



EXECUTIVE SUMMARY OF THE NATIONAL ACTION PLAN FOR THE CONSERVATION OF CENTRAL ATLANTIC FOREST MAMMALS





The Class Mammalia is among the most charismatic vertebrates, including primates as monkeys, tamarins and marmosets, predators as jaguars, giant otters and wolves, and small mammals as rodents, bats and marsupials. Mammals compose one of the better studied animal groups; occur in a great diversity of environments, and present distinct and interesting behaviors.

It has been estimated the existence of approximately 5,000 mammal's species in the whole world, mostly rodents (40%) and bats (20%). In Brazil it has been reported the occurrence of 530 mammals' species, among these 66 are threatened.

The drastic anthropic changes that Brazilian Atlantic Forest had experienced in the last 150 years, as consequence of the expansion of urban and rural areas, besides hunting and illegal trade, had caused habitat fragmentation and severe reduction in populations' sizes, resulting in serious threats to mammalian species, specially the larger ones.

Of 250 mammalian species registered in the Brazilian

Atlantic Rain Forest, 55 are endemic to this biome and 38 are threatened. Also, some species have already disappeared in certain regions and localities. For these reasons, with the legal support of the Ordinance 316/2009 of the Ministry of Environment and ICMBio, it was established a covenant with society defining strategies to recover these species in the form of a national action plan.



Sávio Freire Bruno

Maned-Three-Toed-Sloth, *Bradypus torquatus*



Celso Magraf

Black-Faced-Lion-Tamarin, *Leontopithecus caissara*

THE PLAN

The National Action Plan (NAP) for the conservation of central Atlantic Forest Mammals has a geographic approach, rather than specific, including the states: Espírito Santo, São Paulo, Rio de Janeiro, and part of Minas Gerais, Bahia and Paraná, in a region under high human pressure and of great relevance in Brazil's socioeconomic scenario. The action plan's premise is the synergistic and systemic attribute of the conservation process, ie., threats common to several species should result in conservation actions to benefit not just one species, but a set of these.

The NAP for the conservation of central Atlantic Forest mammals deals with 25 species included in risk categories, one species regarded as near threatened and one species considered data deficient, but with negative appointments about its conservation status (Table 1). Among these 27 species, 26 are endemic to the Atlantic Forest and one also occurs in the Caatinga biome - the critically endangered yellow-breasted-capuchin, *Cebus xanthosternos*, which has been included in the NAP in order to benefit the populations recorded in the Atlantic portion of its distribution. The NAP includes 13 species of primates, including the four species of lion tamarins (*Leontopithecus* spp.), two of the most endangered primates in Brazil, the Northern-Muriqui (*Brachyteles hypoxanthus*) and the Howler-Monkey (*Alouatta guariba guariba*), and species of other orders, including 10 species of rodents (Order Rodentia), two bats (Order Chiroptera), the Maned-Three-Toed-Sloth (*Bradypus torquatus*) and the Brocket-Deer (*Mazama Bororo*).



Marcos Antônio Nóbrega de Souza

Painted-Tree-Rat, *Callistomys pictus*



Table 1 – Mammalian species included in the NAP for the conservation of central Atlantic Forest mammals: (?) uncertain; ** alien species; *not included in the Brazilian official threatened species list, allocation based on IUCN list.
CR – Critically endangered, **EN** – Endangered, **VU** – Vulnerable, **NT** – Near threatened, **DD** – Data deficient.

