

# Pitheciine Action Group



## Newsletter

August 2009



**“PAG’s mission is to promote research and conservation of pitheciid primates”**

Golden-backed uakari (*Cacajao melanocephalus*)



Photo: Bruna Bezerra.

**Preview:** In this issue, you will find out about the ongoing Guigó Minas research project. It investigates the behaviour, ecology and communication of wild and captive black-fronted titi monkeys (*Callicebus nigrifrons*).



Photo: Douglas Trent

**Welcome the fourth edition of the PAG Newsletter.**

To learn more about PAG people, take a look on PAG website:

[www.pitheciineactiongroup.org/pitheciine-action-group\\_people.html](http://www.pitheciineactiongroup.org/pitheciine-action-group_people.html)

If you are a PAG member, please send us your biography so that we can include you on the website too!!

Thank you,

Bruna Bezerra & Sarah Boyle



(bruna@pitheciineactiongroup.org;  
sarahannboyle@gmail.com)



Photo: Bruna Bezerra.

*Chiropotes* sp.

Also, you will see the products and the perspectives of a long-term study on black (*Chiropotes satanas*) and grey bearded sakis (*Chiropotes utahickae*) in the Tucuruí Reservoir in Brazil.

In addition, there is updated information on the XIII



Brazilian Primatological Conference!! The event was originally scheduled for September 1-5, 2009 in Blumenau, Santa Catarina, Brazil. However, it was postponed due to the high number of H1N1 influenza cases confirmed in the area at the moment. A new date for the conference has already been proposed!!!

**Happy reading, everyone!!!**

## Ongoing projects: *Callicebus*... Brazil



### The conservation, behaviour and ecology of the black-fronted titi monkey (*Callicebus nigrifrons*) in Minas Gerais, Brazil

Study sites: Caraça Natural Reserve (20°05'S 43°29'W) and Inhotim (20°08'S 44°13'W)

Coordinators: Cristiane Cäsar (University of St Andrews, UK; PUC Minas, and Inhotim, Brazil) and Dr. Robert J. Young (PUC Minas, Brazil)

Researchers involved:

*Ph.D. Student:* Cristiane Cäsar

*Master's students:* Glênio P. Santos (PUC Minas)\*; Christie M. F. Morais (PUC Minas)\*

*Undergraduate students:* D. Guedes\*; S. Q. Ferreira\*; A. Nahur\*; M. Assunção\*; C. P. Marcolino\*; P. H. N. Silva\*; M. L. C. Sena\*; G. C. N. Soares\*; C. G. Afonso\*; R. V. Santos\*; (all from PUC Minas, Brazil) and E. S. Franco\* (Unicentro Izabela Hendrix and Inhotim, Brazil) \*Indicates past students.

*Field assistant:* Vandilso Farias

Researchers with the Projeto Guigó Minas have studied the black-fronted titi monkey (*Callicebus nigrifrons*) in the wild since August 2003. The main goals of the project are to: 1) study the behaviour and ecology of the species – including reproduction, migration, home range, communication and cognition and; 2) provide training and supervise new researchers in animal behaviour.

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## Ongoing projects: *Callicebus*... Brazil

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Caraça Natural Reserve. Photo: Cristiane Cäsar.

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The study of wild *Callicebus nigrifrons* began in Caraça in 2003, with the initial goal of mapping the locations of the *Callicebus* groups and habituating the animals for behavioural studies. Caraça Natural Reserve has a total area of 11,000 ha and is located in Minas Gerais, southeastern Brazil, some 125 km from Belo Horizonte. The region is formed by a mountain complex that separates the “Cerrado” (Brazil’s savanna) and the Atlantic Forest, in the south, and a zone of transition from “Cerrado” to Atlantic Forest and “Caatinga” (scrub forest), in the north. The majority of the Atlantic Forest within the reserve consists of secondary forest, and has been re-growing for the last 50 years.

The project’s long-term goal is to sustain a continuous field study of *Callicebus nigrifrons*, where researchers would manage a database with demographic, behavioural and ecological information from different titi groups.

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## Ongoing projects: *Callicebus*... Brazil

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Photo: Cristiane Cäsar.

