



Gorilla Journal

Journal of Berggorilla & Regenwald Direkthilfe

No. 32, June 2006



**The Stories of
Mugaruka and
Chimanuka**

**Bwindi-Impenetra-
ble: 15 Years as a
National Park**

**The Cross-Sanaga
Gorillas: North-
ernmost Gorilla
Populations**

**Humans and Go-
rillas – what Kind
of Relationship?**



BERGGORILLA & REGENWALD DIREKTHILFE

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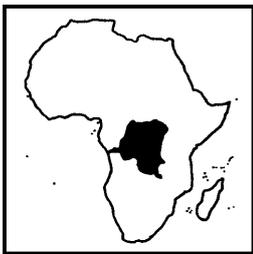
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D. R. CONGO

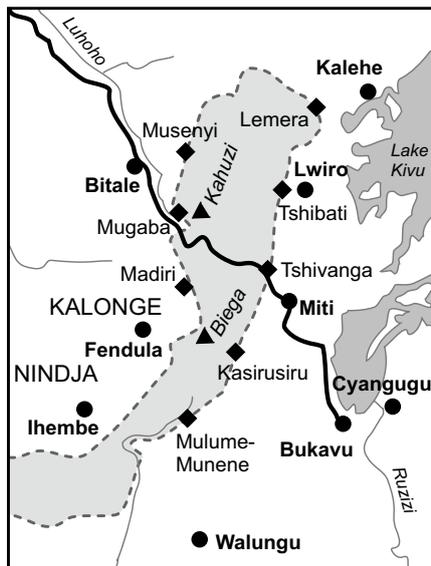
Trip to the Kahuzi-Biega National Park

At the end of January 2006, I visited the Kahuzi-Biega National Park accompanied by the photographer Christian Kaiser. We also visited projects in the surroundings of the park that have been supported by *Berggorilla & Regenwald Direkthilfe* over the last few years. Carlos Schuler had organized everything perfectly and was a wonderful host during our stay.

The office of the ICCN/GTZ project, parts of which burnt down last year, was in the process of being rebuilt. I presented a computer to park director Bernard Iyomi Iyatshi; this will provide park staff with permanent access to the Internet. The computer was funded by employees of the bank Kempen & Co. in Amsterdam; they collected this donation at a Christmas auction for us and we received it via the *Apenheul Primate Conservation Trust*, the conservation foundation of the Apenheul primate park.

Of course, we also wanted to see the gorillas, and we decided to visit the Chimanuka group, hoping to catch a glimpse of the twins. Unfortunately, the mother was not interested in meeting us; but we spent a long time watching Chimanuka feed and also observed some other group members.

The next day, we visited one of the schools where Pygmy children have



now been educated for some years – it is only thanks to the PNKB/GTZ project that they can go to school at all. The school in Lukananda has admitted 16 of these children (a total of 300 students are taught there).

Volker Jährling paid for part of the tuition fees and for costs of teaching materials for 200 Pygmy pupils in 2005. The company ESGE in Albstadt, Germany, has financed their 2005/2006 academic year in its entirety, to mark the occasion of the company's anniversary; on behalf of the students, we extend a heartfelt "thank you" to managing director Karl Eugen Maag, who has



Books that were donated to the new library after our appeal

Photo: Carlos Schuler



Pygmy children in the Lukananda school, with their new benches

Photo: Angela Meder

Attack on the Mugaba Patrol Post

The attack on the patrol post took place during the night of 10 to 11 April, 2006, commencing at 11.30 pm. It was carried out by the Mai-Mai division of Colonel Mabolongo, "alias 106", and Hutu rebels under the leadership of "Chuck Norris". The post was attacked by approximately 50 troops, with another 50 on standby in the vicinity of the post.

The outcome was that one soldier of the FARDC (*Forces Armées de la République Démocratique du Congo*) was killed and one was injured; 4 of the soldiers' wives and 26 men were kidnapped and taken into the forest; these people happened to be on a lorry that was looted at the post. On the side of the attackers, 2 rebels were killed and a major received a bullet wound. The post was looted: 2 AKA rifles with 60 rounds of ammunition, one GPS, one Motorola phone, one solar panel and the food rations of the guards were stolen.

During our visit to the patrol post, one of the women hostages returned – having been freed on 13 April. The other 3 women and most of the men were also freed in the meantime, but some still are with the attackers.

According to the information given by the returning woman, the objective of the attack had been to abduct the guards and the troops stationed at the post and incorporate them into the rebel force; unfortunately for the attackers, they encountered resistance. Since the attack, only 7 soldiers and 6 guards remain at the Mugaba patrol post.



D. R. CONGO

Le Gorille Magazine 2006

In the *Gorilla Journal* No. 30 we asked you to donate money for the magazine *Le Gorille*. This magazine is distributed free of charge in the vicinity of the Kahuzi-Biega National Park. After our call for help, several people donated varying amounts of money. Thanks to their help, we could pay for some of the printing costs and ensure the future publication of the magazine. Many thanks to all the donors! They have made a significant contribution to the 13th edition of the magazine, which was published in January 2006. Angela Meder has some copies for interested parties; if you would like to receive a copy (and make a donation to cover the mailing costs), please contact her. We also received funds for the publication of the 14th edition: a generous donation from the Bank Kempen & Co. in Amsterdam will cover part of the printing costs. The money was transferred through the *Apenheul Primate Conservation Trust*, to whom we would also like to offer our sincere thanks.



Unfortunately, we found that the orphanage, which currently houses 20 chimpanzees and numerous smaller monkeys, is in a pitiful state. Food, medicine and new enclosures are required urgently. Gorillas are not kept in Lwiro – they would not survive the conditions there.

Angela Meder

The Stories of Mugaruka and Chimanuka ... so far

Mugaruka and Chimanuka are eastern lowland (or Grauer's) gorilla silverbacks, living in the high altitude sector of Kahuzi-Biega National Park. Despite the work of the dedicated park staff, the pressure on the park is intense, and since the civil unrest that began in the mid-1990s protecting these animals has been an uphill struggle. Their slaughter for trophies or meat, or simply out of fear, has affected many of the gorilla families in the park and the wider area.

Telling the story of just two animals that are habituated and well known to the rangers shows how the sociopolitical problems in the area have an ongoing effect even on the animals that survive. Our sincere thanks go to Carlos Schuler and Bernard Iyomi Iyatshi for providing the information on which this article is based, and for the energy and commitment with which they work for the protection of Kahuzi-Biega and its gorillas.

Mugaruka was born in July 1987, a son of the silverback Mushamuka. At the age of only 3, he was caught in a snare and lost his right hand, giving him his characteristic stump. He had 5 elder brothers by the same father: Mubalala, Nindja, Bwana, Lambchop and Mint Sauce, all born between 1973 and 1981. These were all dead or missing by 1999, with 4 known to have been killed by poachers or soldiers. Mushamuka died in 1997, and from 1999 on



John Kahekwa and POPOF colleagues enjoy the new camera
Photo: Christian Kaiser

ensured the education of these children for a further year with this generous donation! It has also helped to address some of the worst problems in the school's facilities. During our visit to Lukananda, new school benches were delivered for one class.

In addition, we visited a local NGO, the *Pole Pole Foundation* (POPOF), which was founded by the ranger John Kahekwa in the surroundings of the

park. The POPOF office was completely looted during a robbery in 2004 and most of the equipment has not yet been replaced. As a contribution from the "Zoo-Mobile" fund-raising drive at Stuttgart Zoo, I was able to present a digital video camera to POPOF, and a solar storage battery charger courtesy of Mr and Mrs Winkler, who played a decisive role in the zoo fund-raising campaign.

The last part of the programme was a visit to the Lwiro research station.



Young chimps in the Lwiro orphanage Photo: Christian Kaiser



D. R. CONGO

Mugaruka acted as the group leader, although he was not yet fully mature.

In 2000 at age of 13 he became a fully developed silverback, and for the next few years defended his group successfully against several other aggressive males. On June 8th, 2000 he had a son, named Chubaka, and then several months later another called Maendeleo. With a large group of females and two offspring, Mugaruka's scarred childhood was healing into a healthy adult life. In September 2002, however, he had an encounter with Chimanuka.

Chimanuka was born in 1986 to the silverback Maheshe, who occupied the same area of the park as Mushamuka. Maheshe was one of the most well-known gorillas in the park, was visited by many tourists and film crews, and in 1991 he appeared on the 50,000 Zaire note. In 1993, however, he was killed by poachers who took his head and attempted to sell it for 200 US\$. Maheshe had not tolerated any sub-adult males in his group while he was alive, and after his death the lack of a potential leader caused the group to gradually dislocate and fall apart. Chimanuka ended up living on his own as a blackback until he matured into a silverback and began searching for females with which to form his own group. In September 2002 he found Mugaruka, fought with him, and won, thus taking charge of a group of 14 individuals including many fertile females.

Mugaruka was the clear loser of this battle, which also took the life of his

young child Maendeleo. He was left with only one female Lushasha and his older son Chubaka. A few months later, however, he encountered Chimanuka again, losing the fight once more, and his one remaining female also switched to his rival's group. This left Mugaruka with no females, but still accompanied by his 2 year old son – a very unusual social arrangement! He spent all of 2003 in this way, but in 2004 he had a very fortunate encounter with a group of females that had no silverback, and of which he consequently came to be leader. These females had probably been the group of Mishebere, a silverback who went missing in early 2003, and whose body was found shot several months later.

Once again Mugaruka had a group of his own, but before he had time to produce any offspring, he separated from them in mid-2005 and began travelling alone, apparently after a challenge from one of the blackbacks in the group. This time Chubaka stayed with the females, leaving Mugaruka in the traditional role of a lone silverback. Despite challenging another silverback on Christmas Day 2005, at the time of writing this article this was still his situation, whilst Chimanuka remained at the head of a large and productive group. However, the story of these two young adult males, still only 20 years old, shows how the fate of these animals can turn for better or for worse at any time. The rivalry between Mugaruka and Chimanuka is typical of the life history of the species as we understand it, and they seem to be acting, and breeding, as normal. It must give us hope to see individuals whose early lives were so devastated by human intervention now exhibiting natural behaviour, and we can all thank the dedicated and professional park staff (past and present) for providing these animals with the opportunity to live as gorillas should.



Mugaruka Photo: Carlos Schuler

The Silverback Mugaruka

Nowadays park activities are not limited to community conservation – they also and especially include activities for the protection of the gorillas. In this article, we would like to report on one silverback whose life has already made history.

Those who have the chance to visit the Kahuzi-Biega National Park will recognize the silverback Mugaruka by his missing right hand. Born in 1987, into the Mushamuka family, he got his hand caught in a snare in 1991. He carried the snare around with him until his hand withered and fell off. In 1997, the male Nindja left the group peacefully (i.e. without interaction) taking with him 4 females, one of which was Mugaruka's mother.

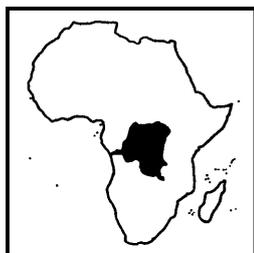
On October 30th, 1997, Nindja was killed near Kakala by a Rwandan soldier who had stayed in the Tshivan-ga guard post the previous night. The surviving gorillas re-grouped under the lead of a female called Mugoli (which means "queen") because Mugaruka was not yet old enough to lead the family.

In 1999, Mugoli conceded power to Mugaruka even though he was still a blackback male. In the same year, his family started to tolerate the presence of human visitors. Several representatives and actors from international tel-



Chimanuka Photo: Christian Kaiser

David Jay and John Kahekwa



D. R. CONGO

levision channels have visited the family since.

During the period from 2000 to 2004, the peace and quiet of the Mugaruka family was disturbed, when the silverback male Chimanuka attacked Mugaruka several times. During these skirmishes, Mugaruka lost several members of his family. On May 9th, 2000, 2 of Mugaruka's females decided to stay with Chimanuka. On October 21st, 2002, all his remaining females transferred to Chimanuka, except for Lushasha, the mother of the young Chubaka. On January 7th, 2004, Chimanuka returned and left with this last female, too.

For a while, Mugaruka lived alone with his son Chubaka. On May 19th, 2004, he succeeded in taking over the surviving Mishebere family and in forming a new group of 10 individuals.

On July 17th 2005, Mugaruka separated himself from all his new females and Chubaka. For reasons yet unknown he became solitary.

On January 20th, 2006, Mugaruka interacted with a group of females who had been abandoned in July 2005 and who were led by a blackback male called Mankoto. Very curiously, this interaction was entirely peaceful: Mankoto submitted himself to Mugaruka's dominance.

The reader might wonder how we succeed in collecting a family history like that of Mugaruka. As mentioned above, the work of park staff is not limited to development activities, but also includes surveillance of the gorillas. Our guides and trackers follow these gorillas every single day. An identification kit based on nose-prints (diagrams of the distinctive shape of each gorilla's nose) has been developed to help recognize individuals.

This daily work can be conducted only if security within the park is guaranteed. For this reason we appeal to everybody concerned (i.e. donors and decision-makers, both political-admin-

istrative and military) to contribute to the restoration of peace in general, and within the park in particular – each according to their means and abilities. This will help to guarantee the protection of the Kahuzi-Biega National Park.

