

need to first approach neighboring farmers and ranchers to understand their views about the conservation of forest remnants within their properties. We decided to make use of a mechanism familiar to them, known as “mutirão,” in which community members volunteer to work together on a project of communal interest, such as the building of a road, a bridge, or a chapel. Consistent with this practice, neighboring farmers were invited to attend technical courses on ranching and bovine nutrition provided by SENAR/MG one of the project’s partner institutions, and at the same time participate in our conservation “mutirão.” By the end of November 2004,

more than 100 people had participated in ten courses.

These courses provide us with unique opportunities to explain some important conservation goals, such as the fencing and recovery of springs, creeks, and forest borders, which will help increase the standing water supply in the region. Many farmers have already noticed that local water sources are drying out, so they understand that immediate protection and recovery of degraded areas along the creeks is of fundamental importance, not only for expansion of habitat for the muriquis, but also for their own interest in increased milk and farm production.

HABITAT  
CONSERVATION

## Gran Chaco Conservation Program

Owl monkeys, giant armadillos, and giant anteaters, three species on which the Zoological Society of San Diego is focusing research in the Argentinean Chaco, were listed

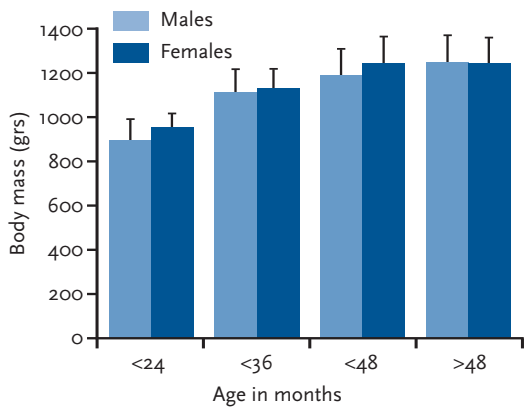
among the 19 priority mammal species for the Chaco Region.

Identification of conservation priorities for the mammals of the South American Chaco was one of many results from a five-day workshop attended by Millennium Postdoctoral Fellow Dr. Fernandez-Duque and organized by The Nature Conservancy.

Giant armadillos were singled out as one of the highest conservation priorities, given that they probably live in low densities, require vast areas of land that is fast disappearing to

agriculture, and are also threatened by hunting. In terms of research, progress was made in laying the groundwork for intensive fieldwork on giant armadillos in 2005. Permits were obtained to begin work at Copo National Park in the Province of Santiago del Estero and Pilcomayo National Park in the Province of Formosa. Copo is the only national park protecting the dry Chaco of Argentina and supports the only viable population of giant armadillos in the country, as well as important numbers of giant anteaters. Pilcomayo is the best protected and largest park of the humid Chaco and supports owl monkeys and giant anteaters. With the support of The Offield Family Foundation, Argentinean biologist Natalia Ceresoli conducted preliminary trips to both parks to set up logistics for her doctoral research. Beginning in January 2005, she will conduct an evaluation of the population status of both species using remote cameras and transect censuses.

On going owl monkey research during the last several years had confirmed that owl monkeys are one of the few socially monogamous primates in the world. Monogamous species tend to show very little difference in the sizes of males and females. When males are as large as females, it is predicted that there will be little or no competition among individuals for access to mates. Thus, we were surprised to find that although owl monkeys show very little difference in



Sex differences in body mass for 72 male and 64 female owl monkeys of various ages. There were no statistically significant sex differences for any of the age classes considered.