### *Continued...*

The Projeto Guigó Minas has received funding from several agencies such as PUC-Minas, Royal Zoological Society of Scotland, Primate Action Fund (Conservation International), and FAPEMIG. Eleven undergraduate and two postgraduate students (MSc) have completed their research projects at the study site. Both MSc students successfully completed their projects in June 2008, focusing on the feeding and foraging behaviour of black-fronted titi monkeys. The students managed to collect several hundred hours of data spread over a continuous 12-month period. MSc Glênio dos Santos studied the feeding behaviour and diet of the titi study groups. He focused on whether season and time of day affected the foraging behaviour of the species. MSc. Christie Morais studied the factors that influenced the decision of foraging titi monkeys to leave their usual food patch and find a new one. The students are now preparing manuscripts based on their projects' results to be submitted to primate journals.

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## Ongoing projects: *Callicebus*... Brazil

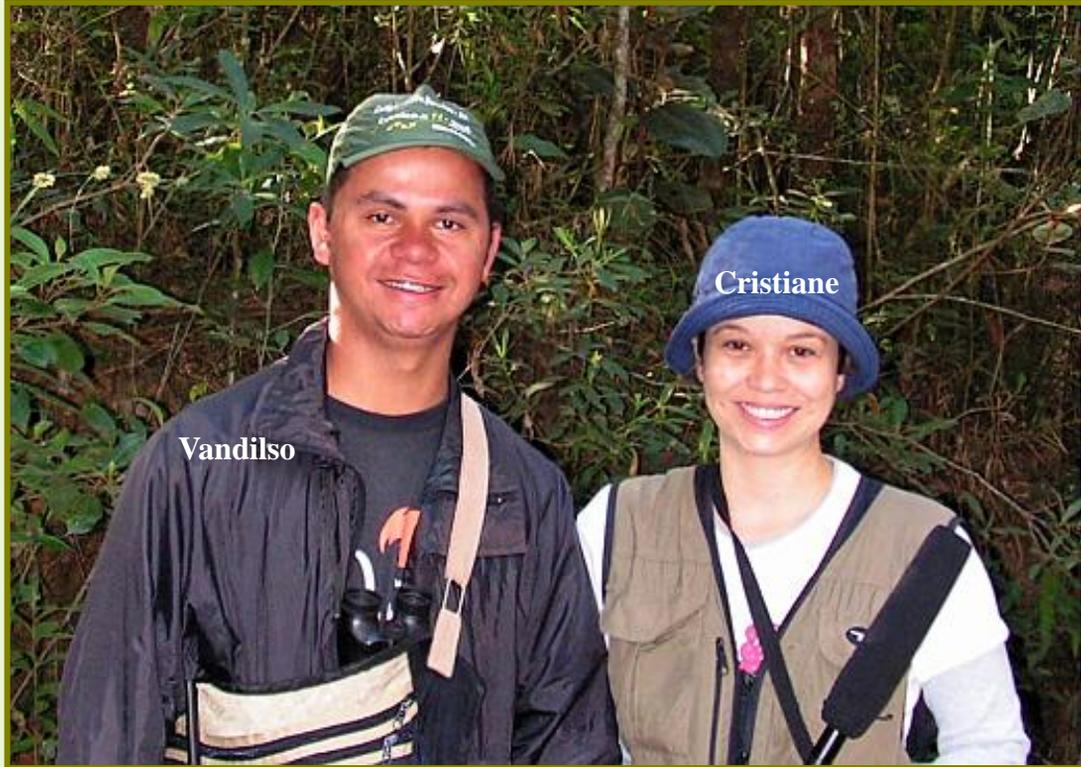


Photo: João Julio.

### *Continued...*

Currently there are five habituated groups of black-fronted titi monkeys in the area. An on-going Ph.D. study is investigating the vocal communication system of the monkeys. The study is conducted by Cristiane Cäsar, a Brazilian Ph.D. candidate based at St Andrews University (Scotland). Cristiane is under the supervision of Professor Klaus

Zuberbühler and Professor Richard Byrne, and she is collaborating with Dr. Robert J. Young (PUC Minas, Brazil). Vandilso Farias is currently her field assistant. The aim of the project is to describe the vocal repertoire of wild black-fronted titi monkeys and to conduct playback experiments in order to establish the relationship among acoustic flexibility, context, and natural external events. In addition, Cristiane is investigating anti-

predator behaviour in black-fronted titi monkeys in order to verify the possible occurrence of referential communication in the species. The study is currently supported by CAPES and FAPEMIG.



