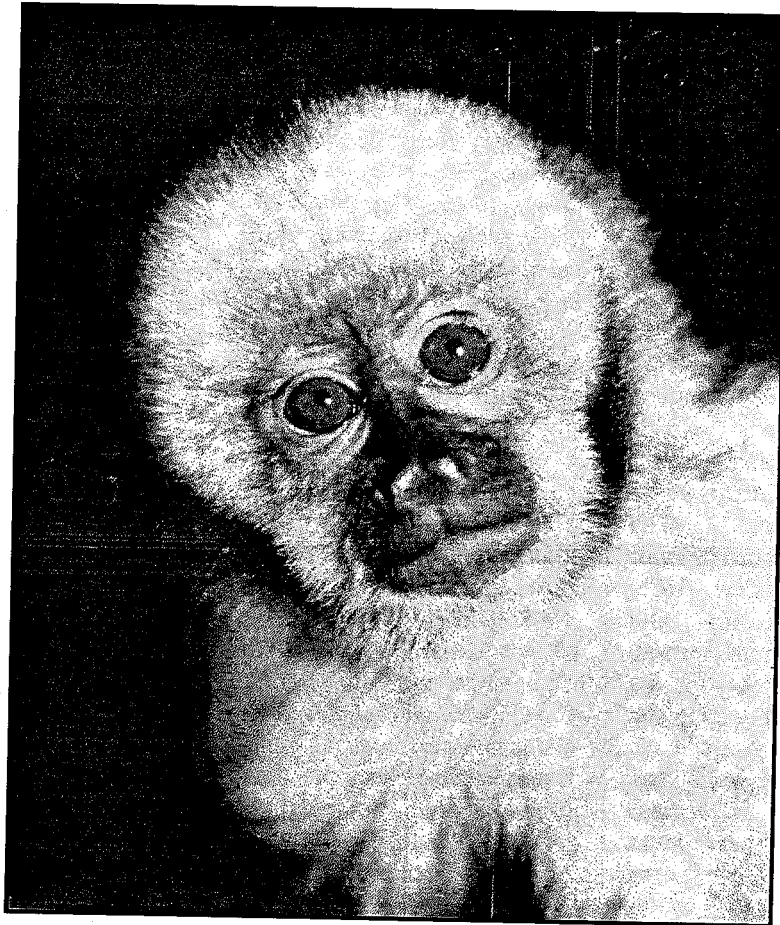


# NEOTROPICAL PRIMATES

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*A Newsletter of the Neotropical Section of the IUCN/SSC Primate Specialist Group*

*Editors: Anthony B. Rylands and Ernesto Rodríguez Luna  
PSG Chairman: Russell A. Mittermeier  
PSG Deputy Chairman: William R. Konstant*



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## Articles

### A REVISION OF THE 1990 IUCN LIST OF THREATENED ANIMALS

The IUCN Species Survival Programme, led by Simon N. Stuart, is carrying out a revision of the species and subspecies of the 1990 *Red List of Threatened Animals*, in collaboration with Brian Groombridge, Coordinator of the Animals Programme at the World Conservation Monitoring Centre, Cambridge, England. The deadline for the revision is 31 December 1993, so that it can be presented and discussed at the IUCN General Assembly in January 1994. The format and content will be improved in two stages in the next two editions. The 1993 revision, which will be published by Chapman and Hall, will provide a new format to make the book easier to use as well as visually more attractive: new contents will include country distributions along with summary tables, thematic maps, as well the lists of extinct and threatened species. The succeeding revision in 1996 will make use of the new IUCN system for assessing and categorising threatened species, which is expected to be finalised and formally approved during 1994.

The new information required for the 1993 edition includes: a revision of the list in terms of which species should be added, removed or recategorised. Any changes should be documented as fully as possible. Simon Stuart has specifically requested PSG members to contribute to the revision.

Anthony Rylands, Co-Vice Chairman for the Neotropical Section of the PSG, has drafted a preliminary revision concerning the South American primates, and Ernesto Rodríguez Luna is

currently preparing a report for the Mesoamerican region. The modifications suggested by Rylands were prepared from the available literature concerning the conservation status and taxonomy of the species and subspecies. 1) Following the studies of Skinner (1991) and Moore and Cheverud (1992), *Saguinus o. geoffroyi* should be considered a distinct species and *S. oedipus oedipus* should, therefore, be listed as a species (see p. 4). 2) Following the taxonomic revision of *Callithrix* by de Vivo (1991; see also Mittermeier *et al.*, 1992),

all forms of *Callithrix* should be listed as species. 3) Common names: *Callithrix chrysoleuca* - golden-white tassel-ear marmoset; *Callithrix intermedia* - marmoset (no common name available); *Callithrix leucippe* - golden-white bare-ear marmoset; *Brachyteles arachnoides* - muriqui; *Cacajao calvus* - bald uakari. 4) Additions to list: - *Callithrix kuhli* (V) and *Callithrix geoffroyi* (V or E) (see Mittermeier *et al.*, 1989; Coimbra-Filho, 1984; Oliver and Santos, 1991); *Callithrix nigriceps* (V) (see Ferrari and Lopes, 1992); *Aotus lemurinus griseimembra* (V or E), *Aotus brumbacki* (V or E), and *Callicebus cupreus ornatus* (V or E) (see Hernández-Camacho and Defler, 1991); *Cebus apella xanthosternos* (E), and *Cebus apella robustus* (V or E) (see Coimbra-Filho, 1986; Mittermeier *et al.*, 1989; Oliver and Santos, 1991); *Cebus kaapori* (E) (see Queiroz, 1992); *Chiropotes satanas utahicki* (E) (see Johns and Ayres, 1987); *Alouatta belzebul ululata* (I or E) (see Bonvicino *et al.*, 1989;

Coimbra-Filho, 1990). 5) Removals from the list: *Saguinus bicolor ochraceus* and *S. b. martinsi* (current listing I); *Saguinus imperator subgriseus* (current listing E) - forms which, although having quite small distributions, are in relatively isolated regions and/or occur in large protected areas; *Chiropotes albinasus* (current listing V) - a relatively large distribution. 6) Re-

#### CURRENT (1990) IUCN LIST FOR NEOTROPICAL PRIMATES

##### CALLITRICHIDAE

- Callimico goeldii* (R)
- Callithrix argentata leucippe* (V)
- Callithrix aurita* (E)
- Callithrix flaviceps* (E)
- Callithrix humeralifer chrysoleuca* (K)
- Callithrix humeralifer intermedius* (K)
- Leontopithecus caissara* (E)
- Leontopithecus chrysomelas* (E)
- Leontopithecus chrysoptygus* (E)
- Leontopithecus rosalia* (E)
- Saguinus bicolor* (3 ssp.) (E)
- Saguinus imperator* (2 ssp.) (I)
- Saguinus leucopus* (E)
- Saguinus oedipus oedipus* (E)

##### CEBIDAE

- Alouatta fusca* (2 ssp.) (V)
- Alouatta villosa* (K)
- Ateles belzebuth* (3 ssp.) (V)
- Ateles fusciceps* (2 ssp.) (V)
- Ateles geoffroyi* (9 ssp.) (V)
- Ateles paniscus* (2 ssp.) (V)
- Brachyteles arachnoides* (2 ssp.) (E)
- Cacajao calvus* (4 ssp.) (V)
- Cacajao melanocephalus* (2 ssp.) (V)
- Callicebus personatus* (4 ssp.) (E)
- Chiropotes albinasus* (V)
- Chiropotes satanas satanas* (E)
- Lagothrix flavicauda* (E)
- Lagothrix lagotricha* (4 ssp.) (V)
- Saimiri oerstedii* (2 ssp.) (E)

categorisation: *Callithrix humeralifer chrysoleuca* - as *C.chrysoleuca* from K to V; *Callithrix humeralifer intermedius* - from K to V as *C.intermedia*; *Callicebus personatus personatus* and *C.p.nigrifrons* - from E to V, with *C.p.melanochir* and *C.p.barbarabrownae* remaining as E; *Alouatta fusca fusca* - from V to E and *A.f.clamitans* remaining as V (see Oliver and Santos, 1991); *Lagothrix lagotricha lugens* - from V to E (see Hernández-Camacho and Defler, 1991).

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## A PROPOSAL FOR THE CONSERVATION OF THE MURIQUI IN THE STATE OF ESPÍRITO SANTO, SOUTHEASTERN BRAZIL

The muriqui, *Brachyteles arachnoides*, the largest of the Neotropical primates, is endemic to the Brazilian Atlantic forest, occurring from the state of Bahia south to the state of São Paulo. The majority of its populations have disappeared as a result of drastic deforestation and hunting, and it is today highly threatened with extinction. Except for the large tracts of forest along the "Serra do Mar" in the south-east of the state of São Paulo, surviving populations of miquis are restricted to small forest fragments with an uncertain future and subject to the deleterious effects of endogamy (see Mittermeier *et al.*, 1987). Recent studies have confirmed that the muriqui populations in the state of São Paulo are genetically different to those in the northern part of its range, at least in the state of Minas Gerais, where they live in more fragmented habitats, arguing for the urgent need for the

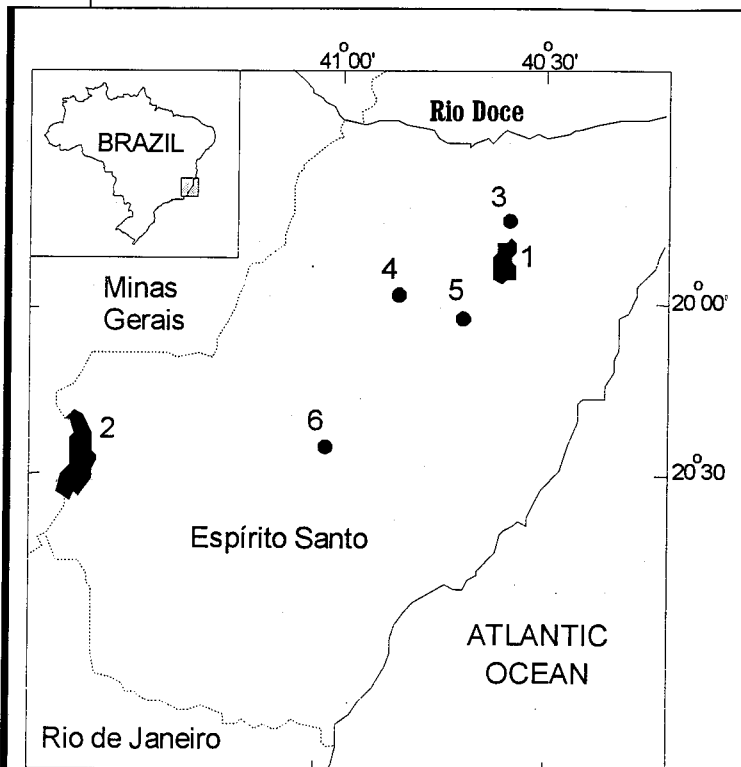
preservation of these populations as well as those in the state of Espírito Santo to the east.