Robert Mulimbi

Latest news of Mugaruka: occasionally he joins his old family led by the blackback male Mankoto, who seems to become stronger and stronger. At times the group splits, leaving Mugaruka and Mankoto each leading some of the females, whilst at other times they live peacefully in one big group or Mugaruka ranges on his own.

We all wait to see how the situation will develop when Mankoto will grow up to a silverback; most probably he will defend his own group and not tolerate Mugaruka in the same family.

Construction of a New Patrol Post at Mt. Tshiabirimu

The construction project at Kikyo patrol post is closely associated with the urgency of saving the gorilla Kanindo. In March 2005 this silverback separated from the Lusenge family and became solitary, ranging in the extreme south of Mt. Tshiabirimu. He leaves the park regularly and roams the adjacent fields, where he encounters goats, sheep and cows. He has peaceful encounters with passers-by on the Kaliro–Vuveylac road, to whom he has now habituated.

However, this gorilla is at risk: he may contract or pass on diseases, he may be killed or cause an accident on the road. The construction of a patrol post at Kikyo is urgently required to protect Kanindo from possible harm.

Construction started on April 18th, 2005. Activities have included:

- Surveying the area to choose the appropriate site;
- Clearing the site;
- Purchasing and transporting the construction materials;
- Sensitizing the local population, including the local chiefs, and ensuring that they participated in the construction of the post;
- Recruiting carpenters and stone masons;
- Beginning the carpentry and masonry work.

Almost all the work has been carried out by the population living adjacent to Mt. Tshiabirimu, who have taken time off from their usual work.

The Kikyo patrol post includes two chalets. Each chalet is semi-detached, and each half contains three rooms. The post will house 4 guards or trackers and their families. Each house is 9 m long and 4.5 m wide and has a balcony on each entrance.

Many people have participated in or facilitated the construction of the Kikyo patrol post, either physically or by providing moral support, and we are very grateful to them. Among these are: the chiefs of Ngitse-Kaliro, the youth of Ngitse and Kaliro, a group of the Seventh Day Adventists of Kaliro, the general population of Ngitse, Kaliro and Ngunuikira, etc., and the workers of the DFGF-E/Mt. Tshiabirimu Project.



Young people carry material for the construction of the patrol post – 5 hours walking distance!



D. R. CONGO

Equipment Needed

The rangers of the Virunga National Park and the Sarambwe Reserve urgently need:

- uniforms (in total: 200)
- rain gear
- tents
- dishes
- water bottles
- food for patrols in Sarambwe
- funds for the repair of vehicles
- at least 10 walkie talkies

We have already ordered the uniforms; they are being sewn in Congo at the moment. We have also promised rain gear and sweaters as well as food for patrols and funds for vehicle repair. If we receive additional funds, we will be able to provide more equipment - we would need at least 10,000 Euros more to provide the most urgently needed material.

Please help us to equip the Congolese rangers!

Although the Congolese rangers are our priority because they need material most urgently, it is not only in Congo where rain gear is needed - as the Rwandan national park authority has told us, the Rwandese rangers also need new clothing urgently. Unfortunately, we do not have any funds to help them, but with your help we may be able send this material to Rwanda. It would cost us about 3,000 Euros additionally.

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Above: Conservator Mashagiro with some of his rangers in Bukima, Virunga National Park

Below: Claude Sikubwabo Kiyengo, explaining the difficult situation in the Virunga National Park to Angela Meder

Photos: Christian Kaiser



Inauguration ceremony for the monument

A second activity that demonstrates that the DFGF-E (*Dian Fossey Gorilla Fund Europe*) project is reaching the heart of the community is Jean Claude

Kyungu's initiative to erect signs. This has the support of the administrative and customary authorities of Butembo and the other communities surrounding Mt. Tshiabirimu. The inauguration ceremony of these signs was a great success attracting 5,000 participants! The ceremony was accompanied by traditional folk dances and a concert.

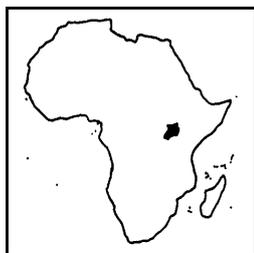
DFGF-E is grateful to the artist Sauveur Mulwana for his performance, to the musician Popla, to Makasi from tourism and to all the tribal chiefs; last but not least, thanks to the traditional dancers from Tshiabirimu.

Jean Claude Kyungu

Bwindi Gorilla Census

In April 2006, a new gorilla census commenced in Bwindi Impenetrable National Park (see also page 9). The funds are not yet sufficient to cover all the costs. and Alastair McNeilage asked us if we will cover part of the costs.

Please help us to support the fourth Bwindi gorilla census! It will not only tell us how the gorilla population has progressed, but also help to plan efficient conservation activities. We will of course report the results of the census when it is complete.



UGANDA

Bwindi-Impenetrable: 15 Years as a National Park

Bwindi Impenetrable forest, located in southwest Uganda, is perhaps best known as home to half the world's remaining population of mountain gorillas. It was initially gazetted as a forest reserve in 1932, and was managed as both a game reserve and forest reserve from 1961 to 1991. With increased pressure and illegal use and in order to protect the gorilla population and rich biodiversity, the forest was gazetted as a national park in 1991. It was also inscribed as a UNESCO World Heritage Site in 1994.

The park covers approx. 331 km² of extremely rugged terrain characterised by numerous steep-sided hills and narrow valleys, with an altitudinal range between 1,160 and 2,607 m. In addition to the mountain gorillas, Bwindi has exceptionally high biodiversity and many restricted-range and endemic species. While turning Bwindi into a national park was a positive step for its conservation, it by no means resulted in an overnight change in the protection afforded to the area. The conservation challenges were and still are great.

Bwindi is a small island of forest surrounded by some of the highest rural population densities in Africa (averaging around 300 people per km²). Approximately 100,000 people, nearly all subsistence farmers, live in the parish-



A view of the Bwindi forest

Photo: Christoph Lübbert

es immediately adjacent to the forest. Human use of the forest was extensive in the past with pitsawing for timber, mining and agricultural encroachment causing the greatest damage. Since Bwindi became a national park, all pitsawing and mining has been banned, and the boundaries of the park have remained intact.

Past hunting and logging still have an ongoing impact on the park, with greatly reduced canopy cover and few large herbivores; pressure on the forest remains high, and illegal use continues, albeit at greatly reduced levels. When the forest was gazetted, local communities lost access to forest resources on which many had depended for livelihoods. This gave rise to a great deal of conflict between the park and local communities, which threatened the existence of the forest and the ability of the park authorities to manage it. Furthermore, the legacy of human impact on the forest raises serious questions about the ability of it to survive and regenerate in the long term.

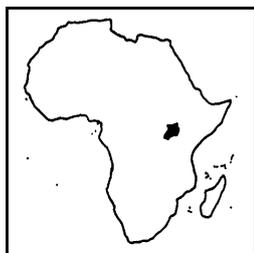
Since it became a national park, Bwindi has received more attention from conservation agencies than many other protected areas. Bwindi is now managed by the *Uganda Wildlife Authority* (UWA), and receives assistance from a number of major conservation partners. The *International Gorilla Conservation Programme* (IGCP) has supported park management, particularly in the area of gorilla-based ecotourism development. CARE's *Development Through Conservation* has supported community conservation, park management and planning and rural development. The *Institute of Tropical Forest Conservation* (ITFC – Mbarara University of Science and Technology) undertakes ecological monitoring and applied research, aimed at assisting park management, as well as providing technical advice and training opportunities. Lastly, the *Mgahinga and Bwindi Impenetrable Forest Conservation*

Trust (MBIFCT) provides sustainable funding for local community projects, park management, and research and monitoring.

A large proportion of the conservation initiatives in and around Bwindi have focused on reducing conflict between park and local communities through a combination of sustainable utilisation of forest resources, equitable sharing of benefits, and bringing local communities into conservation as active stakeholders. Through a process of negotiation between UWA and local communities facilitated by CARE, agreements have been reached whereby registered resource users in seven pilot parishes neighbouring Bwindi are permitted to harvest controlled levels of specific medicinal plants and weaving materials from designated "multiple use zones". In other parishes, similar agreements allow bee-keepers to keep beehives within the forest.

This programme has gone a long way towards improving relations with local communities. Some questions still remain as to whether the benefits received by communities will be enough in the long term to compensate for the costs of conservation which they bear, particularly the poorest farmers living next to the park boundary who suffer most from crop-raiding by wildlife. But the fact that they have been brought into the management systems of the park, and channels of communication and dialogue between park and surrounding communities have been opened up, has certainly been a major achievement of itself.

Another form of sustainable resource use (or at least resource use which aims at sustainability) which has been developed is gorilla-based ecotourism. Since 1993, small groups of tourists have been taken to see habituated groups of gorillas. Tourists pay a good deal of money (currently US\$ 360 per person per one hour visit, in addition to the park entrance fees) for



UGANDA

the privilege, and this generates considerable revenue for UWA, as well as bringing additional money into the local economies. Currently four groups of gorillas are habituated for tourism, with a maximum number of 8 tourists visiting per day. At full capacity of 11,680 foreign tourists per year, this translates into a maximum of US\$ 4.2 million annual income.

While gorilla tourism has been generally regarded as a great success as a conservation strategy in generating revenues and providing financial justification for conservation, we do not yet know all the impacts on the gorillas themselves. Consider that each group of gorillas could be visited by nearly 3,000 different people each year. Evidence from the Virungas, where gorilla tourism has been underway in Rwanda and Democratic Republic of the Congo for over 20 years, indicates that groups visited by tourists have at least as many immatures as unhabituated groups and have not suffered any serious impacts. Indeed, the close monitoring received by the gorillas that are followed each day for tourism or research probably brings significant benefits, in terms of protection and veterinary care. Nonetheless, gorillas are likely to be susceptible to human diseases, and recent research has shown that the presence of people does have an impact on their behaviour, with reduced rates of feed-

ing and frequent responses to peoples' actions. We still know very little about the effects of these threats, although ongoing research in Bwindi is further investigating the impacts of gorilla tourism and habituation.

Another benefit to the local communities from tourism is revenue sharing, in which a portion of the UWA revenues are shared with local people to support specific community development projects. In 2006, approximately US\$ 80,000 will be divided among the 21 parishes surrounding Bwindi. This has an important impact in demonstrating the value of conserving Bwindi and its gorilla population to the people living alongside the gorillas.

As already mentioned, the first forest conservation trust fund in Africa was set up in southwest Uganda with funding from GEF, USAID and the Royal Dutch government. MBIFCT's goal is to strengthen conservation through direct support to park management and applied research, and by relieving pressure on the park and providing alternative benefits to local communities through support of small scale development projects. As it works with local communities, the trust is a constant reminder to people that the benefits which they are receiving have been made possible because of the existence of the parks, and the support the international community is willing to give to their conservation.

Research is another important component of conservation by providing information to make informed management decisions. Research conducted by the ITFC is addressing some of the key issues for park management, including assessments of the sustainability of multiple use and tourism programs, studying key issues for the conservation and management of the gorilla population, and improving our understanding of the relationship between conservation and development in the area.

More academically based research on the ecology and behaviour of the Bwindi gorillas is showing that they are a unique population and emphasizes the diversity of gorilla behavioural ecology.

In conclusion, Bwindi has been a pioneering example of different conservation and sustainable use strategies, but can it be regarded as a success? Do we know if the future of the forest is assured? Certainly, the outlook for Bwindi is much better now than 15 years ago. A gorilla census in 1997 found 300 gorillas in Bwindi, which is approximately the same number as there were when the park was gazetted in 1991. The population increased to approximately 320 gorillas in 2002 and a census being conducted in April–July 2006 will show if the population has increased even further. Surveys of the knowledge and attitude of local people in recent years have shown a definite improvement in support for conservation of the forest among local people. Despite active law enforcement efforts, however, illegal activities continue and many people still feel that the costs of conservation outweigh the benefits. While the gorilla population is stable, if not increasing, there is a significant area of habitat in the park which they do not yet occupy. Crop-raiding, including by gorillas, continues to be a bone of contention between park and local communities. Clearly, many problems remain to be solved.

Given the small size of Bwindi, its immense biological richness and significance, the history of disturbance to which it has already been subjected, and the intense pressure from surrounding people, we must be exceedingly careful in how we manage the resources it contains. We clearly cannot ignore the interests of the surrounding human population, and conserving the forests without their support would be almost impossible. Despite all the different initiatives which have made



A blackback Photo: Martha Robbins



UGANDA

great progress in recent years in increasing support among local communities for conservation of the forest, we still have some way to go before we can claim to have found this balance and can rest assured that its future is safe. While there may be room for cautious optimism in Bwindi, there is no room for complacency.

*Alastair McNeilage
and Martha M. Robbins*

Human–Gorilla Conflict Resolution (HuGo) – the Uganda Experience

This study was conducted in the Bwindi Impenetrable National Park, located in southwestern Uganda between latitude 0° 53' to 1° 8' south and longitude 29° 35' to 29° 50' east (UWA 2001). It covers an area of 321 km² on the edge of the Western Rift Valley occupying the highest blocks of the Kigezi Highlands. The park lies along the border of the Democratic Republic of the Congo and is about 29 km by road to Kabale town and 30 km north of Kisoro town. Adjacent to the park are 21 parishes.

