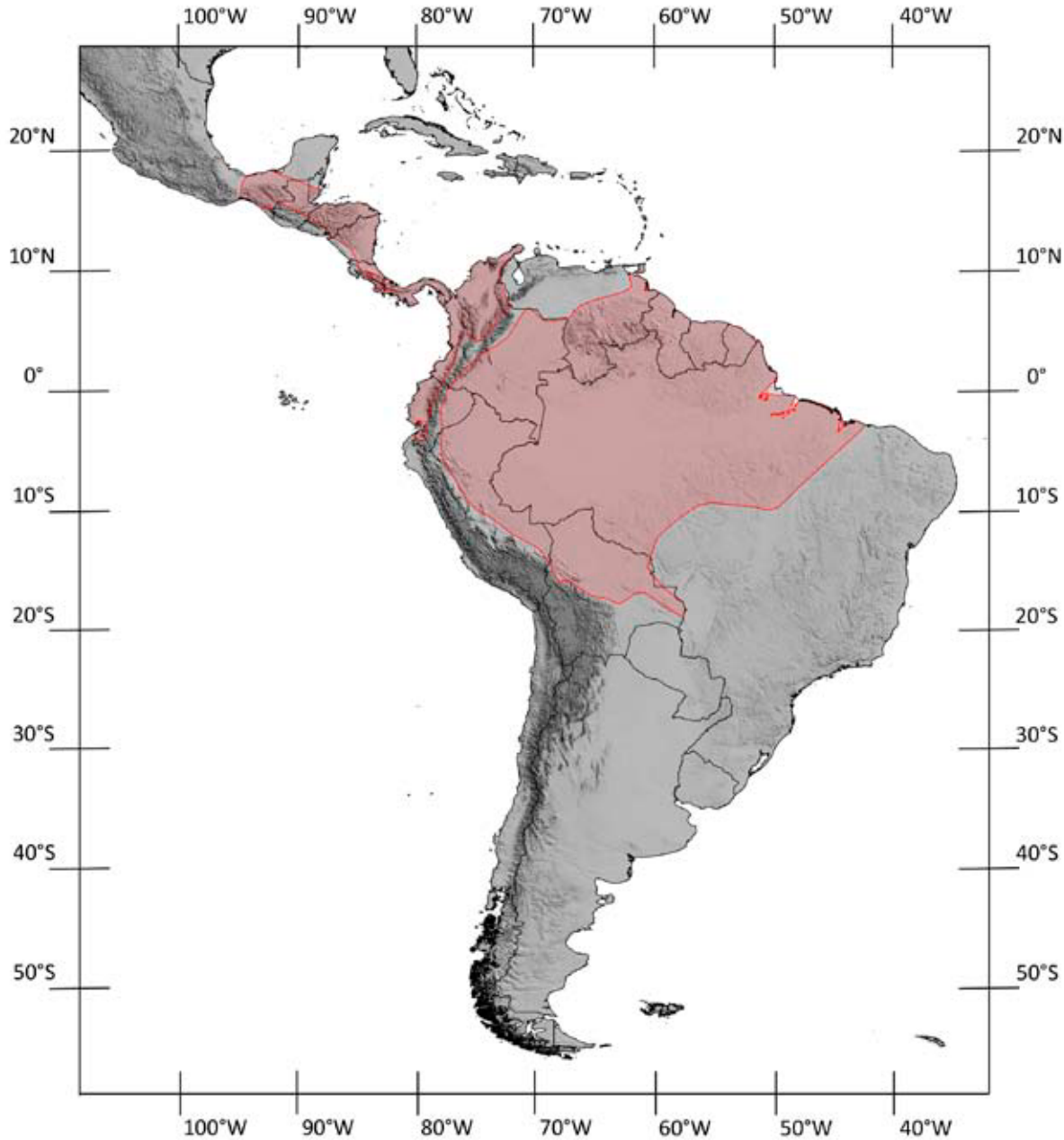


Figure 4. *Cyclopes didactylus*, main population. Based on Cabrera (1957); Hall (1981); Wetzel (1982); Eisenberg (1989); Nowak (1991); Pacheco *et al.* (1995); Anderson (1997); Emmons and Feer (1997); Reid (1997); Eisenberg and Redford (1999); Engstrom and Lim (2000); Lord (2000); Ceballos and Oliva (2005); Gardner (2007); Tirira (2007); Aguiar and Fonseca (2008); Reid (2009).