*Callicebus nigrifrons*.  
Photo: Camilla Marcolino.

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# Ongoing projects: *Callicebus*... Brazil

*Continued...*



*Callicebus nigrifrons*. Photo: Cristiane Cäsar.

Future postgraduate projects will focus on habitat use, postural behaviour and social behaviour of the black-fronted titi monkey.



## Inhotim

In 2007 the researchers of the Projeto Guigó Minas began the process of habituating black-fronted titi monkeys (*Callicebus nigrifrons*) at another field site called Inhotim. This field site is in the city of Brumadinho, which is also located in Minas Gerais. The Instituto Cultural Inhotim (a contemporary art museum in the middle of a botanical garden) is responsible for the new field site, which consists of a forest remnant of some 600 hectares of Atlantic Forest and Cerrado.

Inhotim forest. Photo: Rubens Mota.



Researchers have found that the habituation of the titi monkeys to humans has been slower in Inhotim than in Caraça. This difference between sites is possibly related to a history of extensive hunting, mining and deforestation in the area surrounding Inhotim.

The new study site at Inhotim will allow the researchers to compare geographically isolated populations suffering from different artificial and natural pressures, which will lead to a better understanding of the species. Data collection in this area has been funded by the Instituto Cultural Inhotim.

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# Ongoing projects: *Callicebus*... Brazil

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For more details about this project, please contact Cristiane Cäsar (ccd9@st-andrews.ac.uk) or Dr. Robert Young (robyoung@pucminas.br). The information about Projeto Guigó Minas was provided by Cristiane Cäsar.

## Selected publications from Projeto Guigó Minas

Cäsar, C. & Young, R.J. (2008). A case of adoption in a wild group of black-fronted titi monkeys, *Callicebus nigrifrons*. *Primates*, 49 (2), 146-148.

Cäsar, C., Franco, E.S., Soares, G.C.N. & Young, R.J. (2008). Observed case of maternal infanticide in a wild group of black-fronted titi monkeys, *Callicebus nigrifrons*. *Primates*, 49 (2), 143-145.

Santos, G.P. (2008). Padrão de atividades, dieta e área de vida de *Callicebus nigrifrons* (Spix, 1823). MSc. thesis, Pontifícia Universidade Católica de Minas Gerais, PUC Minas, Brasil.

Morais, C.M.F. (2008). Fatores que afetam o tempo de permanência de *Callicebus nigrifrons* de vida livre em fontes alimentares. MSc. thesis, Pontifícia Universidade Católica de Minas Gerais, PUC Minas, Brasil.

Santos, R.V., Young, R.J., & Cäsar-Damas, C. (2008). Análise das batalhas vocais de grupos de *Callicebus nigrifrons* Spix, 1823. In: W. Lobato, C.V.S. Sabino & J.F. de Abreu. (Orgs.). Destaques Iniciação Científica 2007. Belo Horizonte: PUC Minas, p. 61.

Marcolino, C.P., Young, R.J., & Cäsar, C. (2006). Avaliação comportamental de *Callicebus nigrifrons* em resposta à introdução de indivíduos para formação de novos grupos em cativeiro. In: W. Lobato, C. V. S. Sabino & J. F. de Abreu. (Orgs.). Destaques Iniciação Científica 2005. Belo Horizonte: PUC Minas, p. 85-98.

Silva, P.H.N.; Young, R.J. & Cäsar, C. (2006). Características dos Sítios de Dormida de *Callicebus nigrifrons* Spix, 1823 na RPPN do Santuário do Caraça. In: W. Lobato, C.V.S. Sabino & J.F. de Abreu. (Orgs.). Destaques Iniciação Científica 2005. Belo Horizonte: PUC Minas, 2006, v. , p. 255-268.