Historically, local communities have used Bwindi forest as a source of timber, minerals, non-timber forest resources, game meat and agricultural land. These activities led to continued significant losses of forest cover up to the late 1980s. Since 1991, the forest's tourism potential (mainly gorilla tourism) has been demonstrated as an important additional direct economic value.

According to Weber & Vedder (1983, cited in Macfie 2000), the reduction in lower altitude forests reduced the gorillas' home ranges significantly. Further, Butynski (1984; cited by Macfie 2000) indicated that the presence of some mosaic forest patches left outside the park boundaries, coupled with the growing of new crops palatable to

gorillas, like bananas, favoured the retention of the areas within gorillas' home ranges.

The result was that there was spatial overlap of human activities and gorilla home ranges outside the park boundaries, and the gorillas destroyed peoples' crops, stopping people from working in their gardens and at times inflicting injury to the people: thus the human–gorilla conflict.

It was only after the *Uganda Wildlife Authority* (UWA) started earning money from gorilla tourism that the communities started demanding compensation for the losses incurred due to gorilla crop raiding (Macfie 2000). Attempts were made to minimise the conflict by giving a token of appreciation to the farmers who did not harm the gorillas during crop raiding, but these failed because of gross abuse of the procedures; besides, it was found to be unsustainable and also contravened the UWA policy of compensation.

Why HuGo? It was envisaged that the collapse of the compensation scheme was likely to have some negative impacts on the conservation of the critically endangered mountain gorillas, among them notably the following: there would be long-term negative community attitudes towards conservation of mountain gorillas, and also perhaps increased possibilities of transmission of communicable diseases from humans.

In February 1998, a workshop of key stakeholders to discuss the problems came up with several solutions, including:

- a) education,
- b) chasing,
- c) problem animal levy (levy on gorilla permits),
- d) hiring gorilla monitor response teams,
- e) development of a policy by UWA on problem gorillas,
- f) land purchase on the forest edges.

Solutions a, b, d and f have since been piloted in Uganda. The HuGo aims to increase the level of community support for gorilla conservation by monitoring gorilla group movements, and responding whenever gorillas move out of the park boundaries.

When HuGo? The implementation of the February 1998 workshop recommendations in Uganda began in September 1998 (Macfie 2000). Gorilla Monitoring and Response Teams (GMRTs), which follow gorillas whenever they range outside park boundaries and gently chase them out of fields and out of harm's way, were formed in Mukono and Nteko parishes with the primary aim of chasing gorillas whenever they would roam out of the Bwindi Impenetrable National Park (BINP).

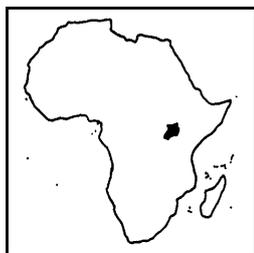
The chasing was not very successful in Nteko because the Nkuringo gorilla group was under habituation and there were many wild groups. A decision was consequently reached to buy the park edge land in Nteko, the Nkuringo buffer zone. Education has been an ongoing activity since September 1998.

What Has Been Achieved?

Capacity building of GMRTs. There are 42 GMRTs in 9 villages surrounding BINP. They received training, and equipment and food rations.

The GMRTs had initial training in chasing methods, which included ringing bells, whistling, shouting and herding. They also had training in fire management and business development. Additional training was to be provided in GPS use, intelligence gathering and communication skills.

The *International Gorilla Conservation Programme* (IGCP) and UWA supplied equipment to the GMRTs, ranging from gumboots, rain gear and pangas to GPS. In the calendar year ending 2005, UWA supplied them with 4 GPS while IGCP supplied them with 42 pairs of gumboots, 50 sets of rain gear and 30 pangas.



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GMRTs in their biannual meeting

In addition to equipment, UWA provides food rations (beans and maize flour) to the GMRTs whenever they are on duty.

The GMRTs from the 9 villages hold biannual meetings, facilitated by IGCP and UWA. During these meetings, they share experiences on their work and the challenges, and chart a common way forward for the next 6 months. Training has also been conducted during such meetings.

Monitoring system and evaluation of chasing methods. A HuGo monitoring system was put in place. Every time the GMRTs go out, they fill out a monitoring sheet. The major data on this form include the GPS point, the type of crop eaten and to what extent, any injuries encountered during the chasing, the chasing methods used and the GMRT team composition. Using that data, trends (number of times out, crops destroyed and areas frequently visited) are analysed.

Using the same data, an evaluation was done of the methods frequently used and their success. Results indicate that the following methods are the most commonly used and are most effective when used in combination: shouting, making a cut line to stop further forward movement, and whistling.

One of the fears of chasing gorillas was that they might get habituated to chasing methods (Macfie 2000). The results of the evaluation are therefore used to assess which methods are frequently being used and which the gorillas resist, so that new chasing innovations can be put in place.

The efficiency of the monitoring system was still limited by inefficient data sheet filling. The GMRT required training in the proper handling and filling of datasheets.

Health and sanitation. The GMRT volunteers, by the nature of their work, are always in constant touch with the gorillas. If levels of hygiene and sanitation in their homes are inadequate, the disease transmission risk to the gorillas increases. For this reason, a health and sanitation survey was carried out in the homes of all the 42 GMRTs in November 2005.

The results indicate poor performance in sanitation and personal hygiene. Most (71%) took a bath less than 3 times a week and over 90% had no refusal disposal means, while 69% had pit latrines that were less than 5 m away from their homes.

Access to clean and safe water was another limiting factor in personal hygiene; only 2.4% of the households had access to safe and clean water at a distance of less than 0.5 km, possibly explaining why most household members went many days without a bath.

Assuming an average of 7 persons per household, 204 persons out of 297 (81%) over all households suffered at least once from communicable diseases. This constitutes a high risk of such diseases spreading to gorillas high.

Success in chasing gorillas back into the park, therefore, was highly compromised by this poor state of hygiene and sanitation. We therefore launched a competition to motivate the GMRTs to improve their hygiene and sanitation. There will be biannual competitions for prizes rewarding the most improved and best performance positions.

We shall use the results to appeal to local government intervention, as it is their mandate to ensure good health and sanitation within the communities. We hope this will be possible as we involved the local health assistants in the survey and have shared the results

with them. The health assistants will also be the key persons in the health and sanitation completions.

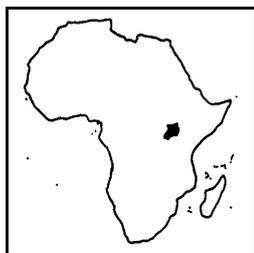
In addition, we would wish to have these GMRTs be a model for the link between public health and conservation for the improvement of public health initiatives within communities surrounding the gorilla parks and beyond.

Enterprise. Gorilla Monitoring and Response Teams are community volunteers; they have been doing this work since they were selected by their communities in September 1998. To keep their morale up, AWF/IGCP gave each member a grant of 400,000 Uganda shillings for a business venture, so a total of 16,800,000 US\$ (approx. 9,333 US\$) was disbursed to the 42 members. Projects included rearing of sheep, goats and pigs, and some have bought cattle.

During the household surveys conducted in November 2005, the grant assessment was also carried out. Results indicated that 29.1% of the grant was invested in domestic problems like sickness and bride price. We learned from this that the GMRTs required more training in business development.

The GMRTs agreed in their December 2004 meeting to form a community-based organisation (CBO) which would unite them and also work as a vehicle for development. Through this CBO, they have been able to pull together resources (mainly financial) on a monthly basis. The collection from the group is given to one or two individuals on a rotational basis. Some have used the money to buy more sheep and goats, thus improving their business ventures and livelihoods, and consequently their morale for voluntary gorilla chasing improved.

Nkuringo buffer zone. This is a 12 km by 350 m stretch (4.2 km²). It consists of a 2.4 km² stretch that will remain intact, while the remaining 1.8 km² on the outer part would be used by the communities to grow crops



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which are not palatable to the gorillas and other problem animals. A number of such crops have been piloted. These include:

- *Artemisia annua*. This is an annual crop that provides an active ingredient for the manufacture of antimalarial drugs.
- Wheat. A variety that is not eaten by birds was to be grown in rotation with *Artemisia annua*.
- Pasture. Under this programme, 8 in-calf heifers are to be given to households in the frontline communities on a revolving basis. The first beneficiaries would give the first calf to the second beneficiaries and so on.

The effectiveness of these crops in keeping away problem gorillas and other problem animals from the communities is yet to be assessed.

If these crops are found effective, they would contribute greatly to the reduction of the human–gorilla conflict as well as the improvement of the peoples' livelihood. We hope that such a combination will do a great deal to increase community support for conservation.

Other activities tried out in the buffer zone are the growing of Mauritius thorn hedge that would form a barrier to the problem gorillas and other animals, and the removal from the buffer



Banana field after the visit of a gorilla group

of exotic plants that are palatable to the gorillas.

Lessons Learnt

- The GMRT are a widely recognised institution in the communities acting as a bridge for conflict resolution over gorilla raiding.
- Conflict resolution solutions developed by all stakeholders in a participatory manner are sustainable.
- The association of the GMRTs has increased their organisational capacity and sense of belonging/ownership.
- The volunteer spirit of the GMRTs can only be kept moving through motivation schemes that improve household livelihoods.
- Community-based solutions need a lot of patience and tolerance.
- The skills of the GMRT in monitoring need to be improved if the success story of HuGo is to be adequately recorded.

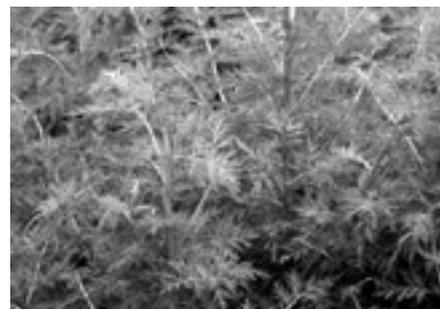
Challenges

GMRTs

- Incentive to keep the GMRTs motivated over a long period of time in a poverty stricken environment was not sustainable.
- Balancing livelihoods and chasing when the gorillas stay out for long periods left the GMRT's spirit of volunteerism wanting.
- Ensuring high health standards (hygiene and sanitation) in their homes should reduce the risk for cross infection of contagious diseases with the gorillas.
- Active training in gorilla regulations and GPS use is necessary.
- Ensuring entrepreneurship skills may require a lot of work.

Buffer zone

- The presence of forest patches with abandoned banana plantations outside the buffer zone still attracts gorillas, and they are hard to chase from such areas.



Artemisia annua

- The socio-economic implications of purchasing land from the communities are not known – sustainability?
- Active involvement of the communities in buffer zone management is an uphill task.

Conclusion/Recommendations

The HuGo pilot interventions employed in Uganda are a great success, but the following areas should be improved:

- Monitoring of data collection and analysis.
- Sustainable motivation scheme for the GMRTs are put in place.
- The health and sanitation of the GMRTs homesteads was improved to the level where they would act as role models in their communities.
- The socio-economic impacts of the land purchase for the buffer zone was done and evaluated.

*James Byamukama and
Stephen Asuma*

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CROSS RIVER

Trip to Nigeria

From 13 January to 17 February I visited Nigeria. Up to 1983, gorillas were believed to be extinct in Nigeria; in that year the Cross River gorilla was rediscovered, although it is still critically endangered. This is both the northernmost as the westernmost occurrence of gorillas.

The Cross River gorilla was first described in 1904 by Paul Matschie of the Humboldt University Zoological Museum in Berlin, who classified them as a new species, based on the characteristics of a short skull, short molar row, palate shape, and skull base shape. Decades of disagreement followed until the 1990s when Esteban Sarmiento and John Oates definitively confirmed it as a valid subspecies, *Gorilla gorilla diehli*. There are less than 300 individuals left, making it the most threatened gorilla subspecies. Only one single animal is in captivity at the moment, a confiscated gorilla living at the Limbe Rescue Centre in Cameroon together with rescued western lowland gorillas.

I visited above all the projects supported by *Berggorilla & Regenwald Direkthilfe*. In Calabar, I met Andrew Dunn, with whom I had exchanged many emails in the past; he had already put together a full program. I also met Chris Agbor, the Permanent Secretary of Forest Commission for the Cross River State, and we discussed the protection and possible further development of the park. I learned that both the Afi and Mbe Mountains are now very well protected thanks to the reliable work of rangers and scientists, whose continuing presence prevents poaching in both areas.

Our first destination was the Afi Mountain Wildlife Sanctuary. In May 2000, part of the existing Afi River Forest Reserve was established as a wildlife sanctuary, mainly to protect the Cross River gorilla. The *Wildlife Conservation Society* (WCS), for which

Andrew Dunn works, has been active in that area since 1986. The sanctuary covers 32 km² (lying within the forest reserve of 380 km²), approximately 1,300 m above sea level.

Reaching Afi is not easy: it is an impenetrable area with steep slopes, which has surely helped the survival of about 30 gorillas there, but makes working there rather difficult. The area is characterized by a long dry season, during which the animals find fewer fruits and roam the forest on a north-south axis. Every 3 months WCS facilitates a sweep census when biologists and rangers distributed at different camps survey the whole area and record all nests and faeces they encounter. I was lucky to be at Afi during such a census, and met among others WCS research officer, Inaoyom Imong and the Conservation Coordinator of the Afi Mountain Wildlife Sanctuary, Ubi Sam. Usually biology students from the nearby University of Calabar join those censuses which gives them a good opportunity to gain field experience. They all participated with great enthusiasm and interest.