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Cyclopes didactylus, Northeastern Brazil subpopulation

Data Deficient (DD)



Photograph: Flávia Miranda

Common Names: Silky anteater (English), pygmy anteater (English), tamanduaí (Portuguese), tamanduacigarra (Portuguese).

Assessment Rationale: There is no doubt that rapid and ongoing deforestation of the Atlantic forest is negatively affecting the northeastern population of *C. didactylus*, as the species cannot survive in the sugar cane plantations that are replacing the native vegetation in this area and the remaining patches of suitable habitat are increasingly fragmented. It is therefore highly probable that this population requires listing in a threatened category. The lack of basic data on its ecology, population size and density, however, currently do not allow a realistic assessment of its conservation status. The northeastern population of *C. didactylus* is therefore classified as Data Deficient. Field studies are urgently needed to confirm the taxonomic status of this population and to obtain sufficient information for an appropriate assessment of its conservation status.

Taxonomic Note: The taxonomic status of this isolated population of *C. didactylus* needs to be confirmed.

Geographic Range: This subpopulation of the silky anteater occurs in coastal northeastern Brazil, in the states of Paraíba, Pernambuco, Alagoas and Rio Grande do Norte (Miranda and Superina, 2010; Fig. 5). It is isolated from the main silky anteater population by approximately 1,000 km. The extent of occurrence of this subpopulation is approximately 25,000 km^2.

Population: No data are available on the population size or density of this isolated population of *C. didactylus.* Ongoing deforestation is likely to further fragment the habitat and decimate the wild population of this smallest of all anteaters.

Habitats and Ecology: The northeastern subpopulation of *C. didactylus* is restricted to tropical moist lowland forests. Nothing is known about its biology or ecology.

Threats: This population of silky anteaters is threatened by rapid deforestation of its suitable habitat (Atlantic forest) due to the increase in sugar cane plantations, which, in addition to direct habitat loss, also leads to habitat fragmentation and degradation. Only five percent of the original extent of suitable habitat remain intact (Galindo-Leal and De Gusmão Câmara, 2003). The current area of Atlantic forest in the range states amounts to approximately 3,000 km^2 (Campanili and Prochnow, 2006). Furthermore, silky anteaters are captured for illegal trade (Miranda, pers. comm., 2010).

Conservation: There are no State or National parks within the range of the northeastern Brazil subpopulation of *C. didactylus.* Projeto Tamanduá (Brazil) is performing awareness programs in the area.

Assessors: Miranda, F. and Superina, M.

Evaluators: Bermúdez Larrazabal, L. and Meritt Jr., D.A.