In his classic work on the mureiqui, Aguirre (1971) mentioned the occurrence of isolated groups in some localities in Espírito Santo. These included a highly threatened population (40-50 individuals) at Brejetuba, municipality of Afonso Claudio, and at the Córrego São Fernando, municipality of Domingos Martins (7-8 individuals). We have been unable to confirm the continued survival of these populations. Aguirre (1971) also reported the existence of 10-12 mureiquis at Barra Encoberta, and a further 7-8 individuals at Jatibocas, both in the municipality of Itarana. Scott Lindbergh (pers.comm.) recently confirmed the continued survival of a group at the latter locality (cited in Mendes, 1991), and we have also received reliable reports of the species' presence in privately-owned forests in the municipalities of Santa Teresa, Santa Leopoldina, and Domingos Martins, the last a 400 ha forest in the Fazenda Belon, 4 km south-east of the Pedra Azul State Park (993 ha) (Mendes, 1991). Mureiquis are also known to exist in the Caparaó National Park (on the border with the state of Minas Gerais; 16,194 ha) and Augusto Ruschi Biological Reserve (formerly Nova Lombardia; c. 4,000 ha) (see Fig.1). In the latter the population density is extremely low, but the area is relatively well protected. The Caparaó National Park is larger (although not all forested), and undoubtedly a very important area for mureiquis, although its legal status has yet to be resolved, it remains largely unprotected, and suffers from hunting.

The uncertain future of the small and isolated populations in private-lands argues for a management plan involving confirmation of the size and composition of remaining groups, and their translocation to such areas as the Augusto Ruschi Biological Reserve, which could undoubtedly support higher numbers than are found at present. Valuable information could also be obtained concerning the species' morphology and genetics. This proposal would obviously involve educational campaigns so that local landowners can be made aware of the objectives and value of these measures. A program of this sort is technically difficult and evidently subject to risks. The remaining populations in the state of Bahia are practically extinct (no confirmed localities exist today), and those in Minas Gerais

are few, small, and isolated, and we argue that such measures are unavoidable and urgently needed in order to prevent the disappearance of the mureiqui in the state of Espírito Santo in the very near future, and to contribute to the preservation of this remarkable animal in the northern part of its range encompassing these three states.

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Localities in the state of Espírito Santo where populations of mureiquis have been confirmed. Protected areas: 1 - Augusto Ruschi Biological Reserve; 2 - Caparaó National Park. Privately-owned areas: 3 - Santa Teresa; 4 - Itarana; 5 - Santa Leopoldina; 6 - Fazenda Belon.

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### THE BARE-FACE TAMARINS *SAGUINUS OEDIPUS OEDIPUS* AND *SAGUINUS OEDIPUS GEOFFROYI*: SUBSPECIES OR SPECIES?

Hershkovitz (1977) divided the tamarins, genus *Saguinus*, into three sections - hairy-face (including the *S.nigricollis* group, *S.mystax* group, and the *S.midas* group), mottled-face (*S.inustus*), and bare-face (*S.bicolor* group and *S.oedipus* group). The two groups of bare face tamarins are recognized by three independent features: 1) they occur north of the Rio Amazonas; 2) they diverged independently from hairy-face tamarins and; 3) they attained a grade of facial depilation that distinguishes them collectively or individually from other callitrichids. The *Saguinus bicolor* group (comprising three subspecies north of the Rio Amazonas and east of the Rio Negro in Brazil) are believed to have evolved from a hairy-face ancestor south of the Rio Amazonas-Solimões, west of the Rio Madeira, due to a river bend cut-off isolating them to the north of the Rio Amazonas-Solimões. Following Hershkovitz (1977), the *Saguinus oedipus* group comprises the Colombian and Panamanian/Costa Rican bare-faced tamarins, *Saguinus oedipus oedipus* (cotton-top tamarin), *Saguinus oedipus geoffroyi* (the red-crested bare-face tamarin or rufous-naped tamarin), and *Saguinus leucopus* (silvery-brown bare-face tamarin). Based on his presumption that *S.oedipus* represents the "culmination of an evolutionary line of tamarins that diverged from a hairy-face ancestor of the upper Amazonian region" (p.753), Hershkovitz argued that a divergent stock must have spread north along the eastern Andes and filtered into the valley between the Cordilleras Central and Oriental, and west into Panama and Central America giving rise today to *S.leucopus* and *S.oedipus* (including subspecies *oedipus* and *geoffroyi*). *S.leucopus* is described by Hershkovitz (1977) as a hairy-cheeked quasi-bare-face species preserving most of the intermediate characters connecting *S.oedipus* with hairy-face tamarins. *S.o.geoffroyi* (Colombian Choco, Panama and bordering parts of Costa Rica) is considered to be more primitive than *S.o.oedipus* (tropical lowlands

isolated between the Ríos Atrato and Cauca-Magdalena). Hershkovitz's arguments regarding the evolution of these forms and the classification of the forms *oedipus* and *geoffroyi* as subspecies are based on pelage patterns and coloration, cranial and mandible morphology, and pinna size.

Mittermeier and Coimbra-Filho (1981; see also Mittermeier *et al.*, 1988; Rylands *et al.*, 1993) did not recognize the subspecific status of the two forms *oedipus* and *geoffroyi*, arguing that there is no evidence of intergradation between them and that "*S.oedipus* and *S.geoffroyi* are at least as differentiated from one another as are the members of the *Callithrix jacchus* group" (which they also argued to be valid species), and following the suggestion of Thorington (1976) that the cotton-top tamarin was more closely related to *S.leucopus* than to *S.geoffroyi*. Thorington (1976: p.13) expressed the hope that Hershkovitz's 1977 monograph would test his hypothesis but it did not, and the question remained open until the publication of some recent articles reporting on independent studies of body weights and the morphology of the three tamarins.

Tsunehiko Hanihara and Masahito Natori of the Jichi Medical School, Japan, followed Hershkovitz's (1977) classification in their examination of the dental morphology of *S.fuscicollis*, *S.nigricollis*, *S.labiatus*, *S.mystax*, *S.leucopus* and *S.oedipus* (Hanihara and Natori, 1987). Multivariate analysis of their measurements grouped the moustached tamarins (*S.labiatus* and *S.mystax*), the saddleback and black-mantle tamarins (*S.fuscicollis* and *S.nigricollis*), and the bare-face tamarins (*S.leucopus* and *S.oedipus*). However, their comparison of *S.o.geoffroyi* and *S.o.oedipus* showed that although they are similar, they are more different to each other than are the components of the pairs *S.fuscicollis/S.nigricollis* and *S.mystax/S.labiatus*, and for this reason they argued that they should be considered distinct species, a taxonomy adopted in their subsequent publications (Natori and Hanihara, 1988, 1992).

Carol Skinner (1991), of the Edinboro University of Pennsylvania, examined differences in body weight and morphological characters, comprising four body (tail, head and body, hind foot and ear) and 13 cranial and dental measurements. *S.geoffroyi* (486 g, N = 53) were found to be significantly larger than *S.oedipus* (406 g, N = 23), and morphologically more similar to *S.leucopus* than to *S.oedipus* in 16 of the 17 morphological

characters studied. Likewise, *S.oedipus* was more similar to *S.leucopus* than to *S.geoffroyi* in 11 of the 17 traits. Skinner also discussed the pelage coloration and patterns of the three forms (emphasizing the differences rather than the similarities demonstrated by Hershkovitz, 1977), along with aspects concerning hybridization and intergradation in *Saguinus* in general.

Allen Moore (University of Kentucky, Lexington) and James Cheverud (Washington University School of Medicine, St.Louis) also gave specific attention to the taxonomic affinity of the bare-face tamarins, examining their facial morphology (Moore and Cheverud, 1992). Quoting these authors (p.73) "...A variety of multivariate statistical analyses including discriminant function and cluster analysis suggest that *S.oedipus* and *S.geoffroyi* differ morphologically at a level consistent with species-level distinctions. The extent of differences between these taxa is large..." and later "...a comparison of collecting localities revealed that the variation we observed among *S.oedipus* and *S.geoffroyi* was not clinal but presented a large morphological discontinuity at the boundary between taxa...". Like Skinner (1991), they found that *S.leucopus* was more similar to *S.oedipus* than either is to *S.geoffroyi*. Differences between *S.oedipus* and *S.geoffroyi* were much greater than those between *S.fuscicollis* subspecies (Cheverud and Moore, 1990).

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## News

### A NEW SPECIES OF UNTUFTED CAPUCHIN FROM THE BRAZILIAN AMAZON

A new form of untufted capuchin, christened the Ka'apor capuchin, was recently described by Helder Queiroz of the Zoology Department of the Goeldi

Museum in Pará, Brazil (Queiroz, 1992). The scientific name given is *Cebus kaapori*. It was first recorded in March 1990 through the finding of a skin and skull in the Gurupiana village of the Ka'apor indians in the Alto Turiaçu Indian Reserve, east bank of the Rio Gurupí in the state of Maranhão (02°40'S, 46°20'W), given as the paratype locality (preserved in the zoological collection of the Museu Paraense Emílio Goeldi, Belém, Pará, MPEG 21978). A holotype locality was established later, in August 1991, through the collection of a juvenile female (skeleton and stuffed skin MPEG 22025) from Quadrant 7, 10 km southwest of the Chega-Tudo Prospection (02°30'S, 47°30'W) (Carutapera, Maranhão), near the right bank of the Rio Gurupí. Queiroz (1992) describes the principal features of this new species as follows: "the longest bodied untufted species of capuchin monkey, with a silvery agouti mantle and silvery grey shoulders and tip of tail. Arms and hindlimbs agouti. Hands and feet black and dark brown. Triangular black cap at crown with a black stripe down to nose. Forehead and face silvery grey and beige. Occurring south of Amazonas river, possibly restricted to the area between Gurupí and Pindaré rivers in Maranhão State, Brazil."

Subsequent expeditions to check on the distribution of the ka'apor capuchin revealed that it is today probably restricted the region between the Rios Gurupí and Pindaré, with the northeastern limit being defined by the border of the Amazonian lowland forest within the "cocais" ecosystem of middle Maranhão, extending at some points to the eastern bank of the Rio Pindaré in its middle reaches, west of the locality Santa Luzia. The northern limit lies south of Maracaçumé, in the basin of the Rio Maracaçumé, and the southern limit is defined by the northernmost forests of Buriticupú. It is not definitely known to occur west of the Rio Gurupí, although some interviews with local inhabitants 5-10 km to the west of the river suggested it might. It would seem that it certainly occurred west of the Rio Gurupí in the past, possibly as far as the Rio Amazonas, to the Rio Tocantins. In 1906, Emílio Goeldi and G.Hagmann recorded six capuchin monkey specimens in the Museu Goeldi collection from the Rios Acará and Capim, which they referred to as *Cebus capucinus*, but with a description similar to that of *Cebus kaapori*. These specimens have unfortunately been lost. Of interest too is a specimen, not recorded by Queiroz (1992) but probably belonging to this species, obtained by A.B.M.Machado (Federal University of Minas Gerais) and Pe.F.S.Pereira

(University of São Paulo) from the market in Belém, Pará, but originating from the Rio Gurupí, Maranhão (A.B.M.Machado, unpubl.data). The animal was identified by C.da Cunha Vieira, and listed by Machado (1963) as an adult female *Cebus nigrivittatus*. The skin was deposited in the Museum of Zoology of São Paulo.