Taxa	Common Name	Occurrence	Threat Category	Total Species number
<i>Alouatta guariba guariba</i>	Northern-Brown-Howler-Monkey	MG e BA	CR	6
<i>Leontopithecus caissara</i>	Black-Faced-Lion-Tamarin	SP e PR	CR	
<i>Leontopithecus chrysopygus</i>	Golden-Rumped-Lion-Tamarin	SP	CR	
<i>Brachyteles hypoxanthus</i>	Northern-Muriqui	BA, ES, MG, RJ	CR	
<i>Cebus xantosternus</i>	Yellow-Breasted-Capuchin	BA, MG, SE	CR	
<i>Phyllomys unicolor</i>	Unicolored-Tree-Rat	BA	CR	
<i>Phyllomys brasiliensis</i>	Red-Nosed-Tree-Rat	MG	EN	8
<i>Phyllomys thomasi</i>	Giant-Atlantic-Tree-Rat	SP	EN	
<i>Trinomys moojeni</i>	Spiny-Rat	MG	EN*	
<i>Leontopithecus chrysomelas</i>	Golden-Headed-Lion-Tamarin	BA, MG e RJ**	EN	
<i>Leontopithecus rosalia</i>	Golden-Lion-Tamarin	RJ	EN	
<i>Callithrix flaviceps</i>	Buffy-Headed-Marmoset	MG, ES e RJ ⁽¹⁾	EN	
<i>Brachyteles arachnoides</i>	Southern-Muriqui	RJ, SP e PR	EN	
<i>Trinomys eliasi</i>	Spiny-Rat	RJ	EN*	
<i>Bradypus torquatus</i>	Maned-Three-Toed-Sloth	RJ, BA, ES, SE	VU	11
<i>Cebus robustus</i>	Robust-Tufted-Capuchin	BA, ES, MG	VU	
<i>Callithrix aurita</i>	Buffy-Tufted-Ear-Marmoset	RJ, MG e SP	VU	
<i>Callicebus melanochir</i>	Southern-Bahian-Masked-Titi	BA e ES	VU	
<i>Callicebus personatus</i>	Northern-Masked-Titi	RJ, MG e ES	VU	
<i>Chaetomys subspinosus</i>	Thin-Spined-Porcupine	ES, BA, MG e SE	VU	
<i>Callistomys pictus</i>	Painted-Tree-Rat	BA	VU	
<i>Phaenomys ferrugineus</i>	Rio-de-Janeiro-Arboreal-Rat	RJ e SP	VU	
<i>Rhagomys rufescens</i>	Brazilian-Arboreal-Mouse	ES, MG, SP, SC e RJ ⁽¹⁾	VU	
<i>Lasiurus eburnus</i>	Blackish-Red-Bat	SP	VU	
<i>Lonchophylla bokermanni</i>	Bokermann's-Nectar-Bat	RJ e MG ⁽¹⁾	VU	
<i>Mazama bororo</i>	Small-Red-Brocket-Deer	PR, SP, SC e RJ ⁽²⁾	NT*	1
<i>Trinomys paratus</i>	Spiny-Rat	MG e ES	DD*	1
			Total	27

THREATS

According to the Instituto Brasileiro de Geografia e Estatística (IBGE) the region includes the most populous states in Brazil (RJ, SP and MG) with 42% of the whole Brazilian population. These states are important producers of orange, sugar-cane, soy, cattle (summing approximately 19% of the national livestock), poultry (answering for 36% of poultry production in Brazil), and are responsible for almost 70% of the national industrial production.

Biodiversity loss has been pointed out as one of the most important problems derived from the human population growth and related activities (increase of agricultural and urban areas, atmospheric and water pollution, increasing in highways and roads systems), and also predatory practices as hunting, illegal animal trade, logging and deforestation etc. Several pressure factors act negatively over the mammals focused in the NAP (figure 1).