Another very important area is Mbe, since it represents a corridor between Afi and the Okwangwo Division of the Cross River National Park (CRNP). Without official protection status it is up to the WCS eco-guards to patrol this forest and thanks to their work there has not been any gorilla poaching in



New buildings at the Afi ranger camp

Photo: Ubi Sam



Andrew Dunn Photo: Denise Nierentz

the past 5 years. The management of this area is carried out by the surrounding villages. Currently the demarcation of borders for a core protected area is under way. SPACE (Sustainable Practices in Agriculture for Critical Environments) is doing a considerable amount of education in those villages. Since 1990 there has been a proposal to integrate Mbe into the national park, but so far no action has been taken to implement this. Population increase and thus pressure on the forest are the main problems at Mbe.

Berggorilla & Regenwald Direkthilfe financed the renovation of ranger posts at Mbe and Afi. The building materials needed to be carried up the mountains one by one, and when I saw those steep slopes I began to understand why this has taken quite some time; but as all the materials have now arrived at the site it will not take long to complete the job. The Afi ranger post has been completed in the meantime.

The Cross River National Park is a so-called biodiversity hotspot, meaning that it is an area with many species, including many endemics; it is extremely endangered because of poaching, clearing, road construction and population pressure. The park consists of two



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parts: the Oban Division in the south (approximately 3,000 km²), which is connected with the Korup National Park in Cameroon, and in the north the Okwangwo Division (approximately 640 km²), connected to the Takamanda Forest Reserve in Cameroon. The two parts are separated by 63 km, and taken together they contain 80% of all wild primate species in Nigeria. In 1991, the area was recognized as national park.

Alhaji Abdulsalam, the director of CRNP, arranged for the rangers at Anape to show us the area around their region. Kolmården Zoo has funded the construction of a ranger post at Anape which I was interested in visiting. There are still numerous villages in the forest which makes effective protection enormously difficult. It is therefore important to continue supporting education and protection efforts throughout CRNP.

Anape is near Obudu, which is outside of the national park. In 1959 a first class hotel was established here, which has now been further extended by luxury lodges. Fulani living in that area still burn the vegetation from time to time to provide grass for their cattle. Fortunately it is also in the interest of the hotel operators to preserve natural habitat around the Obudu Plateau, as the surrounding forests are a tourist destination. As the area is huge with many hills and valleys, only a fraction can be controlled from Anape and there are plans to establish another ranger post in Bumaji. This would also give locals an alternative way of living and there-



Anape ranger post

Photo: Denise Nierentz

Bumaji: Construction of a New Ranger Post



Address for cheques:

Berggorilla & Regenwald Direkthilfe
c/o Rolf Brunner
Lerchenstr. 5
45473 Muelheim, Germany

To improve conservation in the Cross River National Park, the construction of a ranger post in Bumaji is desirable. After having supported the construction of a ranger camp in Afi (p. 13) and Mbe, we promised to contribute to this important conservation measure.

We need your support for this effort!

Bank Account:

Account number 353 344 315
Stadtsparkasse Muelheim,
Germany
Bank code number 362 500 00
IBAN DE06 3625 0000 0353
3443 15
SWIFT-BIC SPMHDE3E

fore help to reduce exploitation of natural resources; they could find jobs as rangers and work on the construction of the ranger station.

Last year *Berggorilla & Regenwald Direkthilfe* donated tents, backpacks and sweaters for the rangers. In February a new Director of CRNP was appointed; in Nigeria Park Directors are regularly rotated. Andrew Dunn will discuss further conservation efforts with the new man in charge, Steven Haruna.

As reported in the last *Gorilla Journal*, Nigeria, which was one of the first countries to join the international trade agreement CITES in 1973, is temporarily being excluded from it because of numerous illegal smuggling incidents. It is thus essential to continue to work for protection of the remaining areas and the animals living there; *Berggorilla & Regenwald Direkthilfe* has pledged to support further conservation efforts in Cross River National Park in 2006.

Denise Nierentz

Investigating a Recent Report of the Killing of "Gorillas"

In February 2006 a report was received at the *Wildlife Conservation Society* (WCS) office in Calabar that a gorilla had been killed at Bumaji, a group of remote villages near the northwestern corner of the Okwangwo Division of Nigeria's Cross River National Park, some 180 km from Calabar. The hunters of Bumaji have a long history of hunting gorillas, and with fewer than 100 Cross River gorillas remaining in Nigeria this was serious news indeed. It was also an area where we had recently been attempting to assist park authorities in improving levels of protection. For instance, in 2005 a ranger post was constructed at Anape, roughly 10 km east of Bumaji, with funding assistance from Kolmården Zoo. We wasted no time in passing the report to the Director of Cross River National Park, and provided some resources for park rangers to investigate the matter.



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Park rangers subsequently went to Bumaji and, after conducting inquiries, quickly arrested a man who apparently admitted killing two gorillas inside the park in October 2005. The man, a well-known hunter, was brought to the Park Headquarters in Akamkpa for further investigation, but he subsequently denied any involvement in the killing and was later released on bail. The case has yet to come to court, and unfortunately with no evidence such as a skull or skin available, any prosecution is unlikely to be successful.

Meanwhile doubts began to be expressed concerning the authenticity of the reported gorilla deaths. The name "gorilla" is also applied to chimpanzees in Nigeria, and information of all kinds can be notoriously unreliable. It was suggested to us that the poaching incident may have been reported to the authorities as a result of some local village-level feud. Others expressed doubt as to the validity of the man's original confession. If gorillas were indeed killed in October 2005, why did the news only leak out in February 2006? In an attempt to gather more reliable information, therefore, we arranged our own enquiry, acknowledging that this incident happened some 5 months previously and it would be difficult to gather any fresh evidence.

Jonas Attah (WCS field assistant, Mbe Mountains) and Columbus Ikpe (*Nigerian Conservation Foundation*, Becheve Nature Reserve Manager) visited the area to further investigate the matter. Unfortunately they found local people to be hostile and many had already sworn an oath not to divulge any information about the incident to strangers. The two investigators were advised to leave the community or risk personal injury. Under such circumstances it was hardly surprising therefore that only scanty information was made available to the team.

What Attah and Ikpe were told was that a pregnant woman had entered the

national park to collect edible leaves (*Gnetum africanum*) and was disturbed, or perhaps even chased, by two large animals, probably apes. A hunter who happened to be nearby heard her screams and came to her aid, killing both animals. These animals were then butchered in the forest, with various body parts carried back to the village for sharing amongst family members and for sale. None of these body parts were subsequently found in the village.

An accurate description of the animals was not available but they were said to have reddish hands and brown faces. Based on this evidence we think that the animals killed were possibly chimpanzees and not gorillas, although it is likely that we will never know for certain. Like the Cross River gorilla, the local form of chimpanzee (*Pan troglodytes vellerosus*) is also regarded by IUCN as critically endangered.

What is more certain is that levels of protection for wildlife in the Okwangwo Division of Cross River National Park remain inadequate. With only a handful of ranger posts situated along the park boundary, the majority of rangers are stationed at the Divisional Headquarters in Butatong. Given the fact that the park is remote and inaccessible, and has few functional vehicles available, large areas receive little attention at all.

Soon after this unfortunate incident a new director of Cross River National Park was appointed. The new Park Director, Steven Haruna, has made improving community relations a priority, recognizing that support and cooperation from surrounding communities is essential for the long-term future of the park. He has already visited the area in order to restore peace and stability and agreed with local community leaders to establish a ranger post in the Bumaji area as soon as possible. It was also agreed to recruit a number of community rangers to assist the park's gorilla

la monitoring unit and to create a "local advisory committee" to improve dialogue between local communities and park authorities.

WCS is working closely with the new Director and his senior staff to produce a management plan for the park. The management plan aims to make improved protection for the park's remaining gorillas a top priority. Levels of protection in the park can be improved with external assistance and support. Obviously park rangers need field rations, equipment and better training, but experience has shown us that effective protection also requires proper supervision, planning and high levels of discipline. Ranger posts are needed so that rangers are located in the most strategic positions along the park boundary, and from where they can easily access the interior of the park itself.

We have recently secured funding from the WWF *African Great Ape Programme* and from *Berggorilla & Regenwald Direkthilfe* to help the park build a ranger post at Bumaji. We are also working closely with the *U. S. Fish and Wildlife Service* and *Fauna and Flora International* to improve levels of infrastructure at other key Cross River gorilla sites in Nigeria.

A third international workshop on the conservation of the Cross River gorilla is planned for April 2006. During this workshop we will formulate priorities for a Conservation Action Plan for the Cross River gorilla to complement those already produced by IUCN for West African chimpanzees and Central African apes in 2005. The workshop will also review proposals for the creation of a trans-boundary protected area spanning the Okwangwo Division of Cross River National Park in Nigeria and Takamanda Forest Reserve (currently proposed as a national park) in Cameroon.

Wildlife Conservation Society



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The Cross-Sanaga Gorillas: the Northern-most Gorilla Populations

The gorillas north of the Sanaga River in Cameroon inhabit a fascinating region. The Cross-Sanaga landscape is one of the most biologically diverse expanses in Africa, with many areas showing evidence of having been forest refuges during the last ice age. At the same time, fertile soils throughout much of the region have encouraged human population growth and resettlement, so that it is also one of the most highly populated areas in West-Central Africa.

Gorilla populations throughout the northern section of this region are extremely patchy, scattered into several subpopulations and restricted, in most cases, to the remaining areas of higher altitude forest where human pressures are less. It is likely that this habitat fragmentation is a relatively recent phenomenon, although some particularly fertile areas of the northwestern area of Cameroon have been farmed intensely for several hundred years. It is certainly true that habitat fragmentation and degradation are still increasing, although the advent of several conservation initiatives in the past decade is now bearing fruit and there is now a more positive outlook for some areas.

There are three main gorilla populations north of the Sanaga river – the highly fragmented subpopulations of Cross River gorillas straddling the Cameroon-Nigerian border; the Ebo gorillas, probably a single population of gorillas less than 100 km north of the Sanaga river; and the Deng-Deng gorillas, in the area between the Lom-Pangar river system and the river Yong, west of Belabo.

The Cross River Gorilla Population in Cameroon and Nigeria

The Cross River gorilla *Gorilla gorilla diehli* is classified as critically

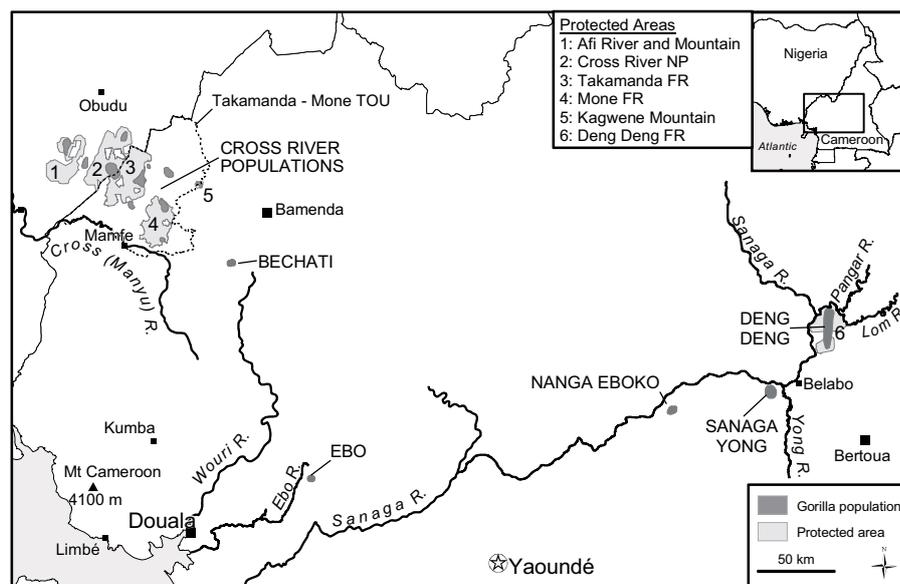
endangered, with a total population of less than 300 individuals, split into at least 10 subpopulations. Primarily located in highland forest, Cross River gorillas throughout their range are scattered across a broad landscape which totals approximately 3000 km². Despite the fragmentation of this population, there still exist large tracts of forest linking subpopulations which, if they can be maintained, will continue to provide access routes to connect groups as well as accommodating any future range expansion which could support a growth in population.

The main threats to the future survival of Cross River gorillas are hunting, habitat loss and fragmentation. Through community education outreach activities and increased law enforcement measures, hunting over the past 7 years has become almost a secondary threat. Gorilla hunting has not been totally eradicated and a recent report from Cameroon suggests that one animal was killed in the last 6 months. This appears to be an isola-

ted case and the first report received since 2003 in Cameroon, but with such a small population even the killing of one individual is still a major cause for concern.

Mount Cameroon is the highest peak in West-Central Africa and is part of an extensive chain of volcanic activity from Bioko, the offshore island of Equatorial Guinea, northwards to the Bamenda Highlands. The northern section of this mountainous region provides habitat to the largest proportion of Cross River gorillas.

Cameroon has approximately seven of the Cross River gorilla subpopulations, one of which is a true transboundary population, spending time in both Cameroon and Nigeria. The largest of these is believed to be around 25 weaned individuals and the smallest subpopulation may total as few as 10–15. The most current estimate of the total population within Cameroon is around 180–200. Presently, no Cross River gorilla subpopulation in Cameroon is located within a protected area



Gorilla populations in Cameroon. Populations are indicated by capitals. Protected areas include national parks (NP), and forest reserves (FR).