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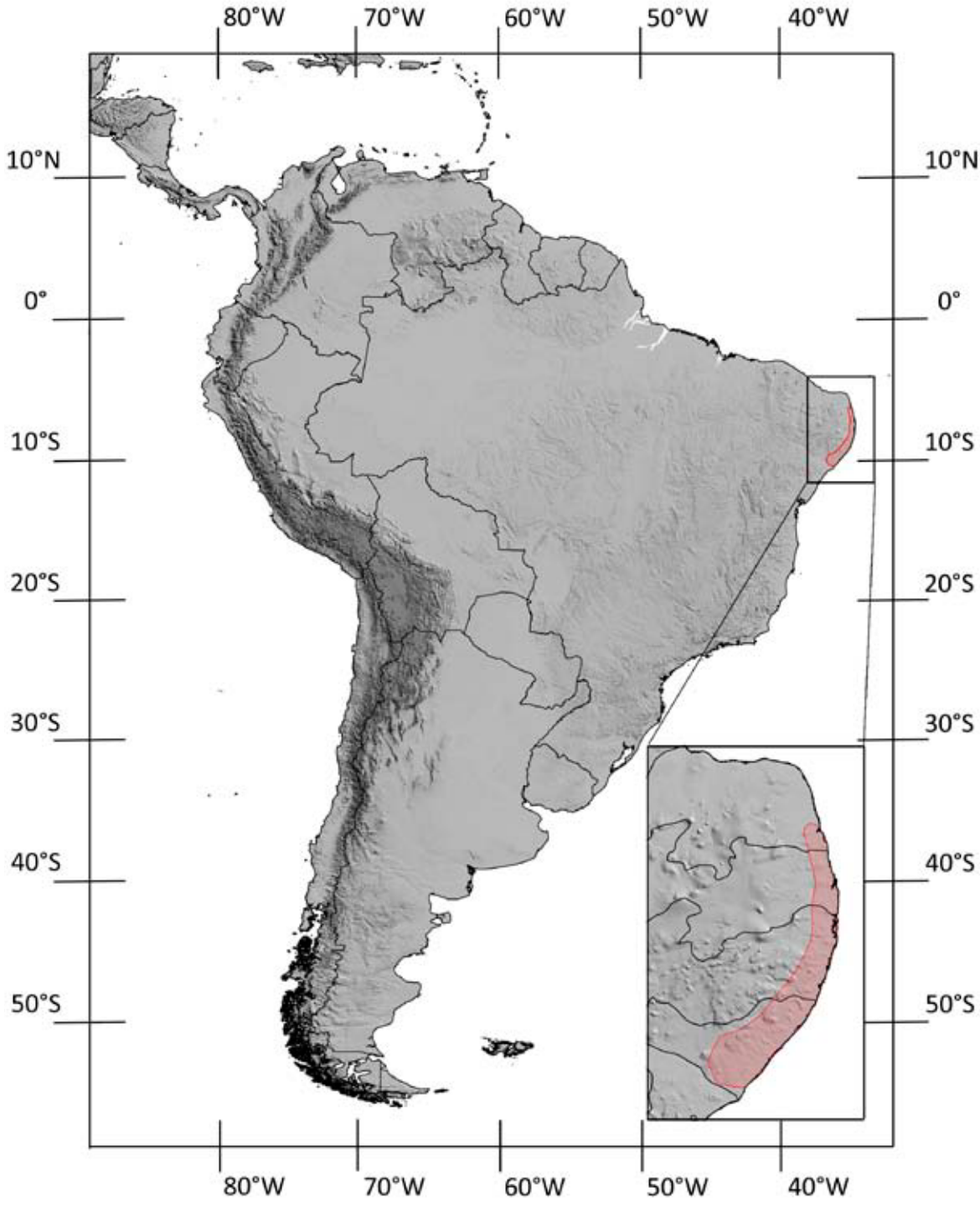


Figure 5. *Cyclopes didactylus*, northeastern Brazil subpopulation. Based on Wetzel (1982); Wetzel (1985); Fonseca *et al.* (1996); Gardner (2007); Aguiar and Fonseca (2008); Miranda and Superina (2010).

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Myrmecophaga tridactyla

Vulnerable (VU A2c)



Photograph: Flávia Miranda

Common Names: Giant anteater (English), oso hormiguero (Spanish), oso palmero (Spanish), oso caballo (Spanish), hormiguero gigante (Spanish), banderón caballo (Spanish), tamanduá bandeira (Portuguese), grand fourmilier (French), tamanoir (French).

Assessment Rationale: *M. tridactyla* is geographically widespread, but there have been many records of population extirpation, especially in Central America (where it is considered the most threatened mammal) and the southern parts of its range. The dietary specificity, low reproductive rates, large body size, along with threats to habitat degradation in many parts of its range, have proved to be significant factors in its decline. The giant anteater is currently listed in a threatened category in virtually all regional and national Red Lists. A population loss of at least 30% over the past 10 years has been estimated based on local extinctions, habitat loss, and deaths caused by fires and roadkills. Because of the real threats to this species and the noticeable declines, a precautionary assessment of Vulnerable is given. More data and population monitoring is required for this species, and a re-assessment is recommended as soon as additional information becomes available.

Taxonomic Note: Three subspecies are recognized by Gardner (2007).

Geographic Range: *M. tridactyla* has been recorded from Honduras in Central America, south through South America to the Gran Chaco region of Bolivia, Paraguay and Argentina (Fig. 6). Within Central America, the species has disappeared from much of its range, with recent sightings generally confined to highland regions. Its presence in Ecuador west of the Andes needs to be confirmed. Its extent of occurrence is estimated at 12,500,000 km^2.

Population: *M. tridactyla* is locally uncommon to rare. Habitat loss, roadkills, and wildfires are substantially affecting the wild populations and have led to a continuing decline in mature individuals. A population reduction of 30% has been estimated based on criterion A2c (see glossary). The causes for this population reduction are understood and have not ceased; it is unknown whether they are reversible.