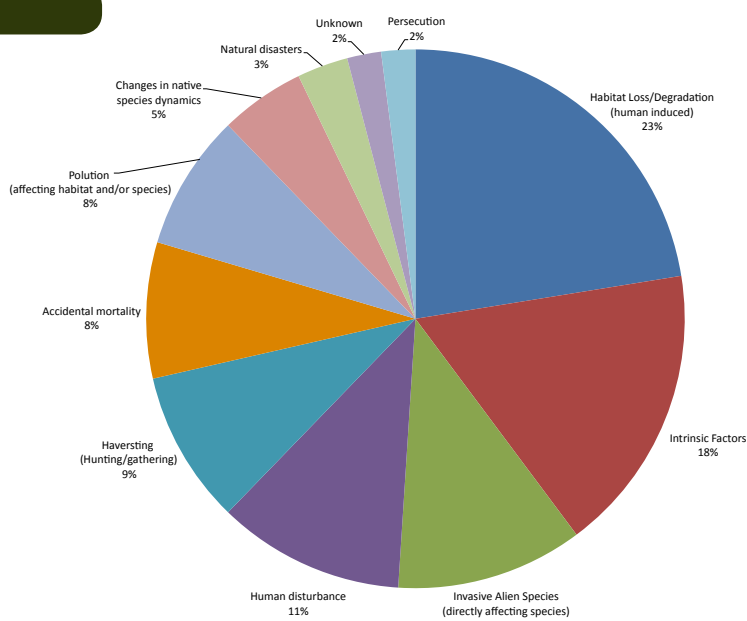


Figure 1. Threats to the target-taxa.



The establishment of conservation unities has been applied to minimize the effects of habitat fragmentation and *in situ* conservation of fauna and flora. In the central portion of the Atlantic Forest more than six million hectares are protected, mainly in the form of protected federal and state officials; highlighted beyond this, the network of private reserves (RPPN) (with more than 40 000 hectares in this region of the PAN) assists in the process of connection between the patches of vegetation and thereby contributing to the genetic health and the demographic health of animal populations.

Despite all efforts already invested, problems stemming from human population growth and the degradation and fragmentation of habitats, still sharp, such as the inadequate management and extremely impactful to the environment of agricultural crops, the deficiency in planning for the expansion of urban and rural areas, and others are still present. Thus, the number of threatened species may increase and some may disappear in the upcoming decades if short and medium term actions are not taken.



Marcelo Dutra da Silva

Red-Nosed-Tree-Rat, *Phyllomys thomasi*

THE INSTITUTO CHICO MENDES STRATEGY FOR THE CONSERVATION OF CENTRAL ATLANTIC FOREST MAMMALS

Christoph Knogge



Buffy-Tufted-Ear-Marmoset, *Callithrix aurita*

The NAP for the conservation of central Atlantic Forest mammals was consolidated in two steps. First it was made a compilation of biological data and threats for each species, with basis on published data and information provided by researchers.

The second step was a planning workshop, realized in Ilhéus, Bahia state, from 15th to 20th November, 2010. There, 60 actors were present representing national and international institutions, governmental and nongovernmental. During the event it was delimited four strategic areas, based on the co-occurrence of taxa (Figure 2). The actors identified and elected the major threats to the 27 species. Taking as base the problems, it was defined six goals, 33 indicators and more than 100 actions to increase the conservation of species and their habitats. Agreements were negotiated and contributors assumed the responsibility of implementing each of these actions.

The objective of the NAP for the conservation of Central Atlantic Forrest Mammals is to increase populational viability of target-species, with the reversion of populational decline and the increment of the extension, conectivity and quality of its habitats in strategic areas in five years.

The coordination of the NAP for the Conservation of Central Atlantic Forest Mammals



is responsibility of the Centro Nacional de Pesquisa e Conservação de Primatas Brasileiros, CPB/ICMBio, under the supervision of the Coordenação-Geral de Espécies Ameaçadas of the Diretoria de Conservação da Biodiversidade, CGESP/DIBIO.

The assessor group is defined in the ICMBio Ordinance 134/2010.