Map: Daniel Slayback



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A view of the Ebo forest

Photo: Bethan Morgan

although there are plans underway to rectify this.

Recently, a further sub-population of gorillas was located in the Bechati-Fossimondi-Besali forest, a non-classified forest area bordered by a long-term logging concession. This gorilla sub-population is likely to be small. Current research is being conducted by a Cameroon-based NGO, the *Environment and Rural Development Foundation* (ERuDeF), with funding from *Fauna and Flora International* (FFI) and the Taiwan government.

The other three forest blocks inhabited by Cross River gorillas are in Nigeria. Two of these are located inside protected areas: the Cross River National Park, which was established in 1991, and the Afi Mountain Wildlife Sanctuary, established in 2000. The other, geographically intermediate, population is located within the Mbe Mountains where negotiations are underway to establish a community-owned protected area. Preparation of a management strategy for the Cross River National Park is being undertaken by the

Wildlife Conservation Society (WCS), working in conjunction with park management, and efforts over the past few years have been on monitoring, law enforcement and direct protection.

In both Cameroon and Nigeria, studies of gorilla ecology have been conducted. Gorilla monitoring is currently undertaken on both sides of the international border. In Nigeria all three subpopulations and the transboundary population are monitored on a regular basis and in Cameroon there are imminent plans for a recensus of all subpopulations (the last estimate of the entire Cameroon population was conducted in 2001; J. L. Groves 2002).

The Gorillas of the Ebo Forest

The Ebo forest is situated just north of the Sanaga River and covers almost 1,500 km² of rugged, boulder-covered mountains and steep valleys, with undisturbed closed canopy forest on the mountain tops and disturbed old secondary vegetation at the valley floors (Morgan 2004). The Ebo Forest Research Station was established in the heart of the forest in April 2005, with the aim of studying the small gorilla population as well as the ten other diurnal primate species existing at the site.

Evidence has been found of gorillas in the central region of the forest where there is at least one group of up to 12 weaned gorillas, and a solitary male gorilla. Recently, ground nests have also been recorded to the west of the Ebo river, 22 km west of observations in 2002 (Morgan et al. 2003). It seems likely that this subpopulation of gorillas is very small.

These gorillas are under threat from hunting pressure, which is particularly high in this region due to its proximity to large cities such as Douala and Yaoundé. On February 3rd 2006, gorilla meat originating from the Ebo forest was sold in Douala. This is the first known poaching of a gorilla since the

establishment of the research station. At the time of writing, no one has been apprehended for this crime.

The Gorillas of the Belabo Region

Approximately 320 km northeast of the Ebo forest are the forests of the Belabo region. Here, a population of gorillas was surveyed by Eno Nku and Sunderland-Groves in 2001/2002 (Fotso et al. 2002), and appears to be restricted to three forest blocks in the region – the Deng-Deng Forest Reserve, the area around the Sanaga-Yong chimpanzee sanctuary and a small patch of forest situated to the northeast of Nanga Eboko.

Transect surveys in the three forest blocks indicated significant gorilla densities, particularly in the Deng-Deng Forest Reserve, and good numbers of chimpanzees. However, as in other regions, the main threat is hunting for the commercial bushmeat trade.

Taxonomy

Sarmiento and Oates (2000) confirmed the Cross River gorillas as a distinct sub-species based on a comprehensive analysis of cranial material in museum collections. An additional 34 Cross River gorilla crania (10% of the total surviving population) have been collected by Sunderland-Groves and co-workers over the past decade, and it is hoped that these additional crania, all of which were collected without payment, can be used for future morphological studies.

The one cranium in existence from the Ebo region suggests more morphological similarities with western lowland gorilla populations south of the Sanaga River than with the Cross River gorillas. Interestingly, a recent article in *Gorilla Journal* (C. P. Groves 2005) has raised the possibility that the Ebo gorillas may be a relict population of a formerly more widespread population living north of the Sanaga River, based on Discriminant Analysis of the Ebo cranium comparing it to Cross River,



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Cameroon coast and Cameroon plateau gorilla crania.

Genetic work is currently being conducted on many of these gorilla populations. Microsatellite DNA analysis from faecal samples of the majority of Cross River gorilla subpopulations is being undertaken by Rich Bergl of Central University of New York in collaboration with the Max Planck Institute for Evolutionary Anthropology in Leipzig. Faecal samples from the Ebo forest gorillas are being analysed by Oliver Ryder and colleagues at Conservation and Research for Endangered Species (CRES), at the *Zoological Society of San Diego*, and hair samples are being analysed by Nicola Anthony of the University of New Orleans.

Conservation Outlook

With ever increasing human development activities, conservation in this region is challenging, but solutions must be sought.

Over the last year, two areas inhabited by Cross River gorillas in Cameroon have been proposed for new or increased protection status – the Takamanda Forest Reserve (currently a production forest) has been proposed as a National Park and the Kagwe-ne Mountains as a Gorilla Sanctuary. Once created, three of the seven Cameroon Cross River gorilla subpopulations will be located within these protected sites. Proposals to protect the remaining subpopulations located on the periphery of Takamanda, the Mone Forest Reserve and the Mbulu forest, are under review within a larger landscape approach through the creation of a Technical Operations Unit. This initiative has been developed through a consortium of partners consisting of the Government of Cameroon, WCS, GTZ, the German Development Bank KfW and others. This landscape plan will allow for both protection and sustainable use of forests, ensuring the unique biodiversity is maintained.

In Nigeria two of the three forest blocks where Cross River gorillas occur are already officially protected and, as mentioned above, there are plans underway to create a community-led conservation effort for the remaining area, Mbe.

Although research and monitoring continue in both countries, emphasis over the past few years has shifted to direct conservation action. The WCS Cross River gorilla conservation program supports range state governments working with local communities to increase the survival prospects of Cross River gorillas and other endangered species through supporting law enforcement efforts, community education outreach programs and management planning.

The establishment of a permanent research station in the Ebo forest in early 2005 has already yielded some protection against hunting in the centre of the forest, although there is increasing pressure from hunters to recommence their activities in the research area. The Ebo forest is due to be gazetted as a national park by the Government of Cameroon in 2006, with technical assistance from WWF Cameroon Coastal Forests Programme, which aims to achieve active protection of the area, which is currently under severe hunting pressure, especially at its periphery.

Plans are currently being reviewed for the status and management of the areas encompassing the Belabo gorilla population by the Government of Cameroon.

In summary, the northernmost gorillas in existence are split into numerous small, isolated subpopulations. The threats from hunters, together with the increasing pressures posed by habitat fragmentation and degradation, lead to an uncertain future for these gorillas. We hope that efforts by range state governments and the conservation community in the Cross-Sanaga region,

supported by the international community, will gather strength, and that these important gorilla populations will have a secure future.

*Bethan J. Morgan and
Jacqueline L. Sunderland-Groves*

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The Ebo Forest Research Project is funded by Conservation and Research for Endangered Species (CRES) of the Zoological Society of San Diego, the United States Fish and Wildlife Service through the Great Ape Conservation Fund, the Margot Marsh Biodiversity Foundation and the Offield Family Foundation.

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Ebola: from Bats to Gorillas

The Ebola virus (EBOV), together with Marburg virus, belongs to the *Filoviridae* family, a group of linear RNA viruses. Four different genetic subtypes have been described in Africa (*Sudan ebolavirus*, *Zaire ebolavirus*, *Ivory Coast ebolavirus*) and in Asia (*Reston ebolavirus*). Ebola remains one of the most mysterious emerging diseases, although very important advances towards elucidating its origins and its mode of transmission have been made in recent years.

Outbreaks in Great Apes

Ebola causes severe hemorrhagic fever in humans and apes. After an incubation period of 4–7 days, the infected person rapidly develops high fever, diarrhoea, vomiting, respiratory disorders and haemorrhaging. Death can occur within a few days. The case-fatality rate is about 80% for the *Zaire ebolavirus* subtype, which is the most pathogenic strain in Gabon, Republic of the Congo (RC), and Democratic Republic of the Congo (DRC).

In Africa, there have been 15 outbreaks of Ebola with 1,300 deaths from 1,850 infected persons. Accidental transmission of the disease to humans occurs by direct contact with infected dead animals, mainly great apes. Chimpanzees and gorillas are very vulnerable to Ebola virus infection. During Ebola outbreaks in 2001 and 2003 in the Gabon/RC region, a considerable number of ape carcasses were recovered, and it is now well established that the Ebola virus was responsible for the rapid and dramatic decline of great apes in areas where Ebola outbreaks occurred. Wild populations of gorillas decreased by 50%, and those of chimpanzees by 80%, as a result of these outbreaks. Similarly, in the Minkebe forest block in northeastern Gabon

near the border with Cameroon, gorilla and chimpanzee densities fell dramatically between 1994 and 1998.

Two hypotheses have been proposed to explain the transmission of EBOV in wild great ape populations. The first is that the virus spread between gorillas from the same or from neighbouring groups, creating a single wave outbreak spreading outward in the forest. The second hypothesis is that large-scale, independent viral transmission occurred from a reservoir species to individual gorillas, creating numerous but limited spot outbreaks. Viruses isolated from great ape carcasses showed genetic differences that supported the second hypothesis, although horizontal transmission from one animal to another remains possible.

Bats as Reservoirs

Since the first report of Ebola outbreaks in DRC and Sudan in 1976, extensive surveys have tried to identify the reservoir which is the original source of the virus. Thousands of animals were collected in many countries and tested for the presence of the virus. Despite these efforts, no conclusive result was obtained until recently.

During the outbreaks in Gabon in 2001 and RC in 2003, bats, birds and small terrestrial vertebrates (mainly rodents) were captured. We have shown for the first time that fruit bat specimens were asymptotically infected with EBOV, suggesting that they may be the reservoir. There was evidence for Ebola virus (antibodies and viral RNA) in three frugivorous bat species, *Hypsignathus monstrosus*, *Epomops franqueti* and *Myonycteris torquata*. If bats are a reservoir for EBOV, it is very important to understand how the virus can be transmitted to other species.

EBOV outbreaks mainly occur during the end of the dry season, which is the birthing season for bats. At this time, fruit is scarce in the forest and

numerous bats and gorillas may forage in the same trees for food, and EBOV transmission to great apes may occur directly through infected fluids such as saliva, blood or foetal envelopes. In Asia, bats are the reservoir for the Nipah and Hendra viruses, both of which belong to *Paramyxoviridae*, a virus family that shares strong genetic similarities with the *Filoviridae*. Viral transmission from bats to vulnerable species (pigs and horses) can occur either by saliva (Nipah) or by placenta (Hendra).

A better understanding of viral transmission from bats may help to develop strategies to prevent Ebola outbreaks in great apes and humans.

Therapies and Vaccines

During the last ten years, intensive research has been done to develop effective medical therapies and vaccines against Ebola infection. Recombinant nematode anticoagulant protein c2 (rNAPC2) and Phosphorodiamidate morpholino oligomers (PMOs) both gave good results when used to treat experimentally infected macaque monkeys. Interesting results were also obtained with recombinant vaccines using adenovirus and vesicular stomatitis virus (VSV) vectors, which gave good protection against EBOV infection in macaques.

Although vaccines against Ebola are promising, their use in wild animals may be unfeasible, because great apes live in large, remote areas where access is difficult, if not impossible.

Xavier Pourrut, Eric Leroy and Jean-Paul Gonzalez

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Humans and Gorillas – what Kind of Relationship?

Everybody who studies gorillas for a long time experiences intense moments of closeness to their study “objects” that changes his or her relationship to the apes forever – even if hardly anybody has published those anecdotes.

It also happened to me when I observed gorillas in zoos. After thousands of observation hours, their behaviour was almost as familiar to me as human behaviour – but nevertheless I knew that I could never really understand how gorillas feel or think. There may be an appealing closeness but also a distance between gorillas and humans; and there has always been a very special relationship between these two species. Gorillas are regarded as beasts, gentle giants, “just animals” or almost-humans; they are neither of those and all of those at the same time.

In this issue of *Gorilla Journal*, several experts who know gorillas from various viewpoints write about the relationships between humans and gorillas as they have experienced them. Martha Robbins summarizes the different ways how people and gorillas get along in the wild. Juichi Yamagiwa describes his personal experiences as a researcher and a partner for conservation, and he explains how the tense relationship between the sister species in the range countries may be improved. The difficulties of the local population with wild gorillas has already been discussed from the Ugandan experience by James Byamukama and Stephen Asuma on page 10.

Raymond Corbey writes about the perspective of Europeans and Americans, who often see gorillas from a distance – not as living beings, but as symbols for their own fears or dreams. The next contribution by Colin Groves



Pertinax and the author

Photo: Angela Altmann

discusses the closeness of the genetic relationship between humans and gorillas. Richard Johnstone-Scott describes his relationship to captive gorillas. And finally, Kelly Stewart, who worked with Dian Fossey to study the mountain gorillas, explains how important it is to keep a distance and treat the apes with respect.

Angela Meder

Who Is the Beauty and Who Is the Beast?