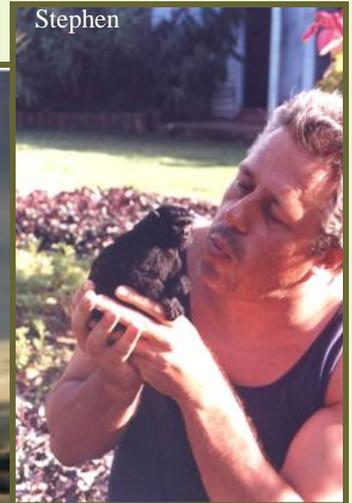


## Past projects: *Chiropotes*

### Research on black (*Chiropotes satanas*) and grey bearded sakis (*Chiropotes utahickae*) in the Tucuruí Reservoir in Brazil



Tucuruí Reservoir in Brazil. Photo: Suleima Silva.



Between 2001 and 2006, Stephen Ferrari coordinated a research programme on the primate populations of the area surrounding the Tucuruí Reservoir on the Tocantins River in eastern Brazilian Amazonia. In addition to more general surveys and studies of other species, fieldwork included the ecological monitoring of groups of bearded sakis on the right (*Chiropotes satanas*) and left (*C. utahickae*) banks of the Tocantins. As very little was known of the ecological characteristics of either species at the time, one general aim was the establishment of a database to support the eventual development of conservation strategies, with a primary focus on the effects of habitat fragmentation. A subsidiary objective was the establishment of a long-term monitoring programme, which has been continued since 2006 by two of the original participants, Liza Veiga and Suleima Silva. Their original studies, and those of two other participants – Ricardo Santos and Tatiana Vieira – provided the data for their postgraduate theses at the Goeldi Museum and the Federal University of Pará.

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## Past projects: *Chiropotes*

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Ricardo

Ricardo Santos (MSc. 2002) conducted pioneering ecological studies of both bearded saki species, and provided some of the first detailed data on fundamental aspects of their ecology such as diet and ranging patterns. Among other results, he confirmed the presence of a relatively large social group (23-28 members) of *C. utahickae* on a 130-hectare reservoir island called Germoplasma, which had been isolated from surrounding forest for almost 20 years. Perhaps even more surprisingly, his similarly-sized *C. satanas* study group (27 members), located on the mainland of the right bank of the Tocantins, occupied a smaller home range (< 60 ha), despite having access to a much larger area of forest, although this group was monitored in much less detail. In both cases, seeds were a dietary staple, although flowers, in particular, and nonreproductive plant parts were also prominent components of the diet, apparently reflecting the constraints of habitat fragmentation.

Suleima Silva (MSc. 2003) continued the monitoring of *C. satanas* by focussing on two groups – Ricardo's original mainland study group, and a second group resident on a small island of only 17 hectares.



Suleima

The aim was to provide both a longitudinal and a comparative perspective, with the island group representing an extreme of habitat fragmentation. The mainland group had increased in size (up to 34 members), but still occupied a home range of only 70 hectares. The island group had only seven members. Once again, the sakis were typical seed predators, although flowers were a prominent component of the diet, in particular for the island group. The mesocarp of palm fruits, especially the abundant *Orbygnia phalerata*, was also a dietary staple. An interesting characteristic of both groups was the relative frequency of interspecific associations, in particular with capuchins (*Cebus apella*), which were recorded in up to a quarter of total contact time with the mainland group. A number of parameters, including increased rest, reduced social interaction, an apparent lack of reproduction, and in particular, the low quality of its diet (55.6% flowers) indicate that the island group was under potentially deleterious nutritional stress. Suleima is currently planning her Ph.D. project, which is to focus on the ecology of the area's third pitheciid, the dusky titi (*Callicebus moloch*) on Germoplasma island.