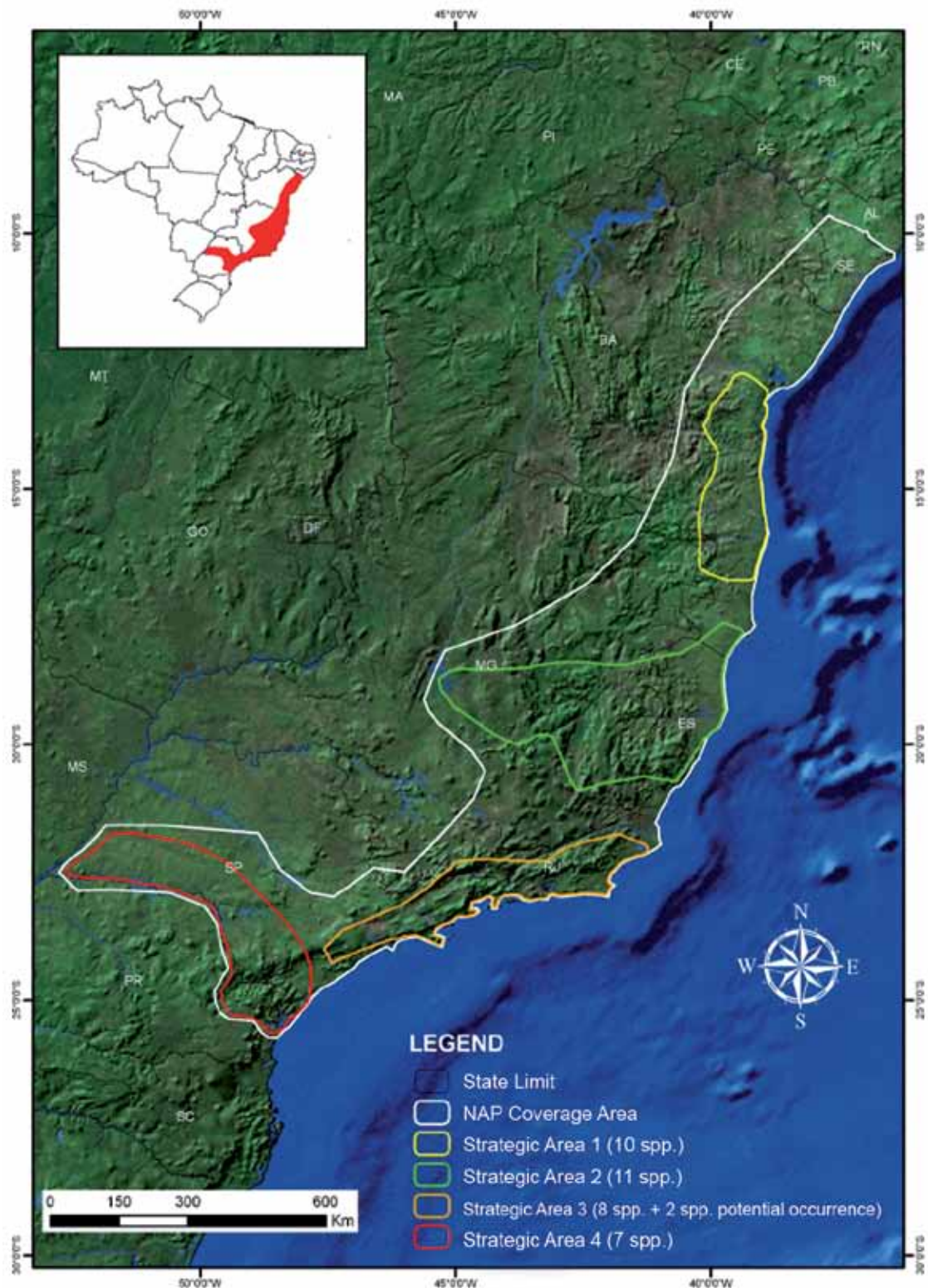


Figure 2. Area of the NAP for the Conservation of Central Atlantic Forest Mammals, and the strategic areas defined in the workshop.



Planning Matrix of the NAP for the Conservation of Central Atlantic Forest Mammals