Queiroz (1992) argued that the present known distribution of approximately 15,000 km<sup>2</sup> is one of the smallest known ranges of Amazonian cebids. The range of *C.kaapori* encompasses the Gurupí Biological Reserve, and the Caru and Alto Turiaçu indian reserves. It is however hunted in these reserves, which are also subject to continuing degradation due to logging, deforestation, squatters and goldminers. Certainly its known range is within one of the most devastated regions of the Amazon. In addition to these threats, the entire area is undergoing a recent and active process of colonization and industrialization being as it is within the Greater Carajás development program, and traversed by the Carajás railroad and numerous highways. Queiroz (1992) concluded that *C.kaapori* is a threatened species. The endangered black saki, *Chiropotes satanas satanas* has a similar distribution although extending north and west to the Rio Amazonas and Rio Tocantins. The widespread destruction of the forests of the region would indicate that *C.kaapori* should also be considered endangered.

The principle argument used by Queiroz (1992) for the species status of *C.kaapori* is its disjunct distribution, *C.olivaceus* being restricted to the north of the Rio Amazonas. However, as mentioned above, he also presents evidence for its (likely) occurrence in the past as far as Belém, and presumably the Rio Tocantins. Queiroz argued that speciation processes are likely to have occurred due to its isolation by the Rio Amazonas, although at least two other primate species traverse the lower Rio Amazonas without any evident speciation or subspeciation: *Cebus apella* and *Saimiri sciureus*. Other differences which Queiroz cited to reinforce his case for the species status of the ka'apor capuchin include pelage coloration, and his impression, based on the single adult measured, that *C.kaapori* is "longer-bodied and less robust than other untufted species" (p.9). Queiroz (1992) concluded that "there is little to separate the species on the basis of external and craniometric and morphological characteristics" (p.9), although his measurements of the maximum cranial length of five adult male *C.olivaceus* indicated that it is

larger than the other untufted species, including *C.kaapori*, and possibly indicative of a degree of divergence of the two forms. The evidence for the species' status of *C.kaapori* is slim. Resolution of the question of whether it is a valid species or not will depend on a taxonomic revision of the untufted group of the genus, along with a wider range of morphological measurements on additional individuals.

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## LEGAL PROTECTION FOR BRAZIL'S ATLANTIC COASTAL FOREST

The Atlantic Coastal forest once stretched uninterrupted along the eastern coast of Brazil from the north-east to the far south in the state of Rio Grande do Sul. Definitions of its limits are controversial, but the broadest include the humid evergreen forests along the coast, deciduous and semi-deciduous forests inland in the south and south-east, the *Araucaria* pine forests and upland Lauraceae forests in the south, as well as the coastal scrub forest (*restinga*), mangrove swamps and forests, and savanna and moorland enclaves. In the past, the area covered by the Atlantic forest exceeded 1,000,000 km<sup>2</sup>, more than 12% of the area of Brazil (Rizzini and Coimbra-Filho, 1988; Câmara, 1991).

In 1990, it received complete legal protection, with the publication of a short Presidential Decree N° 99.547, dated 25th September 1990. It succinctly prohibited, for an undetermined period, the cutting and exploitation of the native vegetation of the Atlantic forest, and delegated responsibility to the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama) for the rigorous fiscalization of existing projects in the

area. This Decree put the onus on each of the State Superintendencies of Ibama to define the areas of Atlantic forest in their respective states, a cause of some consternation and considerable argument. It was later revoked by Decree N° 750, dated 10 February 1993 (published in the *Diário Oficial da União* 11 February 1993), which provided a more detailed and considered legal basis for the exploitation of the natural resources of the Atlantic forest. The first article prohibits the cutting, exploitation or suppression of primary vegetation or forest in middle to advanced stages of regeneration, unless under special circumstances (development projects of public use or social interest), with the express permission of the environmental agency of the respective State, and prior approval by Ibama and the National Environment Council (CONAMA), following due studies and an environmental impact report. The second article states that selective exploitation of certain native species may be carried out under the following conditions: 1) that it in no way affects species other than those to be exploited; 2) that previous studies should be carried out concerning stocks and the guaranteed survival of the species involved; 3) the area involved and the maximum annual harvest should be defined and; 4) prior authorization from the relevant state organization. A complementary clause states that the requirements of this article do not apply to the use of plant species within the properties of traditional human populations, which however remains dependant on due authorization from the relevant state organization. The 3rd Article defines the Atlantic forest as follows: forest formations and associated ecosystems within the limits defined by the 1988 map of the Brazilian Institute for Geography and Statistics (IBGE) - Dense, mixed and open ombrophilous Atlantic forest, seasonal deciduous and semi-deciduous forest, mangroves, coastal scrub and scrub forest (*restinga*), high altitude moorland (*campos de altitude*), humid forest enclaves in the north-east (*brejos*). Article 4 determines that the suppression or exploitation of secondary vegetation in early stages of regeneration will be regulated by Ibama, with due consideration given to the respective state environment institutes and councils and the National Environment Council (CONAMA). A complementary clause says that this Article does not apply to states having 5% or less of the original area covered by Atlantic forest, and that in these cases all vegetation considered to form part of the Atlantic forest ecosystems defined in Article 3 are subject to the regulations in Article 1. Article 5



provides the restrictions regarding the provision of permission for urban projects or the use of soils in areas of secondary vegetation in medium or advanced stages of succession. Any project presented must conform to the development plan of the municipality and the existing legislation concerning environmental protection, and must have prior consent from the relevant state organization, with the conditions that: 1) the area does not include plant or animal species considered threatened with extinction; 2) the area plays no role in protecting springs or in the control of erosion and; 3) the area has no exceptional scenic value. Article 6 states that the definition of primary

vegetation, and secondary vegetation in early, middle and late stages of succession will be carried out by Ibama, in consultation with the state environmental organizations, to be subsequently approved by CONAMA. A complementary clause determines that any intervention involving primary forest or forest in late or middle successional stages is prohibited until Ibama have provided their legal definition. Article 7 provides for the total protection of vegetation which harbours animal or plant species threatened with extinction, or which acts as a corridor between primary forests or those which are considered to be in late or middle successional stages, or which serve to protect areas around conservation units, as

well as areas of permanent preservation determined by Articles 2 and 3 of Law Nº 4771 of 15 September 1965. Article 8 states that areas of primary forest or forest in middle or late successional stages will maintain their status as such even if burnt or cut illegally. Article 9 gives CONAMA the administrative responsibility for any decisions arising from the Decree, according to the terms of Article 8, part III, of Law Nº 6938 of 31 August 1981. Article 10 states that all current or future enterprises which do not conform with the determinations of the decree must inform the relevant authorities of their activities within five days. According to Article 11, fiscalization of the existing development projects within the Atlantic forest will be coordinated by Ibama in conjunction

with the relevant state authorities. Infractions will be dealt with by the National Environment System (SISNAMA) and will involve a) the application of relevant administrative sanctions; b) an immediate report to the Public Ministry for police and civic inquiries for penal action and; c) a report to the relevant council governing the professional activities of those responsible for the project and the infraction according to the specific legislation. Article 12 determines that the Ministry of the Environment will carry out measures to ensure rigorous compliance with the determinations of the Decree, and will stimulate technical and scientific studies with a view to the conservation and rational

management of the Atlantic forest and its biodiversity. The final two articles determine the immediate application of the decree as from 11 February 1993 (Article 13), and revoke the former Decree Nº 99547 of 25 September 1990.

This decree is evidently a considerable improvement on the first, providing as it does some leeway for a more rational approach to the protection of the remains of the Atlantic forest, with the underlying theme being one of biodiversity and ecosystem conservation coupled with the elusive concept of sustainable development for the region. The complexity and variety of the ecosystems included within the Atlantic forest

means that the task, still pending, of defining the concepts of primary forest systems, and the late, middle, and early successional stages (Article 6), will not be an easy one. The tendency for regional definitions depends on an adequate mapping (and ground-truthing), and is unfortunately very much subject to whim and political/economical pressures in each state. In addition, there is at present considerable controversy regarding the definition of "traditional populations" (Article 2). However, the single most dramatic issue is the almost complete lack of wherewithal on the part of the federal (Ibama) and state governments to enforce the decree, and its norms and restrictions. Widespread forest destruction continues unchecked in such important areas as southern Bahia,

#### PRIMATES OF THE ATLANTIC COASTAL FOREST

*Callithrix aurita*  
*Callithrix flaviceps*  
*Callithrix jacchus*  
*Callithrix kuhli*  
*Callithrix geoffroyi*  
*Leontopithecus rosalia*  
*Leontopithecus chrysomelas*  
*Leontopithecus chrysopygus*  
*Leontopithecus caissara*  
*Callicebus personatus personatus*  
*Callicebus personatus nigrifrons*  
*Callicebus personatus melanochir*  
*Callicebus personatus barbarabrownae*  
*Cebus apella libidinosus*  
*Cebus apella xanthosternos*  
*Cebus apella robustus*  
*Cebus apella nigrilus*  
*Alouatta fusca fusca*  
*Alouatta fusca clamitans*  
*Brachyteles arachnoides arachnoides*  
*Brachyteles arachnoides hypoxanthus*

exemplified by the removal of more than 90,000 ha of primary forests by one company alone, the Veracruz Cellulose Co., which since 1985 has been clearing areas for *Eucalyptus* plantations in the municipalities of Porto Seguro, Eunápolis, Santa Cruz de Cabrália and Belmonte.

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### PSG MEMBER RECEIVES FLORIDA AUDUBON SOCIETY AWARD

The 1993 Latin American Conservation Award of the Florida Audubon Society was presented to Ilmar Santos, member of the SSC Primate Specialist Group and Edentate Specialist Group, and an IUCN Regional Member for Brazil. Ilmar Santos, a former trainee of the Training Program of the Jersey Wildlife Preservation Trust, Jersey (in 1984), began his career working on the conservation of the Atlantic forest primates, especially the murequi, *Brachyteles arachnoides*, under the supervision of Prof. Célio Valle, also a PSG member, at the Department of Zoology, Federal University of Minas Gerais (UFMG). Since 1982 he has coordinated numerous expeditions and faunal inventories in the Atlantic forest region of the south-east, as well in the *caatinga* and *cerrado* of north-east and central Brazil. The focus was always threatened and endangered species. Notable were two expeditions in 1986-87 with William Oliver (then of the Jersey Wildlife Preservation Trust) to the Atlantic forest of Bahia and Espírito Santo, concentrating on an evaluation of the conservation status and distribution of the thin-spined porcupine, *Chaetomys subspinosus*, but including data on *Sphiggurus insidiosus*, as well as primates and sloths. The project was financed by the Jersey Wildlife Preservation Trust, Wildlife Preservation Trust International, Philadelphia, the Program for Studies in Tropical Conservation of the University of Florida, Gainesville, and the World Wildlife Fund, Washington, D.C. As a result of these expeditions, Oliver and Santos drew attention to the plight of *Cebus apella xanthosternos* and *C.a.robustus*. Through their efforts, and in collaboration with Ademar

Coimbra-Filho and Alcides Pissinatti of the Rio de Janeiro Primate Center, and Jean-Marc Lernoold of Mulhouse Zoo, France, *C.a.xanthosternos* now has a captive breeding program, and an International Committee for the management of both subspecies was created by Ibama in 1992, of which Ilmar Santos is Co-Chairman (see below). He is also a member of the International Committee for the golden-headed lion tamarin, *Leontopithecus chrysomelas*. His research has provided important contributions to our knowledge of the status and distribution of this animal, and he played a key role in the purchase of additional forests for the consolidation of the Una Biological Reserve. More recently, Ilmar has carried out pioneer work on the three-banded armadillo, *Tolypeutes tricinctus*, in the *caatinga* of inland Bahia. His research on the ecology, distribution and status of this endangered species was financed by Conservation International and World Wildlife Fund-US, and is the subject of his research thesis for a Master's degree at UFMG to be completed this year. In 1988, Ilmar formed part of the team which created the Fundação Biodiversitas, Belo Horizonte, already today a leading Brazilian non-governmental organization for the conservation of Brazilian species and their natural ecosystems. Formerly head of the Science Department, Ilmar is now Director of the Foundation. The Florida Audubon Society Award was presented to Ilmar Santos by Dr Peter Pritchard, world expert on turtles and Vice-President of the Society, at a special ceremony on the 13th April in Belo Horizonte. It is reserved for young Latin American conservationists who have shown great promise, evidenced by remarkable achievements, in their early careers. We congratulate the Society for their recognition of Ilmar's highly significant contribution to our knowledge of Brazilian mammals and their conservation.