Habitats and Ecology: This terrestrial anteater is found in tropical moist forest, dry forest, savanna habitats and open grasslands; it has also been reported from the Gran Chaco (Meritt, 2008; Noss *et al.,* 2008). Conversion of suitable habitat to soybean and sugarcane plantations is affecting the Brazilian subpopulations. There is also habitat loss in other range countries. Animals are generally solitary. Males and females reach reproductive maturity at two years of age. Once per year, the female gives birth to a single young. Gestation length is about 190 days. The mother carries the offspring on its back for approximately six months. As it is not possible to determine their age once they reach adult size and long-term population studies on giant anteaters are lacking, there are no data on the longevity, survival rates, or reproductive rates of wild giant anteaters. The generation length is therefore unknown.

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Threats: *M. tridactyla* is at risk from habitat loss in parts of its range, and this is a significant threat to Central American populations in particular. Where this species inhabits grassland habitats it is particularly susceptible to fires. Animals are sometimes killed on roads or by dogs. Giant anteaters are hunted for food throughout their distribution; this is especially true in the Caatinga area of Brazil. They are additionally hunted as a pest species, for pets or for illegal trade in some parts of their range. Their skin is sometimes used to manufacture harnesses and other leather products.

Conservation: *M. tridactyla* is listed on Appendix II of CITES. It has been recorded from many protected areas. It is listed on several national Red Lists, and is protected as a national heritage species in some provinces in Argentina. The giant anteater is considered the most threatened mammal of Central America; it seems to be extinct in Belize and Guatemala, and probably also in Costa Rica. In South America, this species is extinct in Uruguay (Fallabrino and Castiñeira, 2006) and in the state of Santa Catarina, Brazil (Cherem *et al.*, 2004). It is classified as Critically Endangered in Rio Grande do Sul, Brazil (Fontana *et al.*, 2003) but will be categorized as Extinct in the next update of this state's Red List (C. Kasper, pers. comm., 2009). There is a need to improve fire management practices, especially in sugarcane plantations and within the regions of grassland habitat occupied by this species. A Population Management Plan is in place in North American zoos and is being initiated in Brazil.

Assessors: Miranda, F. and Medri, I.M.

Evaluators: Superina, M. and Abba, A.M.

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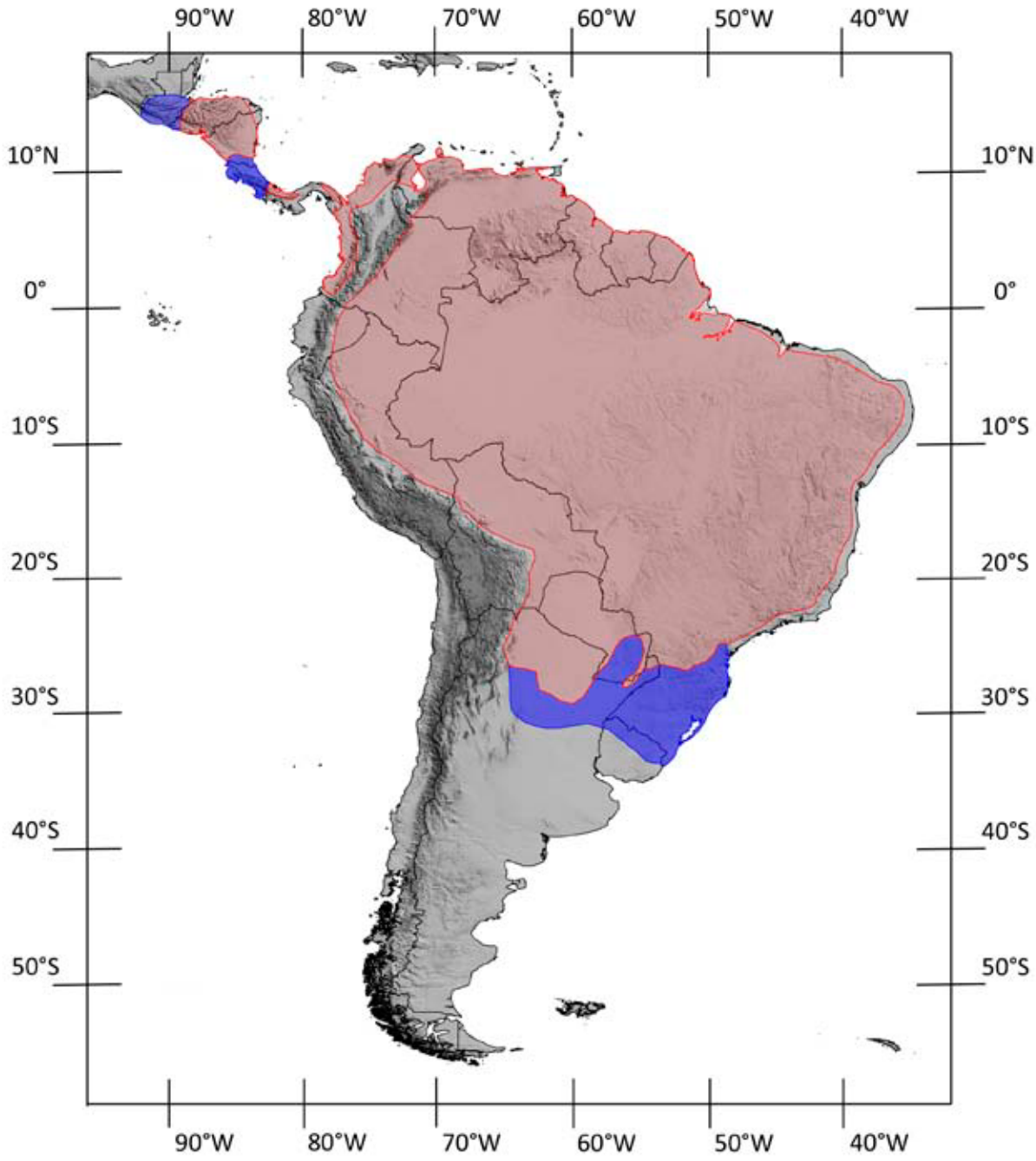