Goals	Indicators (Expected Results)	Number of Actions	Estimated Cost (US\$)*
1. habitats maintained or enlarged, with increment of its connectivity	<ul style="list-style-type: none"> 100% of the target-species with distribution in Rio de Janeiro and northeastern São Paulo with populations protected inside full protection conservations unities 	2	12,773.00
	<ul style="list-style-type: none"> Management of the actual habitat state and increase in at least 20% of the connectivity in areas of occurrence of the target-species golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer and the red-nosed-tree-rat. 	8	562,978.00
	<ul style="list-style-type: none"> Decrease in at least 50% of the ilegal palmetto extraction in conservation unities and its buffering areas where it has been reported the occurrence of the southern-muriqui and the small-brocket-deer 	5	120,866.00
	<ul style="list-style-type: none"> Development of an environmental health program and conservation medicine, considering municipalities with occurrence of populations of golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer and the red-nosed-tree-rat 	6	955,000.00 + 64,000.00/ species
	<ul style="list-style-type: none"> Integrity (without expressive antropic generated effect) of at least 70% of the largest Forest fragments (> 1.000 ha.) maintained in southern Bahia 	6	3,378,000.00
	<ul style="list-style-type: none"> Forest cover increased in at least 15% in areas considered of relevance for the target-species with occurrence in southern Bahia 	5	1,149,000.00
	<ul style="list-style-type: none"> 100% of the Cabruca areas (native Forest shaded cocoa cultivation) in southern Bahia maintained in areas of relevance for targe-species 	5	636,132.00
	<ul style="list-style-type: none"> Native Forest cover in Espírito Santo and northeastern Minas Gerais increased in at least 5%, in order to favor connectivity and expansion of available habitat 	4	4,199,000.00
	<ul style="list-style-type: none"> Environmental degradation reduced in 20% in areas of occurrence of target-species in Espírito Santo and northeastern Minas Gerais 	6	674,300.00
	<ul style="list-style-type: none"> Protection areas established in the form of Integral protection unities, and particular reserves (RPPN) strengthened, and expanded in 10% in Espírito Santo and Minas Gerais 	4	349,873.00
2.hunting pressure reduced	<ul style="list-style-type: none"> illegal hunting (cultural, recreational and sports) of the southern-muriqui and small-brocket-deer inside conservation unities and its buffer zones reduced in at least 50% 	7	588,500.00
	<ul style="list-style-type: none"> Hunting pressure over target-species with occurrence in souther Bahia reduced in 30%, focusing in the areas of major relevance for their conservation 	5	668,000.00
	<ul style="list-style-type: none"> Hunting and catching pressure significantly reduced in areas of relevance for the conservation of target-species in Espírito Santo and northeastern Minas Gerais 	7	2,800,000.00
3. <i>In situ</i> and <i>ex situ</i> populations of target-taxa adequately managed to increment of its populational viability	<ul style="list-style-type: none"> Metapopulation management program for the conservation of <i>L. rosalia</i> (<i>in situ</i> and <i>ex situ</i> population) consolidated 	2	2,230,000.00
	<ul style="list-style-type: none"> sub-population management program (<i>in situ</i> and/or <i>ex situ</i>) implemented for the conservation of the black-faced-lion-tamarin, southern-muriqui, small-brocket-deer and the red-nosed-tree-rat 	9	57,300.00
	<ul style="list-style-type: none"> <i>ex-situ</i> management program for conservation designed for species with occurrence in southern Bahia 	3	35,000.00 + 509,000.00 /species
	<ul style="list-style-type: none"> management programs, including <i>ex situ</i> management, designed for primate species with occurrence in Espírito Santo and northeastern Minas Gerais, thin-spined-porcupine and manned-three-toed-sloth 	2	955,000.00