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## Past projects: *Chiropotes*

*Continued...*



Tatiana

Tatiana M. Vieira (MSc. 2005) returned to Germoplasma Island for a new investigation of the resident *C. utahickae* group first studied by Ricardo Santos, with the principal aim of expanding the database (including different parts of the year), investigating the potential role of the sakis as seed dispersers, and evaluating longitudinal patterns. While she found a group of similar size, many aspects of its ecology had shifted, possibly reflecting changing patterns of fruiting phenology, or other factors, such as differences in the local abundance of competitors, such as capuchins. In particular, the group's diet included a much larger proportion of fruit, and much fewer flowers, even when comparing the same period in the two years. One of the principal results of this study was the identification of 110 species of plant that were exploited by the sakis for at least one dietary resource. While such a large

number is typical of *Chiropotes*, it is quite remarkable, considering the small size of the island – in fact, the group kept to an area of only 60 hectares during this study. The analysis of faecal samples revealed that the sakis were potentially important as seed dispersers for many of the plant species they exploited, and that they often ingest insects, either purposefully, or incidentally, during fruit feeding.



Liza

Liza Veiga (Ph.D. 2006) adopted a similar experimental design to that of Suleima, but with a different island, and a much longer study period, which partially overlapped two different years, providing an additional longitudinal perspective. The mainland group had continued to grow, reaching 39 members at the beginning of 2006, and, while its home range had also expanded, it was still under 100 hectares.

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## Past projects: *Chiropotes*

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Photos: Liza Veiga.



Items eaten by black bearded sakis (*Chiropotes satanas*)

With eight members, the island group was similar in size to that of Suleima, and occupied a similar area (19 ha), but was ecologically very different. The contrasts were likely related to differences in the composition of the forest on the respective islands, which is reflected in major differences in the diet of the two groups. Whereas Suleima's island group relied heavily on flowers, the diet of Liza's island group was 60% seeds. The latter group also exploited an amazing 119 plant species, in comparison with only 21 species on Suleima's island. While partly influenced by differences in the respective study periods, these contrasts point to significant differences in the composition of the forest on the islands, which will obviously influence their potential for the maintenance of populations of bearded sakis over the long term. Liza also recorded no less than 147 plant species in the diet of the mainland group, the largest number ever obtained in a field study of bearded sakis. She also recorded, in both groups, the systematic predation of arthropods, which were a prominent component of the diet in some

months. This study also provided detailed data on grouping patterns (in particular fission-fusion behaviour) and other aspects of the social behaviour of the species.

While in many ways still only preliminary, the results of the ecological monitoring of the bearded sakis of the Tucuruí Reservoir can be considered not only a success, but also an important advance in our knowledge of the ecology of the bearded sakis in general, and of these two endangered species in particular. In fact, together with the results of a number of other recent studies in eastern Pará and western Maranhão, the black bearded saki (*C. satanas*) has now gone from relative obscurity to being the best-studied member of the genus. Perhaps the most important finding has been with regard to the ability of the sakis to survive over the long term (> 20 years, since the flooding of the reservoir) in fragments of relatively small size, in comparison with home ranges in continuous forest, which has obvious implications for the conservation of populations in the highly fragmented landscape of eastern Amazonia. There are a number of important provisos here, however, in particular the absence of hunting pressure. The islands at Tucuruí August also be atypical fragments, for a number of reasons, including the fact that they are invariably formed by hilltops, are located in an unusually humid matrix (the reservoir), and have suffered little disturbance, such as selective logging.

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## Past projects: *Chiropotes*

### *Continued...*

In addition, the data indicate that not all islands may be able to support viable populations of sakis, due to factors such as habitat composition. Also, while the taxonomic diversity of the diet appears to have been maintaining, the feeding data indicate that the survival of the sakis may be mediated by the exploitation of alternative resources such as flowers, nonreproductive plant parts, and palm fruits. Another interesting aspect of the results has been that the longer the period of monitoring, the greater our understanding of the species' behavioural repertoires, the diversity of their diets, and the factors determining ecological patterns. Hopefully, this expansion of our knowledge will continue under the leadership of Liza Veiga, who has assumed the responsibility, and the challenges of continuing the ecological monitoring of the Tucuruí bearded sakis and is now working on new groups, and new approaches, such as the investigation of vocal repertoires. The importance of this work for the conservation of the bearded sakis over the long term cannot be underestimated.

### **Selected products from this project**

Veiga, L.M. & Ferrari S.F. (2006) Predation of arthropods by southern bearded sakis (*Chiropotes satanas*) in eastern Brazilian Amazonia, *American Journal of Primatology*, 68:209-215.