There is little question that many people living in developed countries are fascinated by gorillas. Most people reading this article will strongly believe that everyone should be intrigued by and care deeply for gorillas as individuals, populations, and species. This is likely the case because of some combination of their close relatedness to humans, their intelligence and behaviour, their size and strength, and ultimately their magnificence and

splendor. On a popular level, the allure is likely because the gorilla is viewed as an animal that can be extremely dangerous, yet can also be gentle and human-like. Why was a gorilla chosen as the monster in *King Kong*, and not an elephant, leopard, or chimpanzee? This complex attraction can be summed up by the two questions I am most commonly asked as a scientist studying gorillas: Are they dangerous? Has one ever touched you? While the answer to both of these questions is yes, they basically miss the point of what, in my opinion, makes gorillas interesting and why they should be studied and conserved.

This fascination with gorillas is largely held by people who do not have them as their neighbours. Gorillas are at risk of extinction today because of habitat destruction, logging, disease, poaching and the bushmeat trade. Ultimately all conservation issues boil down to conflict between humans and wildlife. Add in the reality that gorillas live in 9 African countries that suffer from poverty, corruption, and political instability and the situation appears bleak; but all these countries are making remarkable conservation efforts considering the economic and development challenges they face. The costs and benefits of gorillas to different people vary hugely. For example, consider the disparity in perception toward gorillas among the following:

- A subsistence farmer, earning less than US\$ 500 per year and residing on the border of a park where gorillas live, who has suffered from loss of crops due to raiding by gorillas and not received compensation.
- An ecotourist who wants to be touched or charged by a gorilla so he can take home the photo and the story from his once in a lifetime adventure. His permit fees contribute to gorilla conservation, but is he better informed about the conservation



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challenges and any more likely to make financial contributions directly to conservation organizations?

- A government official from a country where gorillas reside, who may have little understanding of gorilla biology and conservation, but must reconcile the benefits of gorilla tourism money and recognition to his country against the demands of the local populace.

Juxtapose these situations with the fact that the movie *King Kong* can generate US\$ 500 million in revenue from wealthy, gorilla-loving countries and at the same time conservation organisations across Africa are struggling to keep their programs afloat. The challenge is to further capitalize on the attraction that people from developed countries have with gorillas (and other charismatic megafauna), while providing information about the realities on the ground. If gorilla conservation is to succeed, we must better understand and reconcile the relationships that everyone has with gorillas.

Martha M. Robbins

Lessons of Dian Fossey and Establishment of POPOF-Japan

The 20th anniversary of Dian Fossey's death was on 26 December 2005. We

should take this opportunity to reconsider her work and the conservation of gorillas. I worked on mountain gorillas at the Karisoke Research Center in 1981 and 1982 under her supervision after my preliminary survey of eastern lowland gorillas at Kahuzi in 1978.

I learned many things from Dian. Her methods of habituating gorillas were different from those I had learned from habituating Japanese macaques: I had to immerse myself in the gorillas' behaviours, communicating with them in their manner. She made it very clear that both continuous conservation efforts and long-term studies were vital to supporting a healthy population of gorillas. But her murder in 1985 also taught me the importance of harmonious relationships with the local human community; although it was the most effective way to save gorillas at that time, her "active conservation" provoked the hostility of local people.

When I resumed my field work on wild gorillas in the eastern Democratic Republic of the Congo in 1986, I tried to extend my experience and the lessons I had learned at Karisoke to the new study sites. I implemented two policies in my research project: first, to conduct long-term studies with Congolese scientists, and secondly to raise the awareness of local people of the need to conserve gorillas and their natural habitats. Fortunately, I became associated with two gifted colleagues, Mwanza Ndunda and A. Kanyunyi Basabose, who worked with me as Congolese scientists at Kahuzi.

John Kahekwa established an NGO called POPOF (*Pole Pole Foundation*), consisting of people living near the park in 1992. He worked as a gorilla tourism guide in the Kahuzi-Biega National Park and was a core member of the local NGO. I joined POPOF as an external adviser from the beginning. I thought that the most important requirement for research on gorillas and thus their conservation was to work

with local people, since the major obstacle to achieving conservation was conflict: conflict between gorillas and humans, and conflict between groups of people in the struggles for life. POPOF aimed to mitigate such conflicts and to promote the peaceful coexistence of people and gorillas.

Gorilla tourism at Kahuzi-Biega National Park achieved great success in generating significant revenues (from 1989 to 1993 about US\$ 210,000 per year, see Butynski & Kalina 1998); but after the outbreak of riots in Kinshasa, the number of tourists and the revenue from tourism declined drastically, and starvation, the proliferation of small arms, and the collapse of park protection during the civil war in 1996 and 1998 all contributed to the increase in hunting for bushmeat (Yamagiwa 2003). In 1999, gorilla meat was on sale at US cents 25 per kg (equivalent to half the price of beef) in several local markets surrounding the park.

The incentive to hunt gorillas in the park may have grown gradually with the collapse of the Mobutu regime in Zaire (now Democratic Republic of the Congo), the influxes of refugees from neighboring countries, and the two subsequent civil wars. The resentment felt by local people toward the park and its authorities may have contributed to their willingness to engage in illegal exploitation of wildlife resources within the park, thereby complicating conservation efforts.

For many locals, the park was a source of resentment and conflict (Basabose 2001). In creating the park in 1970, the national government had forced many local villagers to abandon their lands and to refrain from using the new reserve's natural resources. Local villages were ordered to absorb the people who were evicted from the new reserve, and they were prohibited from shooting the elephants that frequently raided their crops. Rapid population growth in the area helped to sharpen



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John Kahekwa and David Bisimwa in the Yakushima Forest with Japanese people who are working for conservation and eco-tourism

the conflicts between the traditional village residents and the immigrants.

After the outbreak of the first war, most foreign businesses evacuated the country, and foreign aid and cooperation were suspended. Hospitals and clinics faced severe shortages of medicines and supplies. The payment of salaries to civil servants was stopped or delayed for long periods. To keep schools and colleges open, parents of students had to organize themselves to pay the wages of teachers. These conditions have forced people to exploit natural resources and to seek bushmeat in the park. After the abrupt increase in the price of coltan (columbium tantalite) in 2000 (from US\$ 40 to US\$ 500 per pound), thousands of miners entered the park to mine it, and hunting has significantly increased to support these mining camps (Hayes 2002).

POPOF tried to mitigate the increased conflicts between the local people and the park authorities. A tree nursery, a handicraft center and a school for women and children were established for community-based conservation education. POPOF played an important role in the spread of conservation knowledge and in the reduction of poaching during the war.

I established POPOF-Japan (a branch office in Japan) in 1994 to support the activities of POPOF in Kahuzi.

Although many people including university students, school teachers, artists and zoo keepers joined our voluntary activities, the Japanese Government has warned us against visiting Congo, due to political instability and insecurity. Instead of working with POPOF at Kahuzi, we organized exhibitions to introduce POPOF activities in Japan and sold POPOF goods such as post cards, wood carvings and pendants made by hands of POPOF members.

We also invited John Kahekwa and David Bisimwa, an artist of POPOF, to Japan in 2001, where they participated in several conferences and symposia on conservation of natural environments and eco-tourism. They introduced POPOF and discussed community-based conservation in the World Heritage Sites. In Yakushima, which was added to the list of World Heritage areas in 1993, many eco-tourism guides listened to the story of the Kahuzi gorillas and discussed the importance of environmental education and tourism. David and I made a picture book with a story of human children and juvenile gorillas in the forest of Kahuzi for Japanese children. We are planning to translate it into the Swahili language for children living at Kahuzi in the future.

The recent negotiations among the major stakeholders seem to have established a lasting peace in Congo, but the end of the war does not mean the end of the problems facing conservation efforts. So far, most of the concessions outside of the protected areas have fallen into the hands of foreign logging companies; the termination of war may have actually increased logging and promoted the bushmeat trade on a wider scale. The conservation agencies need to establish mutually beneficial relationships with logging companies and local people through dissemination of conservation knowledge and the revival of relationships of trust.

The bushmeat crisis will drastically

ly reduce biodiversity and deprive the tropical forests in Central Africa of its fauna. Bushmeat is, however, a major dietary component of people in rural areas, and the bushmeat trade constitutes a large part of family income for both rural and urban households. Until alternative food resources are supplied as affordable and palatable protein substitutes, the bushmeat trade will not significantly decline. Logging companies, mining companies, government agencies, conservation organizations and foreign donors should collaborate to increase employment and to raise awareness of the bushmeat crisis in order to promote sustainable use of natural resources in both urban and rural areas. A variety of measures needs to be applied, using both top-down and bottom-up approaches.

It is important to increase the participation of rural populations in forest conservation and management. This may activate local economies and act as a brake on the migration of people and their heavy reliance on bushmeat. Products and profits resulting from forest management should belong to local communities. A considerable portion of park revenues generated by gorilla tourism should be used for development activities in communities near the park.

Although eco-tourism is a promising method for sustainable use of natural resources in the protected area, habituation of great apes may increase the risk of disease transmission from human to apes and may weaken the viability of their population (Woodford et al. 2002). Special precautions and strict regulations are needed in promoting eco-tourism of the great apes in cooperation with local communities. The genetic proximity of non-human primates to humans means that transmission of animal-borne diseases to humans is also becoming a great risk when a number of primates are put on sale. Along with the efforts to dimin-



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ish the bushmeat trade, an interdisciplinary study is urgently needed to examine the process and the possibility of disease transmission.

The role of local NGOs is particularly important for widespread awareness-raising and conservation education as a bottom-up approach. During the war, national institutions and the effects of legislation were weakened, and local people have increasingly made decisions affecting natural resources according to their personal and local interests. POPOF took a role in reinforcing conservation knowledge among local people and providing alternatives to destructive activities. None of the conservation measures taken will be successful without the interest and support of the local people. Foreign countries and international NGOs must support them in their efforts to save people and endangered wildlife from the ravages of war.

Juichi Yamagiwa

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Gorillas as Others

Gorillas were discovered by the Western world somewhat later than the other great apes. Chimpanzees and subsequently also orang-utans had been arriving in Europe on merchant ships since the 17th century. Gorillas

became part of the then prevailing image of the great apes which, with some exceptions, was quite negative: lustful, brutish, and aggressive. Their huge size and the – from the human point of view – aggressive nature of encounters in the wild contributed to this image. These were exactly the same sort of characteristics that were attributed time and again to non-Caucasian “races”. Emmanuel Frémiet’s bronze statue of a gorilla snatching an African female, displayed at the 1859 Salon de Paris, sums up the stereotype pretty well (see below).

This statue also plays upon the Beauty-and-the-Beast theme, already present in the ancient theme of sylvan satyrs abducting shepherdesses, which resurfaces on many occasions in the European imagination. The gorilla stereotype is in tune with the character of Caliban in William Shakespeare’s *The Tempest* (1611). Caliban, a wild native of the tropical island upon which Europeans are shipwrecked, is a quintessential bestial European Other, an avatar and condensation of earlier figures such as the Plinian Races and the Wild Man. It is an ambiguous being, a monster, as the text states some 40 times, “a thing most brutish”, a “thing of darkness”, “as disproportioned in his manners [as] in his shape”. Caliban, the Beast, lusts after the young and attractive Miranda, the Beauty, and is enslaved by her father, the prince and scholar-magician Prospero, a paragon of civilized European humanness.

The interaction of Anne Darrow and an apish monster in Merian Cooper’s 1933 film *King Kong* or in Peter Jackson’s 2005 remake fits in this tradition. Here however, the monster’s nature is more complex, more ambiguous; it has positive aspects as well. In addition, Jackson refers extensively to the history of human indifference to and exploitation of the apes, and plays with traditional gender stereotypes. This *King Kong* is unlike the monstrous al-

iens confronted by an attractive female in Ridley Scott’s film *Alien* (1979) and its sequels, and closer to the positive depiction of the chimpanzee in Peter Høeg’s brilliant 1996 morality tale *The Woman and the Ape*.

A colonial propaganda film made in the 1950s in the Belgian Congo on behalf of the Belgian government was still typical of the traditional negative attitude towards apes. It circulated widely in Belgian cinemas, programmed on Sunday afternoons for families with children. The footage shows in great and, by present-day standards, shocking detail how scientists of the Royal Belgian Institute of Natural Sciences shoot and kill an adult female gorilla carrying young. Subsequently, the body is skinned and washed in a nearby stream, with the distressed youngster sitting next to it. The adult’s skeleton, skin and other body parts were collected for scientific study and conservation, while the live young gorilla was sent to the Antwerp Zoo.

Just a decade later, such a cruel scene had come to be unthinkable as





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suitable for Western families with children. The publicity around field studies of and language studies with great apes since the 1960s brought about significant changes in the way Westerners felt about them. A forceful new icon was the picture of a young Jane Goodall and an equally young chimpanzee reaching their fingers to one another, as portrayed in a 1967 issue of *National Geographic*. This was reinforced by the photos and film of Dian Fossey, overwhelmed with emotion as the wild gorilla Digit chooses to sit beside her and examine her notebook and pen – an interaction so sensitively recreated in the film *Gorillas in the Mist*. Likewise, psychologist Penny Patterson's sign language research and friendship with female gorilla Koko provided another, well-publicized challenge to traditional stereotypes. Both filmmaker Jackson and fiction writer Høeg are trying to come to terms with such positive appreciations against the background of relentless oppression and exploitation by humans.