Goals	Indicators (Expected Results)	Number of Actions	Estimated Cost (US\$)*
4. Risk produced by aloctones populations with invasive potencial reduced	<ul style="list-style-type: none"> Invasive primate species (<i>C. penicillata</i>, <i>C. jacchus</i> and hibrids) eradicated from the occupation area of <i>L. rosalia</i> and <i>C. aurita</i> inside conservation unities, and <i>L. chrysomelas</i> eradicated from the Rio de Janeiro. 	4	1,050,000.00
	<ul style="list-style-type: none"> Programs for the prevention and control of alien and exotic fauna and flora species in the area of occurrence of target-species, golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer and the red-nosed-tree-rat, taking as priority conservation unities and its buffer areas started. 	3	334,000.00
	<ul style="list-style-type: none"> No new population of alien species with invasive potential established, and 20% of the existing populations eliminated in the Espírito Santo and northeastern Minas Gerais 	4	528,000.00
5. key-knowledge necessary for the conservation of taxa generated and available in order to support conservation strategies and management	<ul style="list-style-type: none"> Information about the actual area of occurrence of populations of all target species present in Rio de Janeiro and northeastern São Paulo generated and available, and monitoring of seven populations of the metapopulation of <i>L. rosalia</i> 	4	1,200,000.00
	<ul style="list-style-type: none"> Generation and disponibilization of knowledge about the actual geographic distribution and conservation status (<i>in situ</i> and <i>ex situ</i>) of the golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer, the red-nosed-tree-rat and the blackish-red-bat. 	11	2,900,000.00
	<ul style="list-style-type: none"> Necessary knowledge generated and available for use in decision-making and management strategies of target-species with occurrence in southern Bahia. 	3	1,600,000.00
6. Guidelines established in this NAP considered in the design and implementation of public policies, especially environmental licensing and also to sensitize the general public	<ul style="list-style-type: none"> 100% of the enterprises, with significant environmental impact, to be licensed in priority areas in the actual occurrence areas of target-taxa present in Rio de Janeiro and northeastern São Paulo, with means to enable the functional connectivity between fragments, conservation, monitoring and environmental restoration. 	4	205,000.00
	<ul style="list-style-type: none"> Means for the functional connections between the fragments, conservation, monitoring, or environmental restoration, established in enterprises of significant environmental impact installed in Rio de Janeiro and northeastern São Paulo - 100% for new developments in full protection conservation unities and 50% for enterprises in sustainable use conservation unities 	2	16,000.00
	<ul style="list-style-type: none"> Inhabitants of the area of occurrence of taxa cognizant of environmental law and aware of the importance of target-taxa to maintain quality of the environment in Rio de Janeiro and northeastern São Paulo 	2	2,500,000.00
	<ul style="list-style-type: none"> 100% of new or revised master plans in Rio de Janeiro and northeastern São Paulo municipalities, in the current distribution of the target-taxa, considering the actions defined in the present National Action Plan and ensuring the maintenance and Atlantic Forest reminiscent upkeep in the rural area. 	1	20,000.00
	<ul style="list-style-type: none"> 20% of rural properties in Rio de Janeiro and northeastern São Paulo, in the area of occurrence of target-taxa, environmentally adjusted to the environmental legislation (Código Florestal, CONAMA). 	1	650,000.00
	<ul style="list-style-type: none"> impacts of human actions and enterprises mitigated in the areas of occurrence of the golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer, and the red-nosed-tree-rat 	3	not significant
	<ul style="list-style-type: none"> institutions (governmental and nongovernmental), mainly those active in municipalities in the area of occurrence of target-species golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer, and the red-nosed-tree-rat, articulated for the implementation of the actions foreseen in the NAP. 	3	150,000.00



Goals	Indicators (Expected Results)	Number of Actions	Estimated Cost (US\$)*
6. Guidelines established in this NAP considered in the design and implementation of public policies, especially environmental licensing and also to sensitize the general public	<ul style="list-style-type: none"> All tourism activities inside conservation unities and its buffer areas within the area of occurrence of the golden-rumped-lion-tamarin, black-faced-lion-tamarin, southern-muriqui, small-brocket-deer, and the red-nosed-tree-rat, based in technical criteria for species protection 	3	128,000.00
	<ul style="list-style-type: none"> Public policies aimed at conservation of target-species occurring in southern Bahia implemented 	4	32,000.00
	<ul style="list-style-type: none"> Enterprises to be licensed in the Espírito Santo and northeastern Minas Gerais in areas identified as critical in the area of occurrence of target-taxa with demears for the functional connections between the fragments, conservation, monitoring, and environmental restoration. 	3	20,000.00
		Total	32,000,000.00

* Conversion with basis in 24th April 2011 US Dolar cotation.

Realization



Ministry of the Environment



Support



PROBIO II



World Bank

For further information about the NAP for the Conservation of Central Atlantic Forest Mammal access:
<http://www.icmbio.gov.br/menu/manejo-para-conservacao/planos-de-acao-para-conservacao>