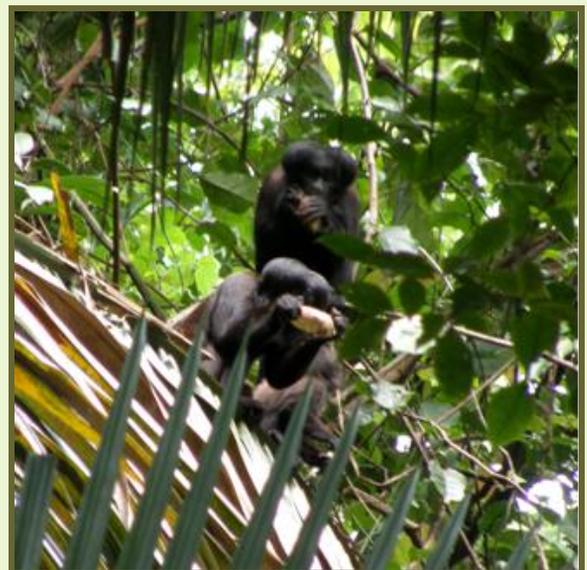
Veiga, L.M., Pinto L.P. & Ferrari S.F. (2006) Fission-fusion sociality in bearded sakis (*Chiropotes albinasus* and *Chiropotes satanas*) in Brazilian Amazonia, *International Journal of Primatology*. 27(Suppl 1): 224.

Veiga, L.M. & Ferrari S.F. (2007) Geophagy at termitaria by bearded sakis (*Chiropotes satanas*) in Southeastern Brazilian Amazonia, *American Journal of Primatology*. 69:816-820.

Veiga, L.M. & Ferrari, S.F. (2008) Coping with Habitat Fragmentation: Flowers as an Alternative Resource for Bearded Sakis (*Chiropotes* spp.), IPS 2008. Primate Eye, Special Issue - XXII Congress of the International Primatological Society. 2008. v. 96. p. 104-105.

Vieira, T. (2005) *Aspectos da ecologia do cuxiú de Uta Hick*, *Chiropotes utahickae* (Hershkovitz, 1985), com ênfase na exploração alimentar de espécies arbóreas da ilha de Germoplasma, Tucuruí-PA, MSc. Thesis, Museu Paraense Emílio Goeldi and Universidade Federal do Pará, Belém.

Ferrari, S.F., Lima E.M., Silva S.S.B., & Veiga L.M. (2004a) Conservation of remnant populations of bearded sakis (*Chiropotes satanas*) in the Tucuruí Reservoir, southeastern Amazônia. *XXth Congress of the International Primatological Society, Folia Primatologica*, 75(suppl. 1):260-261.



*Chiropotes satanas*. Photo: Liza Veiga.

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## Past projects: *Chiropotes*

### *Continued...*

Ferrari, S.F., Silva, S.S.B., Pereira, A.P., Carvalho, M., Santos, R.R. & Veiga, L.M. (2004b) Rethinking the ecology of eastern Amazonian bearded sakis (*Chiropotes satanas*). Resumos do XXth Congress of the International Primatological Society, *Folia Primatologica*, 75, (suppl. 1):261.

Santos, R.R. (2002) *Ecologia de cuxiús (Chiropotes satanas) na Amazônia Oriental: Perspectivas para a conservação de populações fragmentadas*. MSc. Thesis, Museu Paraense Emílio Goéldi e Universidade Federal do Pará, Belém.