Figure 6. *Myrmecophaga tridactyla*. Blue: areas where the species is possibly extinct. Based on Sanborn (1953); Hall (1981); Wetzel (1982); Wetzel (1985); Eisenberg (1989); Anderson (1997); Emmons and Feer (1997); Reid (1997); Engstrom and Lim (2000); McCain (2002); Anonymous (2003); Fontana *et al.* (2003); INBio-SINAC (2003); INBio (2007); Cherem *et al.* (2004); Mikich and Bernils (2004); Fallabrino and Castiñeira (2006); Gardner (2007); Tirira (2007); Aguiar and Fonseca (2008); Koster (2008); Meritt (2008); Noss *et al.* (2008); Pérez-Jimeno and Llarín Amaya (2009); Smith (2009); Tarifa (2009). A. M. Abba, pers. comm. (2009); C. B. Kasper, pers. comm. (2009); N. Moraes-Barros, pers. comm. (2009); Í. M. Medri, pers. comm. (2009).

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Tamandua mexicana

Least Concern (LC)



Photograph: Santiago Escobar

Common Names: Northern tamandua (English), tamandúa (Spanish), oso melero (Spanish), oso mielero (Spanish), oso hormiguero (Spanish).

Assessment Rationale: *T. mexicana* is listed as Least Concern in view of its wide distribution, presumed large population, its occurrence in a number of protected areas, its tolerance of a degree of habitat modification, and because it is unlikely to be declining fast enough to qualify for listing in a threatened category.

Taxonomic Note: Wetzel (1982) recognizes five subspecies of *T. mexicana*. Further taxonomic work is needed for this species.

Geographic Range: *T. mexicana* ranges from southern Mexico in the north of its range, through Central America as far south as northwestern Peru and northwestern Venezuela (Fig. 7). It ranges from sea level to 2,000 m asl, although most sightings have been recorded from areas below 1,000 m asl (Cuervo-Díaz *et al*., 1986; Eisenberg, 1989, Cuarón, 2005; Tirira, 2007). Its extent of occurrence is approximately 1,500,000 km^2.

Population: The northern tamandua is common in appropriate habitat. It is, however, considered uncommon in Ecuador (Tirira, 2007, 2008), where populations are highly fragmented. Population density estimates vary from 0.06 individuals per hectare in Costa Rica (Guariguata *et al*., 2002) to 0.13 individuals per hectare in Panama (Montgomery, 1985a). Its home range has been estimated at 25 hectares in Central America and Ecuador (Montgomery, 1985a; Tirira, 2007) and 70 hectares in Panama (Eisenberg, 1989).