### 1ST MEETING OF THE INTERNATIONAL COMMITTEE FOR *CEBUS APELLA XANTHOSTERNOS* AND *CEBUS APELLA ROBUSTUS*

The International Recovery and Management Committee for the yellow-breasted capuchin (*C.a.xanthosternos*) and the robust tufted capuchin (*C.a.robustus*), was created by the Brazilian Institute for the Environment and Natural Renewable Resources (Ibama) on the 16 October 1992, Edict N<sup>o</sup> 111 (see *Neotropical Primates*, 1,

Nº 1). The Co-Chairmen, Ilmar Santos (Fundação Biodiversitas) and Jean-Marc Lernoould (Mulhouse Zoo), called the first meeting of the Committee in Belo Horizonte on the 14th April 1993, which was attended by the following members: Adelmar Coimbra-Filho (Centro de Primatologia do Rio de Janeiro - CPRJ/FEEMA), Alcides Pissinatti (CPRJ/FEEMA), Russell A. Mittermeier (Conservation International, Washington, D.C.), Maria Iolita Bampi (Ibama), and Fernando Dal'Ava (Ibama). Luiz Paulo de Souza Pinto and Anthony Rylands, both of the Federal University of Minas Gerais, were invited to attend as technical consultants. Rosemary de Carvalho (Ibama) secretaried the meeting, the first part of which was dedicated to the elaboration of the committee regulations, as well as the Management Agreement and Terms of Responsibility for the institutions involved in the captive breeding program already established for *C.a.xanthosternos* (based on those for the similar committees for the lion tamarins).

At present the breeding program includes the Rio de Janeiro Primate Center (CPRJ/FEEMA) with 20 animals, and the Mulhouse Zoo, France, with five. Two individuals are also being held at the Rio de Janeiro Zoo (on loan from CPRJ). The program will be extended to include Chester Zoo, England, and Zurich Zoo, Switzerland, based on the availability of 16 animals at CPRJ, to reduce their stock to four and enable the recovery of further animals being kept as pets in southern Bahia.

Anthony Rylands presented a summary of the available data on the distribution of *C.a.xanthosternos*, and Luiz Paulo de Souza Pinto of his findings concerning its distribution and status in southern Bahia. A plan of action for *C.a.xanthosternos* was then discussed with the following priorities: *Captive program*. The establishment of an international program in Brazil and Europe, involving in the initial stages the institutions mentioned above. Alcides Pissinatti was elected studbook keeper. *Wild populations*. The establishment of a research program on *C.a.xanthosternos*, focussing on aspects of its conservation biology (population densities, habitat preference, ecology and behavior), along with an environmental education campaign aimed at local landowners, and linked with the successful program of Maria Cristina Alves (Fundação Pau Brasil, Itabuna), already underway for the golden-headed lion tamarin (*Leontopithecus chrysomelas*). It was decided that a proposal (action plan) should be drawn up and submitted to the New World

Primate Taxon Advisory Group (TAG) of the American Association of Zoological Parks and Aquariums (AAZPA) (chaired by Anne Baker, Burnet Park Zoo, Syracuse), as a first step to obtain financing. *C.a.xanthosternos* is already on the Brazilian Official List of Fauna Threatened with Extinction (Edict Nº 1522/19 December 1989), and Anthony Rylands informed that the SSC Primate Specialist Group was considering a proposal for the inclusion of this subspecies, as well as *C.a.robustus*, on the IUCN List of Threatened Animals currently under revision (see p.1). A proposal will also be submitted for the inclusion of *C.a.robustus* on the Brazilian List. Finally, Anthony Rylands and Roland Wirth (Zoological Society for the Conservation of Species and Populations, Munich) were elected as full members of the Committee.

**Ilmar B. Santos**, Fundação Biodiversitas, Rua Maria Vaz de Melo 71, Dona Clara, Belo Horizonte 31260-110, Minas Gerais, Brazil. **Jean Marc-Lernoould**, Parc Zoologique et Botanique, Ville de Mulhouse, B.P.3089, 6806 Mulhouse, France.

## A SYMPOSIUM ON LION TAMARIN CONSERVATION AND ECOLOGY

A one-day symposium on the ecology and conservation of the four lion tamarin species, organized by Devra Kleiman and Inês Castro (Golden Lion Tamarin Conservation Program of the National Zoological Park, Washington, D.C.), was held on the 18th May 1993 at the Education Center of the Poço das Antas Biological Reserve, Rio de Janeiro. The symposium consisted of a remarkable and successful marathon of 28 talks, each of 10 minutes, in the presence of a significant sample of the people currently involved in conservation and research of lion tamarins.

Ibsen de Gusmão Câmara began the symposium by presenting a review of the principal threats to the survival of the black-headed lion tamarin (*Leontopithecus caissara*). New information on the geographic distribution and wild status was presented for *L.rosalia* (golden lion tamarins - GLT) in Rio de Janeiro (Cecilia Kierulff, Ricardo J.L.Medeiros), *L.chrysomelas* (golden-headed lion tamarins - GHLT) in southern Bahia (Luiz Paulo de Souza Pinto), *L.chrysopygus* (black lion tamarins - BLT) in São Paulo (Cláudio Pádua, Laury Cullen, Ana Carolina Mamede), and the

black-headed lion tamarin (BHLT) in Paraná (Maria Lucia Lorini and Vanessa G. Persson), and São Paulo (Márcia Gonçalves Rodrigues, Paulo Martuscelli, Ricardo Ribeiro de Mendonça Jr). Reports were also given on current projects focussing on public relations and environmental education. Suzana Pádua (BLT), Maria Cristina Alves and Gabriel dos Santos (GHLT), and Lou Ann Dietz and Denise Rambaldi (GLT) summarized their respective environmental education projects centred on the Morro do Diabo State Park, the forests of southern Bahia, and the Poço das Antas Biological Reserve, respectively. Kate Bramante described an incipient but highly promising scheme to promote ecotourism, based on the GLTs reintroduced in forest patches in farms surrounding the Poço da Antas Reserve in Rio de Janeiro. Although studies have yet to be carried out which focus directly on the ecology of BHLTs, Waldir Mantovani, Márcia Rodrigues and Paulo Martuscelli were able to report on their considerable progress concerning the characterization and extent of available habitat for these animals in the state of São Paulo. Fernando de Camargo Passos summarized some of his results on the feeding ecology of BLTs in the Caetetús State Reserve, São Paulo, which formed part of a recently completed master's thesis for the State University of Campinas, supervised by Cory C.T. de Carvalho. Of note was his finding of the seasonal importance of plant exudates. Paulo Martuscelli described a remarkable association between an orchid (*Vanilla* sp.) and the black-lion tamarin, involving the consumption of the capsules by the tamarins and their probable dispersal of the seeds. Inês Castro presented her results regarding reactions of captive lion tamarins to aerial (a hawk) and terrestrial (snake) predators, involving flight in the former and mobbing in the latter.

Research projects on the wild groups of GLTs in the Poço das Antas Reserve were presented by; Elaine Ribeiro, who is completing her study on the use of hormonal analyses of faeces as a non-intrusive method to accompany physiological changes in females; Andrew Baker, who reviewed the social system in terms of group composition, breeding patterns, and dispersal and; James Dietz who discussed the data concerning seasonal variation in reproduction, juvenile weight gain and adult body weight, and its relation to seasonality and annual variation in resources. Finally, Paula Oliveira reported on her studies of succession and small mammal communities following fires in the Reserve, and Devra Kleiman presented an

overview of the current research projects of the Golden Lion Tamarin Conservation Program (National Zoological Park, Washington D.C.), including besides those mentioned above, the re-introduction program, and research on communication and locomotion. The last session reviewed the situation of, and prospects for, the captive populations of GLTs (Jon Ballou, International Studbook keeper), and GHLTs (Jeremy Mallinson, International Studbook keeper and Helga de Bois, responsible for the European populations of lion tamarins), and last of all Alcides Pissinatti reviewed veterinary aspects, particularly concerning the diagnosis of causes of mortality.

The following two days were dedicated to meetings of the International Committees for the four lion tamarin species. These committees were established by the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama) to discuss and advise on issues concerning the management of captive and wild populations, as well as research projects and any issues which directly or indirectly affect their conservation status. The working document which provides the directions and guidelines for these committees was produced during the Population Viability Workshop on *Leontopithecus*, held in Belo Horizonte in June 1990, and sponsored by the Jersey Wildlife Preservation Trust, World Wildlife Fund-US, Ibama, Fundação Biodiversitas and Conservation International. It was published by the SSC/Captive Breeding Specialist Group, chaired by Ulysses S. Seal (Seal *et al.*, 1990). The report includes specific proposals for future action concerning conservation measures for the lion tamarin species. These were reasonably complete for GLTs, GHLTs, and BLTs, but lacking sufficient data for BHLTs, which had only very recently been discovered. As a result, one of the main themes for this, the first, meeting for BHLTs was the elaboration of an action plan based on the considerable amount of data now available concerning their distribution and status in the wild. For the other species, the action plans were reviewed in terms of the progress which had been achieved since the Workshop, and the conclusion that the large majority of the recommendations had been addressed, and that quite a number had even been resolved, was the cause of some satisfaction amongst the committee members.

Credit must be given not only to Ibama for the initiative, but also to the Committee chairs: GHLT

- Jeremy Mallinson (Jersey Wildlife Preservation Trust) and Ademar Coimbra-Filho (Centro de Primatologia do Rio de Janeiro); GLT - Devra Kleiman (National Zoological Park, Washington, DC) and Ademar Coimbra-Filho; BLT - Faical Simon (Fundação Parque Zoológico de São Paulo) and Devra Kleiman; and BHLT - Ibsen de Gusmão Câmara (Fundação Brasileira para a Conservação da Natureza) and Jeremy Mallinson. There are now large captive populations of GLTs (a total of 552 animals recorded in the 1991 Studbook; Ballou, 1992) and GHLTs (472 animals recorded in the 1992 Studbook; Mace and Mallinson, 1992), and strategies were discussed to expand the captive breeding program for BLTs (72 animals recorded in the 1990 Studbook; Pádua and Simon, 1990) to a number of new institutions outside of Brazil. There is still no captive program for BHLTs, although the committee determined that the establishment of a captive population should be a priority measure.