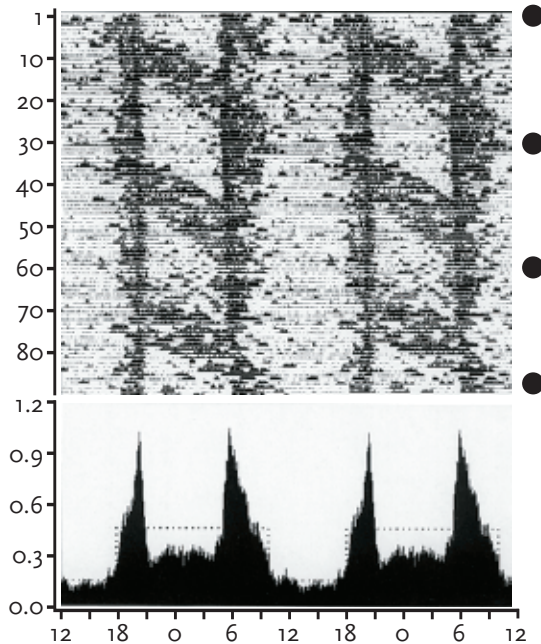


Dentition of a young owl monkey showing the sharp, large canines characteristic of young individuals holding reproductive positions.



Dentition of a replaced individual showing missing canines.

Top: Activity recordings in a male owl monkey from November 2003 to February 2004 (top to bottom). Note the pronounced lunar periodic course of night time activity; around new moon (indicated by the black circles on the right margin) little motor activity is produced throughout the night, whereas much more activity occurs throughout the morning hours than at other phases of the moon.



Bottom: Bimodal activity pattern averaged over the entire recording period shown above. During the night from 21:00 – 06:00 the average level of activity is considerably higher than during bright hours of the day. Y axis: Time of day, x-axis: Relative activity as % of mean 24-h total averaged over the recording period.

body mass between males and females, there is intense competition and aggression among both sexes while searching for a mate. Fourteen of the 15 regularly observed owl monkey pairs had at least one of the mates replaced during a three-year period. Mate replacement usually occurred as a consequence of an intruding adult expelling the same-sex resident individuals through aggressive interactions. Twelve of the replaced individuals died and five disappeared, suggesting that the costs of this competition are high, in some cases including severe damage to canines and ear lobes.

We also continued to examine the unusual activity patterns of owl monkeys in the Chaco. In collaboration with Dr. Hans Erkert (Tubingen University, Germany), collars were placed on eight owl monkeys to record their activity every five minutes during six months. After that time, the animals were recaptured and the data from the collars downloaded to the computer. The data clearly showed that owl monkeys were active during the day as well as during the night and that most nocturnal activity occurred when the moon was full.

HABITAT  
CONSERVATION

*Establishment of Bakossi National Park, Cameroon*

CRES partnerships in Bakossiland continued to develop in 2004, including completion of the field consultation process for the gazettelement of Bakossi National Park. The process was jointly supported by the World Wildlife Fund's Coastal Forests Programme.

Local support for the new Park was overwhelming, with over eighty villages signing the legislative support for the Park's creation. Certain boundary changes were recommended to the Steering Committee to accommodate local user rights. CRES staff played a leading role in technical presentations to the government and communities about the Park's structure, including options and legal rights of indigenous peoples, dominated by the Bakossi tribe.

The field gazettelement procedure has been exhaustive, concerning all sectors of government as well as local communities and other stakeholders. This participatory approach has shown to be highly effective and has resulted in favorable community cooperation for the Park's implementation. The

gazettelement report is now in the hands of the Government of Cameroon undergoing final revision. Final signature of the Prime Minister for the Park's legal creation into State lands is expected in 2005.

Traditional interest in the creation of sacred forests to complement the new Protected Areas System in Bakossiland continued in 2004, and it is envisioned that such sites will be incorporated into the National Park in 2005. Further social and economic surveys are planned for 2005 to increase the information base for the long-term management planning of the Park.

More information on this work can be found in the book supported by CRES and published by the Royal Botanic Gardens Kew in 2004. Cheek, M., Pollard, B. J., Darbyshire, I., Onana, J-M., and Wild, C. (eds.). *The Plants of Kupe, Mwanenguba and the Bakossi Mountains, Cameroon. A Conservation Checklist.*