Habitats and Ecology: *T. mexicana* is found in tropical and subtropical dry and moist forest, including mixed deciduous and evergreen habitats. It can also be found in mangroves and grassland with some trees. It can survive in secondary forests and in disturbed habitats. The most common coloration is tan with a black vest on back and sides (Wetzel, 1985) but uniformly tan individuals without vest also occur. *T. mexicana* can move, feed and rest on the ground and trees (Lubin and Montgomery, 1981; Montgomery, 1985a, 1985b). It also swims (Esser *et al*., 2010). The females give birth to one young at any time of the year (Reid, 1997). Gestation length estimates vary between 130 and 150 days (Silveira, 1969). The mating behavior has been described by Matlaga (2006).

Threats: Roadkills, wildfires and habitat change are affecting this arboreal anteater, but the scope of these threats is unknown. In rural Ecuador, *T. mexicana* is persecuted because it attacks domestic dogs when defending itself (Tirira, 2007). It is used as a pet species in southern Mexico (Lira-Torres, 2006), and

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indigenous people may hunt it for food in some areas (Espinoza *et al*., 2003; Méndez-Cabrera and Montiel, 2007).

Conservation: The population of *T. mexicana* in Guatemala is listed on Appendix III of CITES. It has been recorded from several protected areas, among them Soberanía National Park (Panamá), Machalilla National Park, and the Ecological Reserves Arenillas, Cotacachi-Cayapas, Mache-Chindul and Manglares Churute (all in Ecuador; Tirira, 2007).

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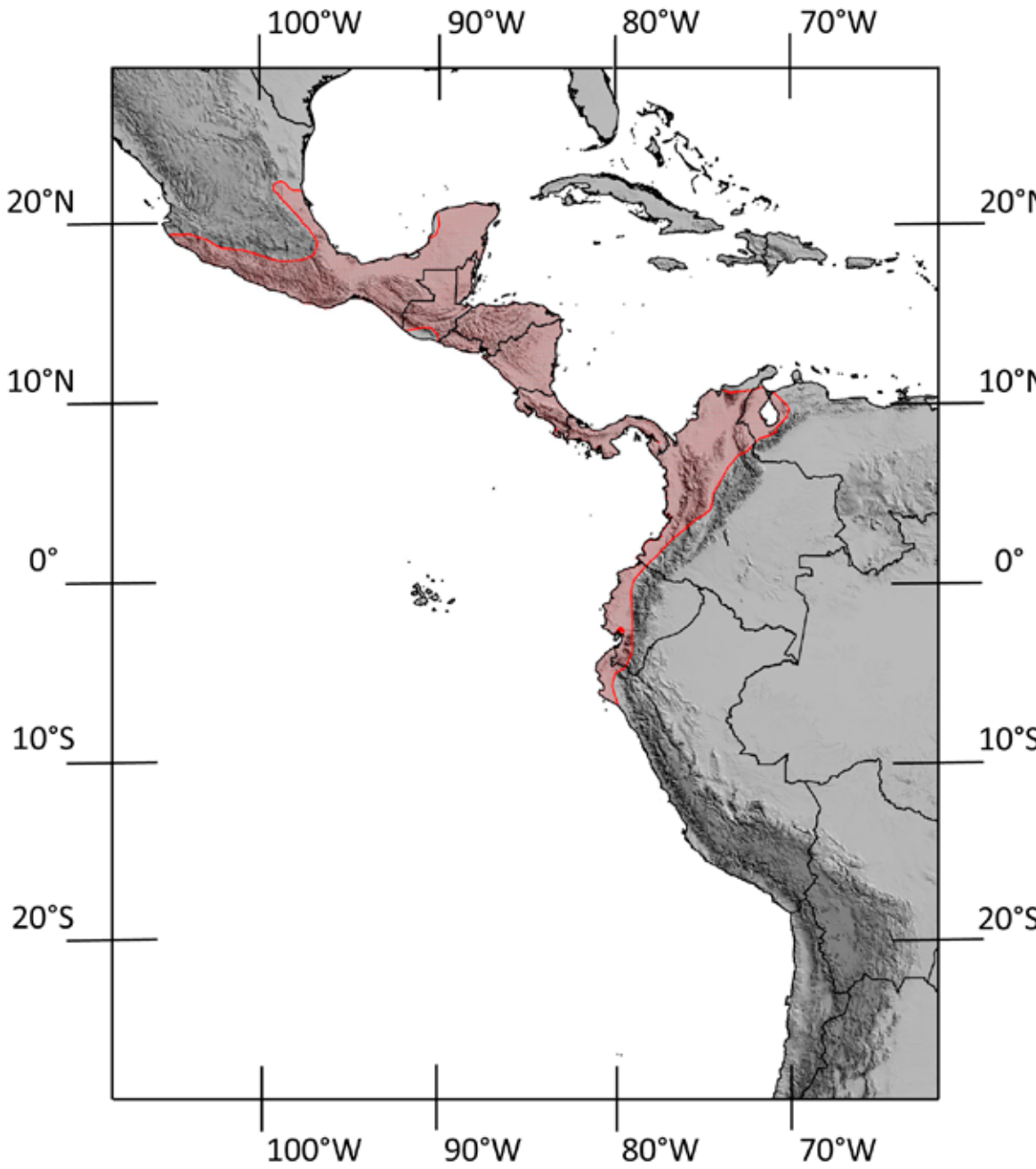