Optimism regarding the survival of the disjunct and small populations of the four lion tamarins, each with specific and serious problems in contrasting scenarios in widely differing regions and habitats, was prevalent (and necessary) during the symposium and the committee meetings, and not unfounded considering the large number of people dedicating their work to the maintenance of the captive programs, research on the wild populations, and the resolution of the ever-worsening threats in the wild.

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## CENSO E DISTRIBUCION DEL MARIMONO, *ATELES PANISCUS*, EN LA ESTACION BIOLOGICA BENI, BOLIVIA

Durante el presente año con el apoyo económico de UNESCO, París, en la Reserva de la Biosfera "Estación Biológica Beni", Provincias Ballivián y Yacuma, Departamento Beni, Bolivia ( $66^{\circ}18'30''W$ ,  $14^{\circ}38'00''S$ ), se desarrollará el proyecto "Censo y distribución de la población del marimono (*Ateles paniscus*)". En Bolivia *A.p. chamek* ha sido poco estudiado y no ha merecido atención en ningún proyecto específico, contándose con datos de su abundancia, distribución y su estado de conservación como fruto de evaluaciones generales sobre la fauna primatológica. Estes monos son usados como comida (carne y obtención de aceite) y como mascotas por gente local. La caza las ha afectado en particular; se indica que para la zona de Cobija y probablemente para toda la región de Pando la presencia de *A.paniscus* es rara, porque aparentemente ha sido cazado hasta extinguirse en grandes regiones. Finalmente la destrucción del habitat constituye también un factor importante, sufriendo las superficies boscosas una deforestación constante a causa de asentamientos humanos mal dirigidos hacia las regiones tropicales. Desde el punto de vista de la conservación en Bolivia, *A.paniscus* está considerada como una especie amenazada, categoría bajo la cual incluyen las especies cuyas poblaciones experimentan disminución por explotación intensiva o destrucción del habitat.

El presente estudio está enmarcado dentro de las acciones prioritarias de estudios biológicos intensivos para especies en peligro de extinción y de interés económico, entre las que está especialmente considerada *A.paniscus*, a fin de formar las bases técnicas y científicas para el manejo de recursos. El estudio tiene los siguientes objetivos: 1) establecer el status (distribución y abundancia) de *A.paniscus* en la Estación Biológica Beni; 2) conocer la composición y tamaño de los grupos, relacionadas con diferencias estacionales; y 3) conocer aspectos de su comportamiento y uso vertical del espacio.

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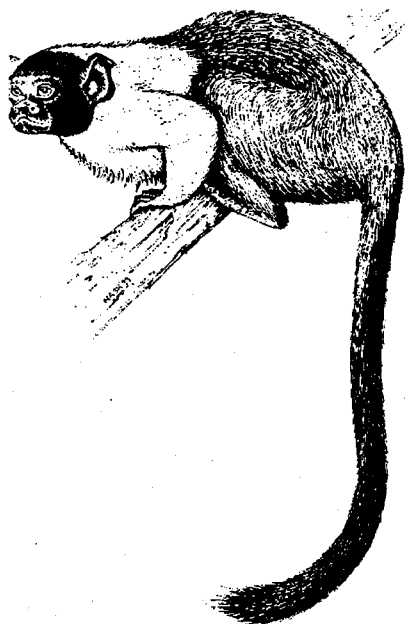
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*Editor's note:* Six species of primates occur in the Beni Ecological Station: *Ateles paniscus*, *Alouatta seniculus*, *Cebus apella*, *Saimiri boliviensis*, *Callicebus donacophilus*, and *Aotus azarae* (García and Tarifa, 1991).

Stephen Nash, 1993



## FIRST FIELD STUDY OF THE PIED TAMARIN, *SAGUINUS BICOLOR BICOLOR*

The pied tamarin is probably the most endangered of the Amazonian callitrichids, having a very restricted range centred on Manaus, the capital of the state of Amazonas. From May 1983 to April 1984, Silvia Egler of the Instituto Nacional de Pesquisas da Amazônia (INPA), carried out a field

study of a group of 6-9 individuals in a small fenced enclosure of 20 ha of secondary forest in the grounds of the Tropical Hotel, Manaus. The study was financed by INPA and the Brazilian Science Council (CNPq), and presented as a master's thesis, supervised by Dr Cory C.T. Carvalho, to the State University of Campinas (UNICAMP), São Paulo (Egler, 1986). Part of the study, concerning feeding ecology, was recently published in volume 59 (1992) of *Folia Primatologica*. Egler (1992) listed 21 plant species of 12 families used for food resources (fruits, flowers and exudates), and described their characteristics and seasonality in consumption. She also examined aspects of ranging behaviour, habitat use (range size was 12 ha), and activity cycles. At the end of the article Egler discussed the conservation status of the pied tamarin. *S. bicolor* occurs in four protected areas: the Adolfo Ducke Reserve of INPA (10,000 ha); the Alberto Egler Reserve of INPA (630 ha); the Ecological Reserve of Sauim-Castanheiras (109 ha); and a small private reserve of the Tropical Hotel. Egler referred to the problems of small genetically isolated populations, and the precarious situation of groups scattered through the suburbs and surrounding areas of Manaus. Part of her study area, originally occupied by three groups, was destroyed by the hotel owners in 1985, and in 1986 she was able to observe only two individuals remaining there. The forests around Manaus are being destroyed with the expansion of its urban limits, as well as for agriculture and cattle-ranching, and the pied tamarin, although not hunted, is undoubtedly declining rapidly in numbers. Ayres *et al.* (1980, 1982), Egler (1983) and Coimbra-Filho (1987) have also reviewed its distribution and conservation status.

Silvia Egler is continuing her studies on the pied tamarin for a doctoral thesis, also from the State University of Campinas, under the supervision of Marc G.M. van Roosmalen (Department of Botany, INPA). In this study she is examining the ecological segregation of the midas tamarin, *Saguinus midas midas* and *S. b. bicolor*, through vegetation analyses and a detailed delimitation of the geographic distribution of the two species in the vicinity of Manaus. Her findings have already indicated that the range of *S. b. bicolor* is even smaller than indicated by previous studies (Ayres *et al.*, 1980, 1982), with the Rio Cuieras being the western limit and Km 30 of the BR-174 highway one of the northern limits. The research is being financed by the National Institute for Amazon Research (INPA), the Brazilian Science Council

(CNPq), Conservation International, Washington, D.C., and Wildlife Conservation International, New York.

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## WISCONSIN REGIONAL PRIMATE RESEARCH CENTER - PRIMATE TALK

The Library of the Wisconsin Regional Primate Research Center of the University of Wisconsin at Madison has set up an electronic mail listserv called PRIMATE-TALK: an open forum for discussion in primatology and related subjects. Subjects include: news items, meetings

announcements, research issues, information requests, veterinary/husbandry topics, job notices, animal exchange information, and book reviews. People with Internet, BITNET, or UUCP addresses can communicate with PRIMATE-TALK. Users of other networks should contact the address given below. If you are interested in joining PRIMATE-TALK send a message to PRIMATE-TALK-REQUEST@PRIMATE.WISC.EDU stating that you would like to sign on. Messages to the list can be sent to PRIMATE-TALK@PRIMATE.WISC.EDU. If you have any questions concerning electronic access to the list, you can call Larry Jacobsen, Head of Library Services, Wisconsin Regional Primate Research Center (WRPRC) Library, 1220 Capitol Court, Madison, Wisconsin 53715-1299, USA. Tel: (608) 263-3512, Fax: (608) 263-4031.

## LINCOLN PARK ZOO SCOTT NEOTROPIC FUND

The Lincoln Park Zoo Scott Neotropic Fund is sponsored by the Lincoln Park Zoological Society and the Chicago Park District. It provides support for conservation projects throughout Latin America, although preference is given to new projects with 1) links to either the Lincoln Park Zoo animal collection or members of the zoo staff, 2) direct participation by graduate and/or undergraduate students, and 3) support designated for students and/or field assistants from Latin America. Projects should generate information that contributes to the conservation of Latin American Wildlife. Awards are seldom greater than US\$7,500, and most are of the order of \$5,000-\$7,000. The fund does not generally support salaries and the purchase of permanent equipment. For further information about the fund, as well as the zoo's animal collection, write to Dr. Steven D. Thompson, Director of Conservation and Science, Lincoln Park Zoological Gardens, 2200 North Cannon Drive, Chicago, Illinois 60614, USA. The deadline for receipt of proposals is 1 September 1993.

## RESEARCH FELLOWSHIPS FROM NYZS THE WILDLIFE CONSERVATION SOCIETY

Wildlife Conservation International (WCI) and its parent organization the New York Zoological Society have recently adopted the new name of

NYZS The Wildlife Conservation Society. The Society has a fellowship program which gives support to projects that specifically address the conservation needs of wildlife in endangered ecosystems. The projects must be directed towards activities that will help achieve concrete progress in the conservation of wild areas and their species.

The program does not provide funds for conference participation, air tickets, scientific meetings, university fees, legal actions, construction of permanent field stations, salaries, nor general administration costs. Very expensive laboratory analyses are not considered either. Certain proposals for research in Central America may be eligible to compete for exclusive funding from the United States Agency for International Development's Regional Office for Central American Programs (ROCAP).

For more information write to: Dr Mary Pearl, NYZS The Wildlife Conservation Society, International Programs, 185th Street and Southern Boulevard, Bronx, New York 10460-1099, USA. Tel: (718) 220-5155, Fax: (718) 364-4275, or Ing. Claudio Saito, NGO Advisor, Regional Office for Central American Programs, 2a. Avenida 9-01, Zona 10, Guatemala, Guatemala 01010. Tel: 502-2-313515, 502-2-318973, Fax: 502-2-320495.

### A LIST OF GRANT SOURCES FOR RESEARCH ON MAMMALS

A listing of agencies and foundations that grant funding for research on mammals was announced in the *Journal of Mammalogy* (1992, 73(1):242) of the American Society of Mammalogists. The list comprises a variety of sources for established researchers as well as students and recent graduates. To obtain a copy, send an IBM-compatible, formatted disk (3.5 in. or 5.25 in.), as well as a self-addressed, stamped envelope to: Nancy D. Moncreif, ASM Education and Graduate Students Committee, Virginia Museum of Natural History, 1001 Douglas Avenue, Martinsville, VA 24112, USA.

### WWF APÓIA TESES EM BIOLOGIA DA CONSERVAÇÃO

O Fundo Mundial para a Natureza (WWF) está recebendo planos de teses de pos-graduação

(mestrado e doutorado) com enfoque em Biologia da Conservação, para apoio financeiro. Este apoio inclui viagens ao campo, aquisição de pequenos itens de equipamento e despesas em geral que viabilizam a execução do plano de trabalho. Não é uma bolsa de manutenção pessoal. O valor pode variar de US\$3,000 a US\$8,000 por tese, para o período necessário ao trabalho de campo. Propostas só serão consideradas se indicarem resultados práticos para aplicação em conservação da natureza.

