

Official List of Brazilian Fauna Threatened with Extinction – 2002

A workshop, involving about 200 Brazilian and international specialists, was held from 9-12 December, 2002, in Belo Horizonte, Minas Gerais, to revise the Official List of Brazilian Fauna Threatened with Extinction (*Lista Oficial da Fauna Brasileira Ameaçada de Extinção*). The previous revision was in 1989 (Edict 1.522, 19th December, 1989; Bernardes *et al.*, 1990). The workshop was coordinated by the Fundação Biodiversitas, in collaboration with the local NGO Terra Brasilis, Conservation International do Brasil (CI do Brasil), and the Sociedade Brasileira de Zoologia (SBZ), and was held at the specific request of the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA) of the Ministry of the Environment (MMA). Sponsorship was provided by the Programa de Biodiversidade (PROBIO) of the Ministry of the Environment (MMA), Shell do Brasil, Grupo Odebrecht, and Conservation International do Brasil. It was also supported by the US Fish and Wildlife Service and Avina.

Demonstrating the importance given to this workshop as a major evaluation of the status of the nation's fauna by the scientific community, the opening ceremony was attended by the Minister of the Environment of Brazil, José Carlos Carvalho; the Minas Gerais State Secretary for the Environment, Celso Castilho; the President of Biodiversitas, Roberto Messias Franco; the President of IBAMA, Rômulo José Fernandes Barreto Melo; the President of SBZ, Olaf Mielke; the Director President of CI do Brasil, Roberto Brandão Cavalcanti; and the Director of Terra Brasilis, Sônia Rigueira.

The list of threatened species tripled from 218 in the 1989 revision to 630, with two extinct in the wild (still maintained in captivity) and a further 10 extinct. The increase in numbers was due to the inclusion of new groups (fish and many invertebrate groups) which had not been assessed previously (only some insects, including

Odonata, and Onycophora and Cnidaria were assessed in 1989), but also to an increase in our knowledge of the status of the country's fauna. Eight edentates were assessed, and four were listed as threatened, of which two are endemic to Brazil (*Bradypus torquatus* and *Tolypeutes tricinctus*). The criteria used to evaluate threatened status were those of the IUCN – World Conservation Union Species Survival Commission (SSC), Version 3.1 (IUCN, 2001), with adaptations to a regional scale as proposed by Gärdenfors *et al.* (2001) and approved by the SSC.

Adriano Chiarello (Pontifícia Universidade Católica de Minas Gerais, Belo Horizonte) was the coordinator for the Mammal Group. Gustavo A. B. da Fonseca (Center for Applied Biodiversity Science at Conservation International and Universidade Federal de Minas Gerais, Belo Horizonte) and Adriano Chiarello were joint coordinators of the Edentate Sub-group. Prior to the workshop, information and the opinions of numerous mammalogists and conservationists were solicited through a site on the internet specifically set up for the purpose by the Fundação Biodiversitas. To give an idea of the extent to which the scientific and conservation community were consulted, we give here some statistics. Fifty-two people replied to the consultation for Brazilian mammals, providing a total of 392 “contributions” in terms of pertinent information on a particular species (Table 1). Dividing them into six groups, it can be seen that the Primates and Carnivora attracted the most attention, with 103 contributions from 15 people for

TABLE 1. The number of people who provided information for the assessment of the threatened status of Brazilian mammals in the pre-workshop consultation, and the number of contributions regarding a particular species.

Sub-group	Informants	Contributions
Primates	15	103
Carnivora	21	93
Chiroptera	6	33
Aquatic mammals	8	42
Small mammals	13	42
Other mammals	22	79

the former, and 93 contributions from 21 people for the latter. Fifteen people provided useful input (37 contributions) regarding the status of the Brazilian edentates.

Threatened Edentates

Following the criteria and categories of IUCN (2001), the assessments for eight species of Brazilian edentates resulted in the listing of four as threatened and four as “Data Deficient” (Table 2). The threatened species were ranked as “Vulnerable”. Two of them have a wide geographic distribution, the giant armadillo (*Priodontes maximus*) and the giant anteater (*Myrmecophaga tridactyla*). Although widely distributed, these species seem to be rare everywhere, a fact related

to their large body size and specialized diet (social insects). The other two threatened edentates have much smaller ranges: the northern three-banded armadillo, or tatu bola (*Tolypeutes tricinctus*), which is restricted to the Caatinga (a xerophytic desert scrub and deciduous forest) of northeastern Brazil and adjacent parts of the Cerrado; and the maned sloth (*Bradypus torquatus*), which occurs in the Atlantic forest in the states of Bahia, Espírito Santo and Rio de Janeiro.