Figure 7. *Tamandua mexicana*. Based on Hall (1981); Wetzel (1982); Wetzel (1985); Cuervo-Díaz *et al.* (1986); Eisenberg (1989); Pacheco *et al.* (1995); Emmons and Feer (1997); Reid (1997); Alberico *et al.* (2000); Cuarón (2005); Gardner (2007); Tirira (2007); Aguiar and Fonseca (2008).

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Tamandua tetradactyla

Least Concern (LC)



Photograph: Monalisa Duarte

Common Names: Southern tamandua (English), tamandua (English), collared anteater (English), lesser anteater (English), tamanduá (Spanish), oso melero (Spanish), brazo fuerte (Spanish), hormiguero de collar (Spanish), tamandúa de collar (Spanish), tamanduá-mirim (Portuguese), tamanduá de colete (Portuguese), mambira (Portuguese), fourmilier à collier (French), tamandou tétradactyle (French), tamandou à quatre doigts (French).

Assessment Rationale: *T. tetradactyla* is listed as Least Concern in view of its wide distribution, presumed large population, its occurrence in a number of protected areas, and because it is unlikely to be declining fast enough to qualify for listing in a threatened category.

Taxonomic Note: There are four subspecies of *T. tetradactyla* (Gardner, 2007).

Geographic Range: *T. tetradactyla* is found to the east of the Andes from Colombia, Venezuela, Trinidad Island, and the Guianas (French Guiana, Guyana, and Suriname), south to northern Uruguay and northern Argentina (Fig. 8). It ranges from sea level to 2,000 m asl (Emmons and Feer, 1990). The extent of occurrence of this species is approximately 12,800,000 km^2.

Population: *T. tetradactyla* is a relatively common species.

Habitats and Ecology: The southern anteater is adaptable to a variety of habitats, including gallery forests adjacent to savannas, and lowland and montane moist tropical rain forest (Eisenberg, 1989). It can also be found in mangroves (F. Miranda, pers. comm., 2010).

Typically, this solitary species has pale tan or golden fur with a black vest, but uniformly tan to black coloration also occurs (Wetzel, 1985). It mainly feeds on ants and termites, but also attacks bees nests to eat honey (Emmons and Feer, 1990). Both genders reach sexual maturity at two years of age. The female gives birth to a single young once per year (Silveira, 1968). Gestation length estimates vary from 130 to 150 days.

Threats: There are no major threats to this small anteater, although in some portions of its range it is hunted for meat, by domestic dogs, or (inappropriately) used as a pet species (Aguiar and Fonseca, 2008; Noss *et al.,* 2008; D.A. Meritt Jr., pers. comm., 2010). Tamanduas that are found in the wild are donated or sold to private persons or zoos, and may be involved in animal traffic. Habitat loss and degradation, wildfires, and road traffic represent a threat in some areas. In Uruguay, *T. tetradactyla* is affected by habitat loss due to the increase in eucalyptus plantations (A. Fallabrino, pers. comm., 2010).

Conservation: *T. tetradactyla* is present in a number of protected areas. Further systematic studies on the

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southern tamandua are needed to investigate population densities and dynamics in different parts of its range. Studbooks for captive tamanduas exist in some range countries, and a Population Management Plan has been established in AZA zoos.

Assessors: Miranda, F. and Meritt Jr., D.A.

Evaluators: Fallabrino, A. and Superina, M.

Contributors: Fallabrino, A., Tirira, D., Arteaga, M.C. and Rogel, T.