O WWF dará prioridade aos planos de teses que possam contribuir para as suas áreas prioritárias dos chamados Projetos Integrados de Conservação e Desenvolvimento (PICD). Atualmente são cinco, esses PICDs que constituem prioridades geográficas do WWF: 1) Reserva Biológica de Una, na Mata Atlântica do sul da Bahia; 2) Parque Nacional do Jaú, rio Negro, Amazonas; 3) Estação Ecológica do Lago Mamirauá, várzea dos rios Solimões e Japurá, Amazonas; 4) cerrado (a ser designado) e; 5) região de Iguazu e Misiones, fronteira Brasil-Argentina. Além dessas áreas prioritárias, há ainda as seguintes Reservas Extrativistas: Rio Cajari, Amapá; Alto Juruá, Acre; e reservas extrativistas estaduais em Rondônia.

Serão consideradas também propostas que possam contribuir para mapear áreas importantes em biodiversidade no cerrado, e na Amazônia como regiões prioritárias para serem protegidas, e estudos de dinâmica de fragmentos na mata Atlântica. Outro tema importante é o tamanho e forma de áreas a serem protegidas. Será finalmente considerada a capacidade institucional da universidade onde o aluno de pos-graduação está matriculado, principalmente quanto à orientação acadêmico-científica e da estrutura mínima para concluir o trabalho.

Prazos: Recebimento da proposta - 1) entre 01 de julho e 30 de setembro para julgamento até 31 de outubro; 2) entre 01 de outubro e 31 de dezembro para julgamento até 31 de janeiro; 3) entre 01 de janeiro e 31 de março para julgamento até 30 de abril; 4) entre 01 de abril e 30 de junho para julgamento até 31 de julho.

Para maiores informações: Dr Cleber J.R. Alho, WWF-Fundo Mundial para a Natureza; SHIS EQ QL 06/08, Conjunto E, 2º andar, Brasília - DF 76120-430, Tel: (061) 248-2899, Fax: (061) 248-7176.



**EDENTATE SPECIALIST GROUP  
NEWSLETTER - APPEAL FOR  
CONTRIBUTIONS**

The Chairman of the SSC Edentate Specialist Group, Gustavo A.B. da Fonseca, Federal University of Minas Gerais and Brazil Program Director of Conservation International, will be editing a newsletter, in collaboration with Ilmar B. Santos, Director of the Fundação Biodiversitas, Belo Horizonte, Minas Gerais, Brazil. The Newsletter will report on current projects concerning the status, distributions, behaviour, ecology and captive breeding of armadillos, anteaters and sloths, as well as palaeontological research on the Quaternary and Tertiary xenarthrans, along with the activities of the Group, and of IUCN and SSC in general. Please will all those involved in research or captive breeding of these animals, and especially the Edentate Specialist Group members, consider this Newsletter as a forum for the exchange of ideas and opinions and to report on projects, research groups, events, recent publications, activities of NGOs etc. Please send texts either in the form of manuscripts (double-spaced) or in diskettes for PC compatible text-editors (MS-Word, Wordperfect, Wordstar) to: Gustavo A.B. da Fonseca, Departamento de Zoologia, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, 31270-901 Belo Horizonte, Brazil, Fax: (031) 441-1412, or c/o Conservation International, Rua Bueno Brandão 393, Belo Horizonte 31010-060, Minas Gerais, Brazil, Fax: (031) 222-8429, or Ilmar B. Santos, Fundação Biodiversitas, Caixa Postal 2462, Rua Maria Vaz de Melo 71, Dona Clara, 31250 Belo Horizonte, Minas Gerais, Brazil, Fax: (031) 441-7037.

**INTERNATIONAL EXCHANGE PROGRAM  
FOR FISH AND WILDLIFE MANAGERS**

An International Exchange Program for Fish and Wildlife Managers was established in 1990 at the Massachusetts Cooperative Fish and Wildlife Research Unit for the purposes of providing fish and wildlife professionals and educators from Latin America with practical management-oriented training. Participants are given opportunities to develop new knowledge and technical skills by working in the field, laboratory, and academic setting with biologists and managers. In addition,

the Exchange Program is intended to increase awareness of shared fish and wildlife concerns in the western hemisphere among students, staff and cooperators affiliated with the Unit. The program includes only established professionals, and is funded by the Office of International Affairs, U.S. Fish and Wildlife Service, and the Unit.

The cooperators for the 1992 program were as follows: *United States* - U.S. Fish and Wildlife Service (Massachusetts Cooperative Fish and Wildlife Research Unit, Office of International Affairs, Northeast Regional Office), University of Massachusetts, Massachusetts Division of Fisheries and Wildlife, and the Hitchcock Center for the Environment, Inc.; *Latin America* - Universidad Nacional de Costa Rica (Programa Regional de Vida Silvestre para Mesoamerica y el Caribe), Universidade Federal de Minas Gerais (Departamento de Zoologia), Brazil, and the Universidad Nacional Experimental de los Llanos Occidentales (Secretario Ejecutivo de Postgrado), Venezuela. The three Latin American wildlife biologists who participated in the 1992 program were: *Magaly M. Ojeda C.*, a wildlife ecologist working with PROFAUNA, an agency of the Environmental and Natural Resources Ministry of Venezuela (MARNR), President of the Venezuelan Association for the Study of Mammals, and currently developing a new graduate program in Aquatic and Wildlife Management and Conservation at the Universidad Simon Bolivar; *Claudia M.R. Costa*, who is working at the Conservation Data Center of the Fundação Biodiversitas, Belo Horizonte, Brazil, specifically on the development of computerized mapping programs (Geographic Information Systems - GIS) for setting priorities for land use and conservation; and *Eduardo Carrillo J.*, an Associate Professor in the Regional Wildlife Management Program for Central America and the Caribbean, Universidad Nacional, Heredia, Costa Rica.

Two new cooperators joined the Program in 1993: Enrique H. Bucher, Centro de Zoología Aplicada, Cassilla do Correo 122, 5000 Cordoba, Argentina; and Magaly M. Ojeda C., Aquatic and Wildlife Management and Conservation, Universidad Simon Bolivar, Caracas, Venezuela. Both cooperators are establishing master's programs in wildlife management. The exchanges for 1993 will take place in the early Autumn, with the selection date being August 1.

For further information: Dr Rebecca Field,

Program Director, Massachusetts Cooperative Fish and Wildlife Research Unit, 204 Holdsworth Natural Resources Center, University of Massachusetts, Amherst, MA 01003, USA.

## Primate Societies

### SOCIEDADE BRASILEIRA DE PRIMATOLOGIA

A Sociedade Brasileira de Primatologia (SBPr) está organizando o VI Congresso Brasileiro de Primatologia, previsto para meados de 1994, como parte das atividades da XX Congresso Brasileiro de Zoologia na Universidade Federal do Rio de Janeiro. Favor enviar sugestões de temas, simpósios, mini-cursos e outras atividades, para Aline P. da Rin Azevedo, Secretária Geral da SBPr, Departamento de Zoologia, Museu Paraense Emílio Goeldi, Caixa Postal 399, 66.040-970 Belém, Pará, Brasil.

No seu Boletim de fevereiro de 1993, o SBPr informou que o livro *A Primatologia no Brasil-4*, os anais do V Congresso da SBPr em Salvador, Bahia, já está pronto e, de acordo com as editoras Maria Emília Yamamoto e Maria Bernadete de Sousa (Núcleo de Primatologia da Universidade Federal do Rio Grande do Norte, Natal) deverá ser publicado nos próximos meses.

## Recent Publications

*Protected Areas of the World: A Review of National Systems. Volume 4: Nearctic and Neotropical*, 1992, compiled by the World Conservation Monitoring Centre and IUCN, in cooperation with British Petroleum, c.400pp., maps. Price US\$50.00. Part of a four volume world-wide survey, organized into national accounts, each comprising a description of the national protected areas system, accompanied by a summary list and map of protected areas. The remaining volumes deal with the Indomalaya, Oceania, Australia and Antarctica (Volume 1); Palearctic (Volume 2); and Afrotropical (Volume 3) regions. Available from: IUCN Publications Services Unit, 181a Huntingdon Road, Cambridge

CB3 0DJ, UK, Tel: (0223) 277894, Fax: (0223) 277175, or Island Press, Box 7, Covelo, California 95428, USA, Tel: (800) 828-1302 (toll free in the US), (707) 983-6432 (outside the US), Fax: (707) 983-6414.

*Project on the Reproduction and Conservation of Nonhuman Primates, Iquitos, Peru - Annual Report 1991*, 110pp., and *Project on the Reproduction and Conservation of Nonhuman Primates, Iquitos, Peru - Semiannual Report, January-June 1992*, 110pp., by J.Moro, F.Encarnación, L.Moya, E.Montoya and H.Samamé, Pan American Health Organization Veterinary Public Health Program, Iquitos, 27pp. (Text in English or Spanish). Available from: Center for Reproduction and Conservation of Nonhuman Primates, Peruvian Primatological Project, Veterinary Institute of Tropical and High Altitude Research (IVITA), Universidad Nacional Mayor de San Marcos, P.O.Box 621, Iquitos, Peru.

*Primates of the Americas: Strategies for Conservation and Sustained Use in Biomedical Research*, 1993, edited by Primo V.Arámbulo III, Filomeno Encarnación, Jaime Estupiñán, Hugo Samamé, Charles R. Watson, and Richard E. Weller, 336pp., Battelle Press, Columbus, Ohio. Price US\$34.95 + shipping (USA - \$3.50 first book; 75c each additional copy; outside USA - \$3.50 surface; \$8.50 air). All chapters in Spanish and English. Proceedings of the First Ordinary Meeting of the Regional Primatology Committee for the Americas (Comite Regional de Primatologia para las Américas - CORP-I), convened by the Director of the Pan American Health Organization from October 29th to 31st, 1990. Over 50 government representatives and scientists from 15 countries met in the Batelle Conference Center, Seattle, Washington, USA, to discuss the status of Neotropical primates and formulate plans for their preservation. Includes a full report of the meeting, and 17 chapters including: a review of Neotropical primate conservation (R.A.Mittermeier *et al.*); the status of natural populations and benefits of sustained cropping (L.Moya *et al.*); environmental factors affecting reproduction in special habitats (T.Woffle); nonhuman primate conservation and public health (R.A.Whitney Jr.); PAHO/WHO technical cooperation in the conservation and use of nonhuman primates in the Americas

(P.Arámulo III and A.Ruiz); integrated development of conservation units and the role of national primatology programs (J.V.Rodríguez); international collaboration for the development of primatology programs (M.U.Castillo); wildlife management in Brazil (J.Wallauer P.); managing nonhuman primates as renewable resources (T.Panayotou and P.Arámulo III); mobilization of resources for conservation of Neotropical ecosystems and debt-for-nature swaps (E.Liebow); community participation in the Protection of the Natural Habitat of the Neotropical and Natural Resource Policy in Bolivia (H.Zaballos H.); and a proposal for a regional action plan in primatology for the Americas (F.Encarnación and H.Samamé). It also includes the proposed constitution and regulations of CORP. Available from: Batelle Press, 505 King Avenue, Columbus, Ohio 43201-2693, USA.