Ascertaining the conservation status of most Brazilian edentates was a rather difficult task given the overwhelming lack of basic population and ecological data for most species, even for the largest and most conspicuous. This limitation is

TABLE 2. Edentates on the Official List of Brazilian Fauna Threatened with Extinction, their category and the criteria of threat (following IUCN, 2001), and their distributions in terms of countries, states, and biome. Workshop: Revisão da Lista Oficial da Fauna Brasileira Ameaçada de Extinção, December 2002.

Species and subspecies	Common name	Distribution	States	Biome				Criteria (IUCN, 2001)
				MA	AM	CE	CA	
Vulnerable (VU)								
<i>Bradypus torquatus</i>	Maned sloth	Brazil	SE, BA, ES, MG, RJ	x				A2cd
<i>Myrmecophaga tridactyla</i>	Giant ant-eater	South and Central America	AC, AM, BA, DF, GO, MG, MT, PI, RO, RS, SC, AP, MA, MS, PA, PR, RR, SP, TO	x	x	x	x	A2cd
<i>Tolypeutes tricinctus</i>	Three-banded armadillo	Brazil	BA, GO, PI, AL, RN			x	x	A2cd
<i>Priodontes maximus</i>	Giant armadillo	South America	AC, AM, BA, DF, GO, MG, MT, PI, RO, AP, ES, MS, PA, RR, TO	x	x			A2cd
Data Deficient (DD)								
<i>Tolypeutes matacus</i>	Southern three-banded armadillo	Bolivia, Paraguay, Argentina, Brazil	MT			x		Data Deficient
<i>Cabassous tatouay</i>	Greater naked-tailed armadillo	Brazil, Uruguay, Paraguay, Argentina	PI, PA, MT, MS, GO, ES, RJ, PR, SP	x		x		Data Deficient
<i>Cabassous chacoensis</i>	Chacoan naked-tailed armadillo	Brazil, Bolivia, Paraguay, Argentina	MT, MS			x		Data Deficient
<i>Dasybus hybridus</i>	Southern lesser long-nosed armadillo	Brazil, Paraguay, Argentina	RS	x				Data Deficient

States: AC = Acre, AL = Alagoas, AM = Amazonas, AP = Amapá, BA = Bahia, DF = Federal District, ES = Espírito Santo, GO = Goiás, MA = Maranhão, MG = Minas Gerais, MS = Mato Grosso do Sul, MT = Mato Grosso, PA = Pará, PI = Piauí, PR = Paraná, RJ = Rio de Janeiro, RN = Rio Grande do Norte, RO = Rondônia, RR = Roraima, RS = Rio Grande do Sul, SC = Santa Catarina, SE = Sergipe, SP = São Paulo, TO = Tocantins. **Biomes:** MA = Mata Atlântica, AM = Amazônia, CE = Cerrado, CA = Caatinga.

most severe for armadillos, which are notoriously difficult to observe and study in the wild. Almost nothing, for example, is known of the naked-tailed species of the genus *Cabassous*. Two species of this genus were listed as data deficient (*C. tatouay* and *C. chacoensis*) as a result. In general terms the most prominent threat to xenarthrans in Brazil is habitat destruction or alteration. This is happening not only in the Atlantic forest, where the giant armadillo and the giant anteater are on the verge of regional extinction, but also in the Cerrado and Caatinga. Enormous tracts of Cerrado in the states of Goiás, Mato Grosso and Tocantins, for example, are being cleared at accelerating speeds to make room for pasture and soy bean plantations. This vast region is the major agricultural frontier in Brazil, attracting farmers from other states, notably from southern Brazil, that take advantage of the relatively low land prices. Other main threats include illegal hunting, widespread in Brazil, and fire, notably in the Cerrado region, which particularly affects the giant anteater.