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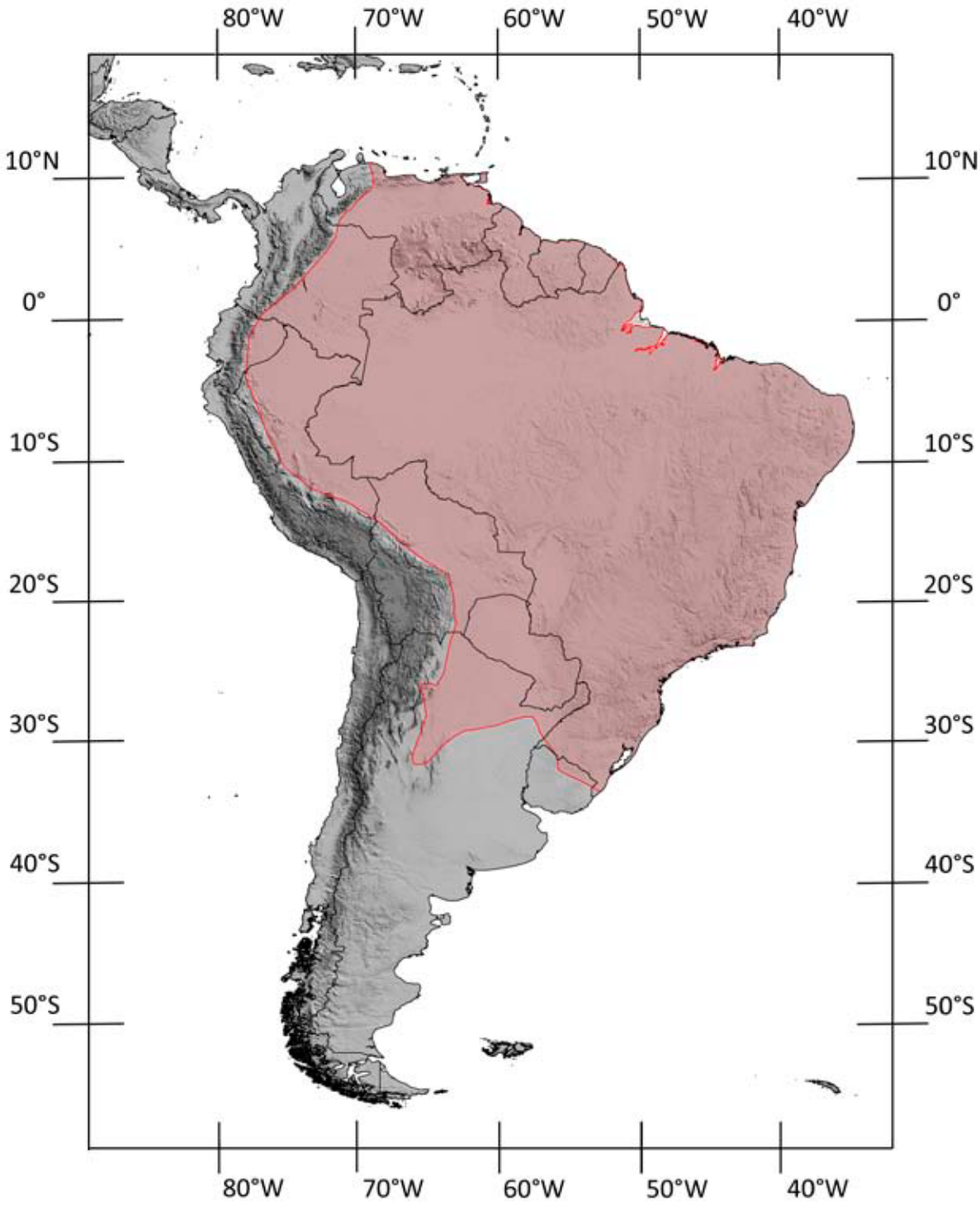


Figure 8. *Tamandua tetradactyla.* Based on Sanborn (1953); Wetzel (1982); Wetzel (1985); Eisenberg (1989); Emmons and Feer (1990); Pacheco *et al.* (1995); Anderson (1997); Alberico *et al.* (2000); Engstrom and Lim (2000); Agüero *et al.* (2003); Fallabrino and Castiñeira (2006); Vizcaíno *et al.* (2006); Fra *et al.* (2007); Gardner (2007); Aguiar and Fonseca (2008); Tirira (1999); Noss *et al.* (2008); Fallabrino *et al.* (2009); Smith (2009); Torres *et al.* (2009). A. Agüero, pers. comm. (2009) ; T. Rogel, pers. comm. (2009).

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