*A Belizean Rain Forest - The Community Baboon Sanctuary*, by R.Horwich and J.Lyon, 420pp, illustrated. Price US\$14.00 postpaid. Available from: R.Horwich, Director, Howlers Forever Inc., RD1, Box 96, Gays Mills, WI 54631, USA. Tel: (608) 735-4717.

*Field Studies of New World Monkeys La Macarena Colombia*, Vol.7, 1992, Monbusho International Scientific Research Program (No.02041009) Reports, Japan Colombia Cooperative Study of Primates. 53pp. Includes the following articles: Nishimura, A., Wilches A.V. and Estrada, C. Mating behaviors of woolly monkeys, *Lagothrix lagotricha*, at La Macarena, Colombia (III): reproductive parameters viewed from a longterm study; Izawa, K. Social changes within a group of wild black-capped capuchins (*Cebus apella*).III; Izawa, K. and H.Lozano M. Social changes within a group of red howler monkeys (*Alouatta seniculus*). IV; Koshin, K. Demographic approach to the social group of wild red howler monkeys (*Alouatta seniculus*); Kobayashi, M. and Izawa, K. Early stage of rhizome development in *Pharus virescens* (Poaceae: Bambusoideae) located in La Macarena, Colombia; Yoshihiko, H. and Barbosa, C. Architecture of the hill-crest type forest in the upper Colombian Amazon. Contact: Kosei Izawa, Miyagi University of Education, Aoba, Sendai, 980 Japan.

*Primate Behaviour: Information, Social Knowledge, and the Evolution of Culture*,

by Duane Quiatt and Vernon Reynolds, Cambridge University Press, Cambridge, 1993, 275pp. Hdbk US\$74.95. *Cambridge Studies in Biological Anthropology*. Explores the social life of monkeys, apes, and humans, paying close attention to the importance of social information and understanding of primate social behaviour and organization. Available from: Cambridge University Press, 40 West 20th Street, New York, NY 10011-4211, USA.

*Measuring Behaviour: An Introductory Guide*, by Paul Martin and Patrick Bateson, 2nd Edition, Cambridge University Press, Cambridge, 1993, 232pp. Pbk US\$16.95. Available from: Cambridge University Press, 40 West 20th Street, New York, NY 10011-4211, USA.

*Welfare Guidelines for the Re-introduction of Captive Bred Mammals to the Wild*, prepared by the International Academy of Animal Welfare Sciences, UFAW, 1992, 10pp. Price US\$6.00. Available from: Universities Federation for Animal Welfare, 8 Hamilton Close, South Mimms, Potters Bar, Herts EN6 3QD, UK.

*Primate Social Conflict*, edited by William A.Mason and Sally P.Mendoza, State University of New York Press, New York, 1993, 419pp. Pbk US\$19.95 + US\$3.00 postage. This book examines conflict as a normal and recurrent feature of primate social life, important in the basic processes contributing to social order. The authors go beyond the usual view which tends to equate social conflict with fights over food or mates or for social supremacy, and analyse the diverse manifestations and significance of conflict in a number of case studies. Available from: State University of New York Press, c/o CUP Services, P.O.Box 6525, Ithaca, NY 14851, USA.

*Evaluation and Assessment for Conservation*, by I.F.Spellerberg, Chapman and Hall, London, 1992, 280pp. Price Hdbk. £29.95. The assessment of how and why species and communities are threatened, crucial to rational decision-making about the implementation of management plans for their conservation. A revision of the author's previous work *Ecological Evaluations for Conservation*. Available from: Direct Response Supervisor, Chapman and Hall Ltd., Cheriton House, North Way, Andover, Hants SP10 5BE, England, Fax: 0264 364418.

*Tropical Deforestation and Species Extinction*, edited by T.C. Whitmore and J.A. Sayer, Chapman and Hall, London, 1992, 208pp. Price Pbk £14.95. Available from: Direct Response Supervisor, Chapman and Hall Ltd., Cheriton House, North Way, Andover, Hants SP10 5BE, England, Fax: 0264 364418.

*Informe del Taller Internacional sobre Políticas de Turismo en Parques Nacionales y otras Areas Protegidas*, Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO), Programa de las Naciones Unidas para el Medio Ambiente (UNEP), Red Latinoamericana de Cooperación Técnica en Parques Nacionales, otras Areas Protegidas, Flora y Fauna Silvestres, Santiago, Chile, 1992, 66pp. Proceedings of a workshop held in Puerto La Cruz, Venezuela, 21-25 September 1992. Available from: Kyran D. Thelen, Oficial Regional Forestal, Oficina Regional de la FAO para America y el Caribe, Avda. Santa Maria 6700, Casilla 10095, Santiago, Chile. Tel: (562) 218 53 23, Fax: (562) 218 25 47.

*Manejo de Areas Protegidas Fronterizas en América Latina*, Documento Técnico No.10, Proyecto FAO/PNUMA sobre Manejo de Areas Silvestres, Areas Protegidas y Vida Silvestre en América Latina y el Caribe. Red Latinoamericana de Cooperación Técnica en Parques Nacionales, otras Areas Protegidas, Flora y Fauna Silvestres. Oficina Regional de la FAO para América Latina y el Caribe. B. Marchetti, J. Oltremari y H. Peters, 1992, 120pp. El documento comprende un diagnóstico, el que está referido a los recursos naturales y sistemas de clasificación de las áreas silvestres protegidas fronterizas, asentamientos humanos y actividades productivas, actividades turísticas, investigación, educación ambiental, capacitación, planificación y aspectos legales. También se incluyen los siete estudios de casos que fueron presentados por los participantes al Taller Internacional sobre Manejo de Areas Silvestres Protegidas Fronterizas, que organizó la Oficina Regional de la FAO en Panamá. Dichos casos involucraron a 12 áreas protegidas y a 10 países, según el detalle que se indica: Parque Nacional Trifinio (El Salvador, Guatemala, Honduras); Parque Nacional La Amistad (Costa Rica, Panamá); Parque Nacional Los Katios, Darién (Colombia, Panamá); Parque Nacional do Pico da Neblina, La Neblina (Brasil, Venezuela), Parque Nacional El Tama (Colombia, Venezuela); Parque

Nacional do Iguacu, Iguazu (Brasil, Argentina); y Parque Nacional Nahuel Huapi, Vicente Pérez Rosales-Puyehue (Argentina, Chile). Available from: Kyran D. Thelen, Oficial Regional Forestal, Oficina Regional de la FAO para América y el Caribe, Avda. Santa Maria 6700, Casilla 10095, Santiago, Chile. Tel: (562) 218 53 23, Fax: (562) 218 25 47.

*Areas Protegidas de la Cuenca del Amazonas*, Martha Rojas y Carlos Castaño, 1990, 213pp. Red Latinoamericana de Cooperación Técnica en Parques Nacionales, otras Areas Protegidas, Flora y Fauna Silvestres, Comisión Especial del Medio Ambiente del Tratado de Cooperación Amazónica, Instituto Nacional de los Recursos Naturales Renovables y del Ambiente, Colombia. El documento pretende reunir información hasta ahora dispersa sobre el estado de áreas protegidas y, cuando posible, analizarla dentro del contexto regional natural y de política. Gran parte de la información proviene del Taller Internacional sobre Areas Protegidas en la Cuenca del Amazonas, celebrado en Leticia, Colombia, entre el 12 y el 18 de junio de 1989. Esta información fue complementada y actualizada mediante la consulta de fuentes diversas y tuvo en cuenta los documentos presentados en otras reuniones técnicas, como la de la Comisión Especial del Medio Ambiente Amazónico (Tratado de Cooperación Amazónica). Available from: Kyran D. Thelen, Oficial Regional Forestal, Oficina Regional de la FAO para América y el Caribe, Avda. Santa Maria 6700, Casilla 10095, Santiago, Chile. Tel: (562) 218 53 23, Fax: (562) 218 25 47.

*Catálogo y resúmenes de literatura no publicada sobre Conservación y Manejo de Vida Silvestre en América Latina*, Centro de Documentación BIODOC, Programa Regional en Manejo de Vida Silvestre (PRMVS), Universidad Nacional, Heredia, Costa Rica, 234pp. El PRMVS divulga los resultados tanto de sus investigadores como de otros colegas en Latinoamérica a través de su Centro de Documentación en Vida Silvestre (BIODOC), el cual fue inaugurado en febrero de 1988. El catálogo incluye material bibliográfico no publicado o cuyo tiraje ha sido muy reducido, tal como el caso de tesis, reportes, proyectos y investigaciones. Contiene dos índices que facilitan mucho la búsqueda de información. Uno de ellos es de especies y materias compuesto por 727 palabras claves; de ellas, 136 se refieren a especies

de fauna. El otro índice es de países, comprendiendo 35 referencias relativas a países de los cinco continentes. En total, el catálogo comprende 600 títulos, parte importante de los cuales incluye un resumen del trabajo, que como ya se indicó, son de diversa índole. Para más información: Dr Víctor Cartin Leiva, Director, Programa Regional de Vida Silvestre para Mesoamérica y el Caribe, Universidad Nacional, Campus Omar Dengo, Apartado 1350, 3000 Heredia, Costa Rica, Tel: 37-7039, Fax: 37-7036.

*Agenda 21: Working Toward a Global Partnership*, N.A. Robinson (ed.), 1992, published under the auspices of IUCN - The World Conservation Union by Oceana Publications Inc., New York. IUCN Environmental Policy Paper No.27, 700+pp. Price US\$30.00 + US\$4.00 shipping and handling. The Agenda 21 Document is an international framework for a global partnership concluded in Rio de Janeiro in June 1992 during the Earth Summit, for forging future agreements and understandings that affect the environment, development and resources of our Earth. Also a six-volume clothbound *Agenda 21 and UNCED Proceedings Series* covering the Road to Rio and Beyond, including PrepComs I-IV, the Declaration of Rio, Forestry Principles, Sustainable Development, Biodiversity, Agenda 21, and "Non-papers", and the Fall 1992 General Assembly Debates. Available from: Oceana Publications, Inc., 75 Main Street, Dobbs Ferry, New York 10522, USA, Tel: 914-693-8100, Fax: 914-693-0402.

*The World Environment 1972-1992: Two Decades of Challenge*, M.K.Tolba, O.A.El-Kholy, M.W.Holdgate, D.F.McMichael, R.E.Munn and E.El-Hinnawi (eds.), 1992, Chapman and Hall, London, 896pp. Price Hdbk. £65, Pbk. £24.95. A point of reference for those concerned with environmental issues, the book proposes and discusses national and international responses to environmental problems, including such topics as air pollution, ozone depletion, climate change, availability of fresh water, coastal, marine and land degradation, deforestation, loss of habitat and biodiversity, toxic chemical and waste, agriculture, fisheries, industry, energy, transport and tourism. Available from: Direct Response Supervisor, Chapman and Hall Ltd., Cheriton House, North Way, Andover, Hants SP10 5BE, England, Fax: 0264 364418.