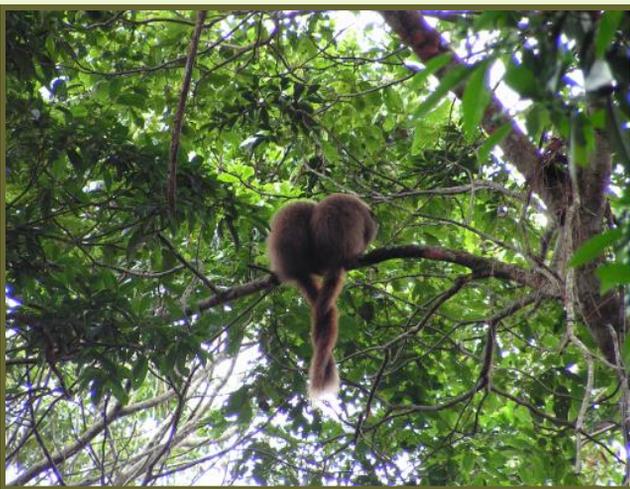
Silva, S.S.B. (2003) Comportamento Alimentar do cuxiú-preto (*Chiropotes satanas*) na área de influência do reservatório da usina hidrelétrica de Tucuruí-Pará. MSc. Thesis, Museu Paraense Emílio Goéldi e Universidade Federal do Pará, Belém.

Silva, S.S.B., & Ferrari, S.F. (2008). Behavior patterns Southern bearded sakis (*Chiropotes satanas*) in the fragmented landscape of Eastern Brazilian Amazonia. *American Journal of Primatology*, 71, 1-7.

Veiga, L.M. & Silva, S.S.B (2005) Relatives or just good friends? Affiliative relationships among male southern bearded sakis (*Chiropotes satanas*). *XI Congresso Brasileiro de Primatologia*, Porto Alegre, 13 a 18 de fevereiro de 2005, p. 174.

For more details about the Tucuruí project, please contact Dr. Stephen Ferrari and his team. (The information on this project were provided by Dr. Stephen Ferrari and Dr. Liza Veiga).

## Pitheciidae images...



*Callicebus nigrifrons* engaged in tail-entwining.



*Callicebus nigrifrons* engaged in social grooming.



Photos: Cristiane Cäsar.

## Upcoming meetings!

### XIII Brazilian Primatological Conference

Dear all,

Due to the growing number of H1N1 flu cases in Blumenau (Brazil) at the moment, the XIII Brazilian Primatological Conference will now be held 11-15 December 2009 instead of 1-5 September 2009. We are very sorry about this change. However, we had no choice but to follow the Brazilian government's recommendations and avoid the spread of the virus. Also, we wanted to make sure that we were not putting our delegates at risk of contracting H1N1. The event is already fully organised and the conference committee is looking forward to hosting everyone.

In December, Blumenau will be the Brazilian Capital of Primatology! The conference will bring together scientists from all around the world to discuss primate research, conservation and management. We will have lectures from famous primatologists such as Dr. Anthony B. Rylands (Deputy Chair - IUCN/SSC Primate Specialist Group) and Dr. Russell A. Mittermeier (Chair - IUCN/SSC Primate Specialist Group), as well as a series of round tables talks, short courses and poster sections to help promote Primatology without

frontiers. Representatives from local companies that fund and/or are willing to fund primate research and conservation projects will also be attending the conference.

We would like to ask all the delegates to try to reschedule so they can attend the XIII Brazilian Primatological Conference. Make sure you contact your travel agent to receive a full refund of your tickets by stating that your travel had to be rescheduled due to H1N1. We hope to see you all in Blumenau in December and we are counting on your support for this difficult, but necessary, change in the conference dates.

For more details, check our website (<http://www.furb.br/especiais/interna.php?secao=1750>) or get in touch with us via e-mail ([cbpr2009@gmail.com](mailto:cbpr2009@gmail.com)).

We wish you all the very best.

Yours sincerely,



2007-2009 Organizing Committee  
XIII Brazilian Primatological Conference

(Translation & editing: Bruna Bezerra & Sarah Boyle)

#### Other meetings:

- **2<sup>nd</sup> Meeting of the American Society of Primatologists**

18-21 September 2009; <http://www.asp.org/asp2009/index.htm>

- **2<sup>nd</sup> Annual Symposium. Bristol Conservation and Science Foundation.**

29 October 2009; <http://www.bristolzoo.org.uk/about/conservation/symposium2009>

Reminder!

### Latest pitheciid products

Boyle, S.A., Lourenço, W.C., da Silva, L.R. & Smith, A. T. (2009). Travel and spatial patterns change when *Chiropotes satanas chiropotes* inhabit forest fragments. *International Journal of Primatology* 30 (3), 515-531.