The following people contributed to the pre-workshop consultation for edentates: José de Sousa e Silva Jr., Tadeu de Oliveira, Teresa Cristina Anacleto, Carlos Eduardo Grelle, Fernando Passos, Vera Lúcia Oliveira, Sérgio Maia Vaz, Laurenz Pinder, Rogério C. Paula, Cristiane Encarnação, Antônio R. Mendes Pontes, Denis Sana, Maria Auxiliadora Drumond, Sônia Talamoni, and Flávio Rodrigues.

Prof. Ângelo B. M. Machado, world expert on Neotropical dragonflies, and Professor of Zoology at the Federal University of Minas Gerais, led the assessment process in 1989 (Bernardes *et al.*, 1990), representing the Sociedade Brasileira de Zoologia (SBZ). He was again the driving force for the 2002 re-assessment of the Official List of Brazilian Fauna Threatened with Extinction. This time, representing the Fundação Biodiversitas, he was general coordinator for the workshop and the assessment, and most competently supported by the staff, who are uniquely experienced in carrying out these sorts of workshops (see, for example, Fonseca *et al.*, 1994; Lins *et al.*, 1997; Machado *et al.*, 1998; Mendonça and Lins,

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Online Bibliography on Armadillos

Dr. Mariella Superina, Med. Vet. has compiled an extensive bibliography on armadillos, which contains approximately 2700 titles. References cited are grouped by years: to 1900, 1901-1950, 1951-1960, 1961-1970, 1971-1980, 1981-1990, 1991-2000, and undated. Each reference grouping is available to download as a single large PDF file, typically with 20-30 pages of references for each of the later decades. The bibliography may be found online at: <http://www.vetmed.lsu.edu/pbs/armadillo_bibliography.htm> and is updated regularly. Dr. Superina would greatly appreciate any comments, error reports, and notes regarding missing entries, as well as citations for any new publications. For further information contact: Dr. Mariella Superina, University of New Orleans, Department of Biological Sciences, New Orleans, LA 70148-0001, Tel: (504) 280-6737 or e-mail: <mariella@superina.ch> or <mesuperi@uno.edu>.

Kaa-Iya Project, Gran Chaco, Bolivia

The Kaa-Iya Project is a collaboration between the Wildlife Conservation Society (WCS) and the Capitanía del Alto y Bajo Izozog (CABI – the political representation of the Izoceño-Guaraní Indians), with support from the United States Agency for International Development (USAID). In order to conserve biodiversity in the Kaa-Iya National Park (3.4 million ha) and the neighboring Izoceño indigenous territory (1.9 million ha)

through community wildlife management, the project began a self-monitoring program with Izoceño hunters in 1996. Several hundred hunters participated from 20 communities. Armadillos are hunted a little less than ungulates, with five species representing 4000 captures (in order of importance): *Dasypus novemcinctus*, *Tolypeutes matacus*, *Chaetophractus villosus*, *Euphractus sexcinctus* and *C. vellerosus*. The first two species alone comprised three-quarters of the captures. Subsistence hunting (armadillos are not hunted for commercial means) in the Izoceño indigenous territory appears to be sustainable except possibly in the case of *T. matacus*. A management measure proposed in community meetings, but not yet implemented, is to restrict hunting of female armadillos during the reproductive season (September-December for all species, the austral springtime with the end of the dry season and beginning of the rainy season).

A sixth sympatric species in the Izozog of Chacoan thorn scrub and grasslands is *Chlamyphorus retusus*, which the Izoceños consider to be an evil omen (see *Edentata* (4): 14-16, 2001). The eastern and northern regions of the Kaa-Iya National Park are also home to *Priodontes maximus* in Chiquitano transitional dry forest, recorded in camera traps along the Bolivia-Brazil gas pipeline. Finally, we have registered *Cabassous unicinctus* in Chiquitano transitional dry forest just north of the Bolivia-Brazil gas pipeline and the Kaa-Iya National Park. This record comprises the southernmost location for the species' known distribution in Bolivia, and a significant range extension.

Two other edentates, *Tamandua tetradactyla* and *Myrmecophaga tridactyla*, are present in both Chacoan and Chiquitano transitional dry forests. Izoceños occasionally consume *M. tridactyla* meat, and the species is a preferred prey item for Ayoreo Indians, whereas *T. tetradactyla* is killed only accidentally and infrequently by dogs.

Hunting records have provided useful information on activity patterns and habitat use for the five species which are important prey items. In