Through the ages, the Caliban character has been portrayed as a brute primitive, a noble savage, the missing link, an unemancipated slave, a colonial native, and a postcolonial citizen. The chimpanzee appears as a noble Caliban in Jane Goodall's and Dale Peterson's book *Visions of Caliban: On Chimpanzees and People* (1993) – a far cry from the ferocious orang-utan in Edgar Allan Poe's *The Murders in the Rue Morgue* (1841). Early hominins too started to appear in illustrations and museum dioramas as peaceful human-like beings in idyllic natural settings, although pictures of monstrous brutes wielding clubs persist to some degree, as did less positive views of apes, especially baboons.

Raymond Corbey

For more on this subject, see R. Corbey: The Metaphysics of Apes: Negotiating the Animal-Human Bound-

ary. Cambridge and New York: Cambridge University Press

Another View of Gorilla Relationships

Here, as at all other points on the coast, the oranges [apes] are believed by the natives to be human beings, members of their own race, degenerated.

Rev. T. S. Savage, 1847

The first – it may be called the supreme – question in regard to the gorilla is, its place in the scale of nature, and its true and precise affinities. Is it or not the nearest of kin to human kind?

Richard Owen, 1859

Several authors have favoured the idea that gorillas are more closely related to humans than are any other ape. Richard Owen, though he was not operating from an evolutionary point of view, concluded that the apes "recede from the human type in the following order, – gorilla, chimpanzee, oranges, gibbons..." (Owen 1859). Some later anatomists, such as Elliot Smith (1924), still argued that the gorilla is closest. It is now clear that it is the chimpanzee which is in fact closest to humans (although one maverick author still insists that the orangutan is the closest: Schwartz 2005), but the gorilla comes next.

The first psychological research Yerkes & Yerkes (1929) also ranked the gorilla as closest to humans, especially in cognitive traits, although chimpanzees seemed as close to humans in affective traits – although let it be noted that the Yerkes & Yerkes had been able to study only one (young) gorilla. Research since then in comparative psychology has, however, tended to rank the gorilla after the chimpanzee, and equal to (or even after) the orangutan, in similarity to humans (Johnson et al. 2002), although there has still been less testing of gorillas than there

has of chimpanzees (or orangutans, for that matter).

Half a century after Yerkes & Yerkes, primatologists and comparative psychologists reacted with astonishment when it was shown that chimpanzees could recognise their own reflections in a mirror, but shook their heads in puzzlement when Suarez & Gallup (1981) reported that, although orangutans could also recognise their mirror reflections, gorillas were unable to do so. Other studies have refuted this stark claim, but it remains true that, so far, fewer gorillas have passed the mirror self-recognition test than other great apes (about 30% of gorillas that have been tested, compared to over 40% of chimpanzees and 85% of orangutans – Swartz et al. 1999).

It is molecular work that has now shown conclusively that chimpanzees are closest, and gorillas next (followed by orangutans, then gibbons). Wildman et al. (2003), who included the chimpanzee in the genus *Homo* along with humans because their ancestors separated only 5–6 million years ago, calculated that the gorilla's ancestors would have separated from the common ancestor of human and chimpanzee only a little before this, between 6 and 7 million years ago. Watson et al. (2001), pointing out that the DNA distance between gorillas and the chimpanzee/human grouping is less than that between some pairs of species customarily placed in the same genus, enlarged the genus *Homo* still further by including the gorilla; they have been the only authors to go this far, although it is indeed now becoming increasingly common to include the chimpanzees in *Homo*. More recently Raaum et al. (2005) have recalibrated the hominoid molecular clock; they accepted a chimpanzee/human separation time of 6 million years, but made the gorilla's separation older, between 7 and 9 million. This is still comparatively recent, but outside the limits which authors such



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as Goodman et al. (1997) would accept as those of a single genus.

What does the fossil record say about all this? The earliest convincing representative of the human lineage is *Orrorin tugenensis*, from the Tugen Hills in central Kenya, which is 5.9 million years old. Until recently, the gorilla had no convincing fossil antecedents, but now a case has been made that some fossil teeth from the same levels are proto-gorillas (Pickford & Senut 2005).

Even if they are not as close to humans as chimpanzees, and even if they separated 7–9 million years ago, rather than 6–7 million, gorillas are nonetheless very humanlike in many ways. So: could we and they interbreed?

Yes, cried at least three lurid movies. A pretended documentary, *Ingagi* (1930), said that women went off to have sex with gorillas in the jungle, and so did the 1937 *Love Life of a Gorilla*. The last of these “sexploitation” films was the 1948 *Forbidden Adventure* – claimed to be based on a filmed African expedition of 1912, but, incredibly, set in Angkor! (And, on a loftier cultural plane, did the original *King Kong* mean to suggest this too?)

There has actually been one attempt to breed hybrids between humans and other apes. In the late 1920s, a Soviet biologist, Ivanov, traveled to Guinea where he inseminated three female chimpanzees with human sperm. No pregnancies resulted; in two of the cases the terrified chimpanzees were held down, struggling, and there was almost no possibility that the sperm was injected far enough in to reach the uterus. Further attempts were contemplated, but apparently never realized – these included one project to inseminate women with the sperm of an orangutan (Rossiianov 2002).

The possibility of hybridisation would depend in the first place on how similar the chromosomes are. And the chromosomes of humans, chimpanzees



and gorillas are very similar indeed. According to the two most detailed comparisons (Yunis & Prakash 1982; Dutrillaux & Couturier 1986), major structural changes are few; humans and gorillas have only 12 points of reorganization, although there are some minor differences as well – mainly, the greater amount of telomeric heterochromatin in the gorilla. For comparison, there are 24 chromosomal reorganizations between baboons and the blue monkey *Cercopithecus mitis* (Dutrillaux et al. 1986) – and these are known to hybridize (Gray 1972). Hybrids between a siamang and a Bornean gibbon have been bred (Myers & Shafer 1979); the chromosomes of these two species are so different that it has so far proved impossible to homologize them. On chromosomal grounds, therefore, it seems perfectly possible that humans and gorillas could interbreed (and of course the possibility of human-chimpanzee hybrids is even greater, given that the chromosomal differences are still less).

Considering the chromosomal data, and that humans and chimpanzees shared a common ancestor subsequent to the separation of the gorilla lineage, hybridisation between gor-

rillas and chimpanzees would be as plausible as that between gorillas and humans, and arguably (!) less ethically fraught. For quite some time, there have been suggestions that such hybrids exist, but these have turned out to be either unusual-looking chimpanzees or adult male gorillas which have never developed a sagittal crest. The most persistent candidates for such hybrids are what have been called the koolookamba; two authors (Cousins 1980; Shea 1984) have independently examined the evidence and concluded very firmly that koolookambas are simply large, black chimpanzees with some superficially gorilla like facial features, such as large brow ridges and wide, padded nostrils.

Up to now we have no evidence of hybrids between gorillas and either chimpanzees or humans. All we can say is that it does theoretically seem possible, because on any criterion – anatomical, psychological, genetic, geological – we are very close indeed.

Colin Groves

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A Step Away from King Kong

Only those who know and understand gorillas well, and they are but a privileged few, can even begin to appreciate the qualities of this remarkable species.

In captivity many factors influence the way they are managed. The practical and financial constraints are numerous, but even when these are minimal, intelligent and sensitive great apes like the gorilla with their complex and varied personalities can markedly influence plans that are made for them. In addition to the effects of individual history and temperament, relationships within a group change constantly as births take place, maturity is reached, and some animals leave the group whilst others are recruited.

Although much can be learned generally by closely monitoring group behaviour, establishing a relationship based on a mutual trust with each member is both essential to good management, and for gaining a better understanding of the individual. Key to the success of achieving this mutual transfer of trust is exercising patience, and the communicatory abilities of the keeper. Whilst some gorillas invite familiarity, others may initially be reluctant to do so, and subsequently will require more time to become accustomed to changes be they surroundings, conspecifics or keeping staff.

Over the 40 years or so that I have worked with gorillas I have learned considerably more from them than I could possibly teach them. However what I do try to convey when in their presence is confidence, but also a reassurance coupled with my deepest empathy and respect. Given that in gorilla society the most profound communications are often mute, actions and posture are all subject to interpretation, and subsequently are of equal significance to any vocalisation. Of the 15 different recognised sounds that comprise the vocal repertoire of the gorilla, those most commonly heard are the “belch grumble” emitted in the anticipation of food or denoting contentment, the “cough grunt” signifying annoyance or mild aggression, screams, barks and/or high pitched roars in the event of a squab-

ble, and hoot vocalisations which in the case of an adult male will often culminate in a display bout of tension-releasing chest beating. Gorillas are also playful and surprisingly ticklish, regardless of age or status, and boisterous bond-strengthening interactions will invariably produce audible “chuckles” and “gurgles” of pleasure.

Being able to mimic a gorilla vocalisation that is relevant to a particular situation can serve to enhance communication, but more often than not the recognisable sound of a trusted keeper's voice is sufficient. Once familiar with their names gorillas will respond to being called as they will to certain commands or enticements. This is not to give the impression that they will unthinkingly cooperate, although for the most part I have found that the majority tend to be responsive to a good natured, patient, and common sense approach.

Much of my keeping experience has been literally “hands on”, and being able to share the company of gorillas in their enclosure remains both an ultimately satisfying experience, and an habitual lesson in humility for me. When in close proximity to any of my gorillas, whether inside or outside the enclosure I always offer the courtesy of a greeting with either a belch grumble or with some appropriate flattery, and the acknowledgement, usually a deep resonant grumble, is nearly always instantaneous. At other times the response may be of a more subtle nature, a brief glance or a brush of a shoulder, but sufficient to indicate a comfortable awareness of my presence. With younger individuals the response is often an immediate invitation to play, and these highly enjoyable moments are invaluable for initiating the basis on which to form a solid relationship for the future.

By contrast, tense or stressful situations can test fully the relationship between gorilla and keeper especially when human intervention is required.



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Despite being predominantly good natured, gorillas will often react impulsively, and although I have, albeit vainly, always strived to become a human extension within their society, I have never been, or considered myself to be, above reprimand, either vocal or physical. Emotionally upsetting or excruciatingly painful as these rare agonistic encounters can be, I have never experienced long-term resentment. On the contrary, in many cases after the event the resumption of trust has been almost immediate.

Although I have been reluctant to include anecdotal accounts I will describe one of the most difficult and emotionally charged incidents I have experienced. It was the day I had to remove the dead body of the then oldest female N'Pongo from the group. It was late summer, and some of the gorillas, mostly females and their offspring had been left with overnight access to their 2,000 m² outside enclosure. 42 year old N'Pongo had been off colour for several days, and on medication, but despite her illness she had showed a marked preference for remaining in the group. On the morning of 24th September, 1999, I arrived to find that she had passed away, and her condition suggested that death had been recent. She was surrounded by the females and young including her own daughter, and grand offspring all of whom were clearly stressed by her demise.

All efforts to coax them inside were ignored as they were entirely focussed on the inert form of the founder female, and so I had no choice but to attempt to retrieve her body in their presence. I entered the area with a wheel barrow and a scatter feed in the hope that I could distract at least some of them, but this was not to be. At my approach N'Pongo's daughter, 11 year old Hlala Kahilli, and her half sister Sakina, then 13 years of age, began strutting and cough grunting, then Sakina shouldered-charged the barrow knocking it over.

I spoke to them constantly, and also used frequent belch grumbles in an attempt to reassure them, and continued with the barrow towards N'Pongo who was lying on her back about half way down the enclosure. Kishka, one of the gentlest gorillas I have known, and who had become the dominant female about 2 years earlier walked silently beside me, and when Sakina attempted a second strutting run in my direction she confronted her daughter with cough grunts forcing her to retreat. On reaching N'Pongo I bent down to examine her; her body was still supple, but cool to the touch. She was heavy to move, but age and illness had taken toll of her weight, and by turning the barrow on to its side, rolling her in to it, and then pushing it back upright I was ready to transport her out of the area.

But during my efforts to lift her mother, Hlala Kahilli again began cough grunting and promptly mouthed me severely around the small of my back; when I turned, reciprocating her vocal threat she let out a scream, but then suddenly redirected her aggression onto Sakina and a brief squabble ensued. Kishka intervened immediately by chasing both the younger females off, and so I took the opportunity to make my way to the service door, which was being manned by one of my staff. From a short distance away Hlala Kahilli commenced a series of mournful hoots as I was closely escorted on route by Kishka who movingly reached out and touched one of N'Pongo's limp arms as if testing for a last reaction. I spoke to her, and grumbled several times, but she remained silent. Hlala Kahilli, clearly the most distraught, continued to call, which in turn was taken up by her three and a half year old son Mapema who until the squabble had erupted had virtually shadowed my every move, showing particular interest when I was examining N'Pongo.

Before making my exit I offered the remainder of the scatter feed, which

was accepted by Kishka and Sakina, and despite the latter still visibly trembling with emotion both emitted belch grumbles before moving off. Administering the feed that evening, I was aware that the group, including our silverback Ya Kwanza, were still extremely unsettled by N'Pongo's absence.

I made a point of staying late, and spent much of my time making a fuss of Hlala Kahilli. Despite my actions of earlier that day her behaviour was quite reconciliatory. The bite she inflicted I described as mouthing, as whilst still painful, it lacked power and seemed more of a token reprimand, which given the circumstances was at the least remarkable. When interacting with them the gorillas' restraint of power has always impressed me, it's almost as if they sense that physically they are superior, yet, although capable of great ferocity, it is not in their nature to be aggressive without good reason.