*Global Biodiversity: Status of the Earth's Living Resources*, edited by the World Conservation Monitoring Centre, Cambridge, U.K., 1992, Chapman and Hall, London, 614pp. Price Hdbk. £29.95. Published in collaboration with the Natural History Museum, London, and in consultation with the World Resources Institute, Washington, D.C. A comprehensive compendium of conservation information and the first systematic report on the status, distribution, management and use of the planet's biological wealth. Standardised and comparable data for 205 countries. Available from: Direct Response Supervisor, Chapman and Hall Ltd., Cheriton House, North Way, Andover, Hants SP10 5BE, England, Fax: 0264 364418.

*Saving Our Planet: Challenges and Hopes*, edited by M.K.Tolba (UNEP, Kenya), 1992, Chapman and Hall, London, 304pp. Price Pbk. £17.95. Analyses the changes in the environment and interactions between the environment and development activities over the past two decades, based on a review of the scientific literature and UNEP reports. Available from: Direct Response Supervisor, Chapman and Hall Ltd., Cheriton House, North Way, Andover, Hants SP10 5BE, England, Fax: 0264 364418.

#### SOME RECENT STUDBOOKS

*1990 International Studbook for Black Lion Tamarin* *Leontopithecus chrysopygus*, by Faíçal Simon and Cláudio Pádua, 1991, 24pp. Available from: Faíçal Simon, Fundação Parque Zoológico de São Paulo, Caixa Postal 12954, 04092 São Paulo, São Paulo, Brazil.

*International Studbook for the Pygmy Marmoset* *Cebuella pygmaea*. *2nd Edition and Addendum*, compiled by K.B.M.Albers on behalf of W.B.Mager, June 1990 and December 1991, 151pp. Available from: Appenheul Zoo, J.C.Wilsaan 21-31, 71313 HK Apeldoorn, The Netherlands.

*1991 International Studbook - Black Howler Monkey* *Alouatta caraya*, by Barbara Baker, Pittsburgh Zoo, 1992, 66pp. Available from: Dr Barbara Baker, Director, Pittsburgh Zoo, P.O.Box 5250, Pittsburgh, Pennsylvania, PA 15206, USA.

*N.A. Regional Cotton-top tamarin Studbook*, by G.D.Aquilina, 1992, 98pp. Available from: G.D.Aquilina, Buffalo Zoological Park, Delaware Park, Buffalo, NY 14214, USA.

*Callimico goeldii: 1992 International Studbook*, by M.Warneke, 1992, 148pp. Chicago Zoological Society, Chicago. Available from: Mark Warneke, Chicago Zoological Society, Brookfield, Illinois 60513. Tel. (708) 485-0263.

*1991 International Studbook Golden Lion Tamarin* *Leontopithecus rosalia*, by Jonathan D.Ballou, December 29, 1992, National Zoological Park, Washington, D.C. Available from: Jonathan D.Ballou, National Zoological Park, Washington, D.C. 20008, USA.

*International Studbook - Golden-headed lion tamarin* *Leontopithecus chrysomelas*, *Number 5, 1992*, compiled by G.M.Mace, 1992, 44pp. Available from: Jeremy J.C.Mallinson, Zoological Director, Jersey Wildlife Preservation Trust, Les Augrès Manor, Trinity, Jersey JE3 5BF, Channel Islands.

*North American Regional Woolly Monkey* *Lagothrix lagotricha Studbook - 1993*, by Mary Jo Stearns, Fossil Rim Wildlife Center, 1993, 72pp. Available from: Fossil Rim Wildlife Center, P.O.Drawer 329, Glen Ross, TX 76043, USA.

## Meetings

### 1993

**16TH MEETING OF THE AMERICAN SOCIETY OF PRIMATOLOGISTS**, 18-22 August 1993, New England Regional Primate Research Center, Sturbridge, Massachusetts. Contact: Andrew J. Petto, New England Regional Primate Research Center, Division of Behavioural Biology, P.O.Box 9102, Southborough, Massachusetts 01772-9102, USA.

**III SIMPOSIO INTERNACIONAL DE TURISMO, ECOLOGIA Y MUNICIPIO**, 30 de agosto-4 de septiembre de 1993, Mazatlan, México. Objetivo: Ofrecer a los participantes un foro internacional con expertos del más alto nivel, orientado al conocimiento, actualización e intercambio de ideas

acerca de los desafíos del desarrollo del turismo, reconociendo como ejes fundamentales las características, limitaciones y el potencial del medio ambiente natural y la labor trascendental de los municipios en coordinación con los empresarios. Informaciones: Centro de Estudios Superiores en Turismo, Schiller 138, 7o. Piso, Col.Chapultepec Morales, C.P.11597, México, D.F. Tel: 250 79 34 y 545 44 74, Fax: 250 79 34.

**XXIII INTERNATIONAL ETHOLOGICAL CONFERENCE**, 1-9 September 1993, Torremolinos, Spain. Contact: Secretaria de Congressos Cordoba, C/Cano 3, 1-1, 14001 Cordoba, Spain. Tel:(9)57-480478, Fax:(9)57-479651, or Ana Omedes, General Secretary, Apartado 98033, Barcelona 08080, Spain.

**CAPTIVE BREEDING SPECIALIST GROUP - ANNUAL MEETING 1993**, 2-4 September 1993, Antwerp Zoo, Antwerp, Belgium. Contact: Ulysses S.Seal, Chairman SSC/CBSG, 12101 Johnny Cake Ridge Road, Apple Valley, MN 55124, USA.

**ANNUAL CONFERENCE OF THE INTERNATIONAL UNION OF DIRECTORS OF ZOOLOGICAL GARDENS - IUDZG**, 5-9 September 1993, Antwerp Zoo. Contact: Fred J.Daman, Director, Royal Zoological Society of Antwerp, Koningin Astridplein 26, B-2018 Antwerpen, Belgium.

**FIRST INTERNATIONAL SYMPOSIUM ON CHEMISTRY OF THE AMAZON**, 19-23 September 1993, Convention Center, Manaus Tropical Hotel, Amazonas, Brazil. Supported by the Associação Brasileira de Química, American Chemical Society, Centro de Tecnologia Mineral (CETEM), and the Instituto Nacional de Pesquisas da Amazônia (INPA). Principal themes: geochemistry, hydrochemistry, environmental chemistry, and chemistry of natural products. Contact: Associação Brasileira de Química, Rua Alcindo Guanabara 24, 16o. Andar, 20031-130 Rio de Janeiro, Brazil. Tel: 55 21 262-1837, Fax: 55 21 262-6044.

**V CONGRESSO NORDESTINO DE ECOLOGIA**, 8-12 October 1993, Federal University of Rio Grande do Norte, Natal, Brazil. Includes workshops and roundtables on such themes as: Evaluation of Rio 92, the Earth Summit; the Northeastern section of the Atlantic Forest Biosphere Reserve; and Technological Alternatives for the Semi-arid Ecosystems of the Northeast. Contact: Ricardo Braga, President, Sociedade Nordestina de

Ecologia, Caixa Postal 7807, Recife 50732-970, Pernambuco, Brazil, Fax: (081) 227-2487.

**EVOLUTION OF THE BRAIN AND COGNITION IN PRIMATES**, Primate Society of Great Britain - Winter Meeting, December 1993, Zoological Society of London, London. Organised by Robin Dunbar and Robert Barton. Contact: Robert Barton, Department of Anthropology, University of Durham, 43 Old Evet, Durham DH1 3HN, England.

## 1994

**67TH MEETING OF THE SPECIES SURVIVAL COMMISSION**, 15-17 January 1994, Buenos Aires, Argentina. Organizers: World Conservation Union (IUCN). Contact: Coordinadora logística de la Asamblea General, IUCN, Rue Mauverney 28, CH-1196 Gland, Switzerland. Tel: 41 22 999 0001, Fax: 41 22 999 0020.

**XIX SESSION OF THE IUCN GENERAL ASSEMBLY**, 18-26 January 1994, Buenos Aires, Argentina. Organizers: World Conservation Union (IUCN). Contact: Coordinadora logística de la Asamblea General, IUCN, Rue Mauverney 28, CH-1196 Gland, Switzerland. Tel: 41 22 999 0001, Fax: 41 22 999 0020.

**4TH INTERNATIONAL CONGRESS OF VERTEBRATE MORPHOLOGY**, 31 July-4 August 1994, Chicago. Contact: Dr Susan Herring, Chair, ICVM Organizing Committee, Department of Orthodontics SM-46, University of Washington, Seattle, Washington 98195, USA, Tel: (206) 543-3203, Fax: (206) 685-8163.

**XVTH CONGRESS OF THE INTERNATIONAL PRIMATOLOGICAL SOCIETY**, 3-8 August 1994, Bali, Indonesia. Organizers: Directorate General of Forest Protection and Nature Conservation (PHPA), the Indonesian Wildlife Society (IWS) and the International Primatological Society (IPS). Contacts: Secretariat, 15th IPS Congress, PT, Bayu Buana Travel Service Lyd., Wisma Bank Dharmala 19th Fl, Jend. Sudirman Kav. 28, Jakarta 12910, Indonesia, or Dr Linda Prasetyo, c/o Perth Zoo, 20 Labouchere Road, Western Australia 6151, Australia, Tel: 09 368-1916, Fax: 09 367-3921, or Dr Soegardjito, WWF/US Asia-Pacific Program, 1250 Twenty-fourth Street, N.W., Washington, D.C. 20037, USA, Tel: (202) 861-8300, Fax: (202) 223-6971.

**VTH INTERNATIONAL BEHAVIOURAL ECOLOGY CONGRESS**, 14-20 August 1994, University of Nottingham, England. Contact: ISBE Congress, Conference Nottingham, The Business Information Centre, 309 Haydn Road, Nottingham NG5 1DC, UK.

**VITH INTERNATIONAL CONGRESS OF ECOLOGY: ECOLOGICAL PROGRESS TO MEET THE CHALLENGE OF ENVIRONMENTAL CHANGE**, 20-26 August 1994, University of Manchester, England. Contact: The Secretary, VI International Congress of Ecology, Department of Environmental Biology, The University, Manchester M13 9PL, England.

## Contributions

We would be most grateful if you could send us information on projects, research groups, events (congresses, symposia, and workshops), recent publications, activities of primatological societies and NGOs, news items or opinions of recent events and suchlike, either in the form of manuscripts (double-spaced) or in diskettes for PC compatible text-editors (MS-Word, Wordperfect, Wordstar). Articles, not exceeding six pages, can include small black-and-white photographs, figures, maps, tables and references, but please keep them to a minimum.

Please send contributions to the editors: **Anthony Rylands**, Departamento de Zoologia, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, 31270-901 Belo Horizonte, Brazil, Fax: (031) 441-1412, or c/o Conservation International, Rua Bueno Brandão 393, Belo Horizonte 31010-060, Minas Gerais, Brazil, Fax: (031) 222-8429, or **Ernesto Rodríguez Luna**, Parque de La Flora y Fauna Silvestre Tropical, Universidad Veracruzana, Apartado Postal 566, Xalapa, Veracruz 91000, México, Fax: (281) 8-77-30.

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