In 1986, Jambo, the Trust's much-loved silverback, became world-famous for the gentle behaviour he exhibited towards a 5-year-old boy who had fallen into the gorilla enclosure. It was a display that suggested genuine concern was being shown for a fellow creature, and one that helped dispel the myth of gorillas as fearsome and ferocious. It came across as such a powerful image and story that it will surely endure for all time, and with it the memory of a truly gentle giant. Ten years later a similar occurrence took place in Chicago's Brookfield Zoo, when a boy was recovered from the gorilla compound by a young female gorilla named Binti Jua by carrying the unconscious 3-year-old to a service door, and handing him to keeping staff.

The naturally relaxed and inoffensive behaviour demonstrated by Jambo and his family throughout the original incident helped to confirm the arguments of experts who had long maintained that gorillas are not the monsters of popular myth. In the words of interna-



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tionally renowned television zoologist, Sir David Attenborough: "Human beings grow up with the notion of beauty and the beast and that was the theme successfully traded on by films like King Kong ... Sadly logic shows us that the exact opposite actually applies. It is human beings who are the aggressive primates!"

Richard Johnstone-Scott

Other Nations

For the animal shall not be measured by man. In a world older and more complete than ours they move finished and complete, gifted with extensions of the senses we have lost or never attained, living by voices we shall never hear. They are not brethren, they are not underlings, they are other Nations, caught with ourselves in the net of life and time, fellow prisoners of the splendour and travail of the earth.

Henry Beston, 1928

Nearly 30 years ago, in one of TV's most unforgettable broadcasts, Sir David Attenborough, crouching amidst a group of mountain gorillas in Rwanda, said in an awe-struck whisper "There is more meaning and mutual understanding in exchanging a glance with a gorilla than any other animal I know."

The moment perfectly captured how people feel in the presence of gorillas – not just reverence and awe, but a psychological and emotional connection to another species. But how mutual is this feeling? Do gorillas recognize a kindred spirit in us? Certainly captive gorillas can develop close reciprocal bonds with humans that blur the species boundary. But these are animals whose natural lives have been stolen, and for whom humans are surrogate conspecifics. What about wild gorillas?

Consider the scientists who study the habituated mountain gorillas of Rwanda, Uganda and Congo, like I did

at the Karisoke Research Center in the 1970s and 1980s. Of course, researchers do not aim to form bonds with the animals, quite the opposite. We want to influence them as little as possible, staying on the outside, looking in. But when you spend hour after hour, day in and day out, in the midst of a gorilla group, you do sometimes feel like you're one of the gang.

To some extent, this feeling is inevitable, given how many traits our species share. So much of what gorillas do is familiar – the way they move their hands, for example, or the expressions in their eyes. When I crawled along their trail on my hands and knees, I was seeing their world much the way they did. I particularly recall my sense of affinity during long, cold rainstorms. Then, the gorillas and I got into the same position, hunkering down with feet tucked underneath us, arms folded across our chests, heads bowed, and shoulders hunched against the chilly, pelting rain. Comrades in misery.

I must admit that part of me was drawn to the notion that I had been accepted as one of the group. But I knew this was a fantasy. I think the gorillas saw me, as they do all human observers, as an animal that spent a lot of time following them around, but posed them no danger. I imagine that they recognize something familiar in our ape-like qualities, but I saw no evidence that they viewed me as another gorilla, or felt any kind of "connection". I was largely irrelevant. When a gorilla gazed into my face with its thoughtful brown eyes, it was looking at its reflection in my glasses, not searching my soul.

We modern humans, living so far removed from Nature, are seduced by the idea of being one with the animals, of being their friends. It's the allure behind Tarzan and Mowgli. But our attachment to wild animals is one-way, and of course, this is how it should be. Gorillas "accept" us only in the sense that they cease to fear us. The ultimate

privilege is to have a wild gorilla turn its back on you. It rests on our shoulders not to betray this trust.

Kelly Stewart

Smiling Gorillas

From November to December 2005, artist Chisato Abe presented her latest gorilla paintings in Ginza, Tokyo; the exhibition was called "smiling gorillas". It was well received and also reviewed in several newspapers.

Asahi Shimbun: "Everything started when she saw the smile of a gorilla when she was young. ... Now, she can find not only smiles but also various looks, like sadness, anger etc. in faces of gorillas."

Kohchi Shimbun: "Chisato Abe graduated from Osaka Art University and her work reflecting the great individualities of gorillas has been in the spotlight internationally. She paints only gorillas that she has met all over the world in more than 20 years. ... She said 'In gorilla faces I can find various manifestations of emotion, which Japanese may be losing recently. I try to describe the details of their expression of emotions on their faces.' Mirrors were put on the wall next to her paintings for the visitors to check their own facial expression as a human being."

Based on translations by Hiroko Yoshida





READING

Julian Caldecott and Lera Miles
World Atlas of Great Apes. UNEP World Conservation Monitoring Centre. Berkeley, Los Angeles, London (University of California Press) 2005. 456 pages, more than 200 colour pictures, nearly 50 maps. Hardcover, US\$ 45.00, £ 29.95, ISBN 0-520-24633-0.

This publication was compiled by members of the UNEP program GRASP; it describes the basis of GRASP's work and indicates where the activities should be focused in the future. The first part summarizes the distribution, ecology and behaviour of each ape species, and the second part describes the present conservation status as well as the efforts and requirements to protect the apes – in general, as well as in detail for each range country. An especially important element is the inclusion of elaborate maps, which were designed for this book, although the symbols on some of them tend to be rather difficult to make out.

The *World Atlas of Great Apes* is an impressive volume with a wealth of information and many useful summaries of important subjects related to great ape ecology and behaviour. Unfortunately, the quality of some pictures is not optimal; more expertise in choosing good photos and improving picture quality in general would have been desirable.

In summary, however, the book is a great resource for anybody working with great apes, especially in conservation, and the compilers and publishers are to be congratulated on producing such a major contribution over just a few months.

Angela Meder

Tetsuro Matsuzawa, Masaki Tomonaga, Masayuki Tanaka (eds.)
Cognitive Development in Chimpanzees. Tokyo (Springer) 2006. 576 pages. Hardcover, US\$ 89.95. ISBN 4-431-30246-8

Diane K. Brockman and Carel P. van Schaik (eds.)
Seasonality in Primates: Studies of living and extinct human and non-human primates. Cambridge (Cambridge University Press) 2005. 604 pages. US\$ 120. ISBN 0-521-82069-3

Frans de Waal
Our Inner Ape: a leading primatologist explains why we are who we are. Riverhead Hardcover 2005. 288 pages. US\$ 24.95. ISBN: 1573223123
Paperback: Riverhead Trade 2006. 304 pages. US\$ 15. ISBN: 1594481962

Anthony D. Pellegrini and Peter K. Smith (eds.)
The Nature of Play: Great apes and humans. New York (Guilford Publications) 2004. 308 pages. Hardcover, US\$ 40. ISBN 1-59385-117-0

Peter M. Kappeler and Carel P. van Schaik (eds.)
Cooperation in Primates and Humans. Mechanisms and evolution. Heidelberg (Springer) 2006. X, 347 pages, 61 illustrations. Hardcover, Euro 128.35. ISBN 3-540-28269-6

Charles Nunn and Sonia Altizer
Infectious Disease and Primate Socioecology. Oxford (Oxford University Press) 2006. 240 pages. Hardcover £ 60, US\$ 100, ISBN 0-19-856584-4. Paperback £ 27.50, US\$ 49.50, ISBN 0-19-856585-2.

Stefan Müller (ed.)
Primate Cytogenetics (reprint of Cytogenetic and Genome Research Vol. 108, 1–3). Basel (Karger) 2005. 268 pages, 111 figures, 50 in colour, 56 tables. Hardcover, US\$ 111. ISBN 3-8055-7860-1

Mike Fay and Michael Nichols
Last Place on Earth. Washington, DC (National Geographic) 2005. 480 pages, many colour photos. Two-

volume boxed set, hardcover, US\$ 150. ISBN: 0792238818

Thomas P. Odom
Journey into Darkness: Genocide in Rwanda. College Station (Texas A&M University Press) 2005. XIII, 297 pages. Paperback, £ 21.95, US\$ 24.95. ISBN 158544457X

John Iliffe
The African Aids Epidemic: A history. Oxford (James Currey) 2006. 224 pages. Hardcover £ 45, US\$ 55. ISBN 0-85255-891-0. Paperback £ 14.95, US\$ 24.95. ISBN 0-85255-890-2.

The December 2005 issue (vol. 32, no. 3) of the *IPPL News* is a special issue published 20 years after Dian Fossey's murder. Many of her friends, colleagues and other people familiar with her work write about their experiences. Print or PDF copies are available free from IPPL (info@ippl.org)

Watchlist on Children and Armed Conflict published the report *Struggling to Survive: Children in Armed Conflict in the Democratic Republic of the Congo* in April 2006. 72 pages, available in PDF format (2.5 MB) at www.watchlist.org/reports/dr_congo.php

Gorilla Journal on the Internet

You can download this *Gorilla Journal* issue at:

www.berggorilla.de/gj32e.pdf

as well as the German issue:

www.berggorilla.de/gj32d.pdf

and the French issue:

www.berggorilla.de/gj32f.pdf



BERGGORILLA & REGENWALD DIREKTHILFE

Members' Meeting 2006

Members of *Berggorilla & Regenwald Direkthilfe* and other interested parties met at Lützensömmern Manor in Thüringen from March 11 to 12, 2006. Geographically, this venue is located very centrally for our German members, a fact that might have contributed to the high turnout, of approximately 50 participants. The modernised manor offered comfortable rooms and holiday flats, conference rooms and good cuisine, including vegetarian meals, all of which helped to create a good atmosphere for a constructive meeting.

Angela Meder had returned with first-hand information and pictures from her trip to the Democratic Republic of the Congo and Rwanda. Together with nature photographer Christian Kaiser, she had obtained a personal impression of the state of nature conservation work in the Kahuzi-Biega National Park; she had also met with Claude Sikubwabo, who had given her information on the situation of gorilla conservation in the Parc National des Virunga.

Angela Meder also met Maryke Gray from the *International Gorilla Conservation Programme* (IGCP) in Ruhengeri, who brought her up-to-date on the current situation in the Rwandan part of

the Virunga Conservation Area; together, they visited Kinigi at the entrance of the Parc National des Volcans.

Photographs of the two renovated guard posts in the Bwindi Impenetrable National Park in Uganda showed that the funding from B&RD has been employed in a useful way: not only the buildings but also the water supply have been repaired.

In the area of environmental education, B&RD funded the printing of a school book for English lessons at Ugandan schools. This book, *A Day in Gorillaland* by Waltraud Ndagijimana, relates in a very sensitive and informative way the family life of a group of mountain gorillas and the dangers that the gorillas face from poaching.

Dieter Speidel reported on the structure and financial situation of the *Uganda Wildlife Authority* (UWA), for which he formerly worked as an advisor. He presented overviews showing how UWA's income and cost structure is currently developing. The end of funding by the GEF (*Global Environment Facility*) and *World Bank* for the project PAMSU (*Protected Areas Management and Sustainable Use*) in 2007 will probably once again heighten the need for external support to Ugandan nature conservation authorities from organisations such as B&RD.



Denise Nierentz presented her impressions and showed photographs illustrating her trip to the Cross River gorillas in Nigeria. On the recommendation of B&RD, the Kolmården Zoo in Sweden had funded the construction of a ranger station at Anape in the Cross River National Park, but more ranger posts are still required to manage this very large area. The most urgent requirement is at Bumaji, where nothing at all exists as yet; this is therefore an area where B&RD intends to provide support in the future.

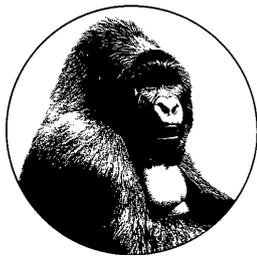
In the evening, several videos and photographs of the mountain gorilla areas were shown, which were greeted with lively interest.

The meeting concluded on Sunday with the official general meeting, which, among other tasks, elected the new board members: Denise Nierentz was elected to the board, and Angela Meder and Rolf Brunner were re-elected.

Ursula Karlowski



Photos: Christian Kaiser



BERGGORILLA & REGENWALD DIREKTHILFE

Finances

Income in 2005

Subscriptions	15,852.71
Donations	25,518.59
Refund from meeting	1,338.20
Sales	490.80
Total	43,200.30

Expenditure in 2005

Administration	974.50
<i>Gorilla-Journal</i>	7,879.63
Subscriptions	15,00
Items for sale	602.54
Postage	1,902.40
Pay/top-ups	2,400.00
Kahuzi-Biega National Park	
POPOF	800.00
Sweaters	2,170.00
Le Gorille 13	1,500.00
Pygmy schools	10,244.06
Virunga National Park	
Renovation of ranger post	2,000.00

Bwindi/Mgahinga

Renovation of ranger posts	4,032.00
Gorilla book for schools	2,532.00
Digital cameras CTPH	589.30
Project management	
Project management	5,240.00
Repair of vehicle	5,400.00
Total	Euro 48,281.43

Donations

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