

## CONSERVATION OF COMMUNITY FORESTS AND PRIMATES IN CROSS RIVER STATE, NIGERIA

NFS Kew Symposium, Paper 5

Tunde Morakinyo and Zena Tooze

CERCOPAN, 4 Ishie Lane, HEPO Box 826, Calabar, Cross River State, Nigeria

Website: [www.cercopan.org](http://www.cercopan.org)

Even though CERCOPAN was founded in 1995, its story really began four years earlier in 1991 when we both came to Cross River State to assist with the establishment of the newly founded Cross River National Park. Zena Tooze was one of the Environmental Education Officers for the park, while Tunde Morakinyo was a Community Forestry Officer.

It is not a widely known fact that Nigeria has lost over 90% of its tropical lowland rainforests. The primary threats to the forests come from logging and outright clearance by poor farmers for ever-increasing areas of farmland. However, the remaining forests are also being progressively degraded by hunting and the over exploitation of non-timber forest products (rattans, medicinal and edible plants, etc). In short, the situation facing rainforests in Nigeria is critical. Of the remaining 10% of Nigerian's rainforests, more than half are found within Cross River State. The forests of this State are part of the so called "Cameroon faunal region" that includes the area east of the Cross River stretching to the Sanaga River in southwest Cameroon. These forests are now known to be some of the richest forests on the African continent and are internationally acknowledged as one of Africa's biodiversity 'hotspots'.

The primate community of this region is particularly rich with over a dozen indigenous species. Together with the area of the Niger Delta west of the Cross River, some of the most endangered primates in Africa are found here. This includes the Selater's guenon (*Cercopithecus sclateri*), red-eared guenon (*Cercopithecus erythrotis*), drill monkey (*Mandrillus leucophaeus*), and the red-capped mangabey (*Cercocebus torquatus* **Plate 1b**). Other species include the mona guenon (*Cercopithecus mona* **Plate 1a**), the putty nosed guenon (*Cercopithecus nictitans ludio*), the crowned guenon (*Cercopithecus pogonias*), Preuss' red colobus (*Procolobus preussi*) and several prosimians. In addition, over 60% of Nigeria's endangered plant species are found within these forests and nowhere else in Nigeria. However, these forests and the species within them face many threats. It was in recognition of this situation that the Federal Government created Cross River National Park in 1991 (out of several former forest reserves from the Oban Group, Boshi Okwangwo and Boshi Extension reserves) as Nigeria's first rainforest park (see **Figure 1**).

Once the park was created, the park's game rangers began to enforce the ban on the hunting of endangered species which included guenon monkeys. Hunters will often take any

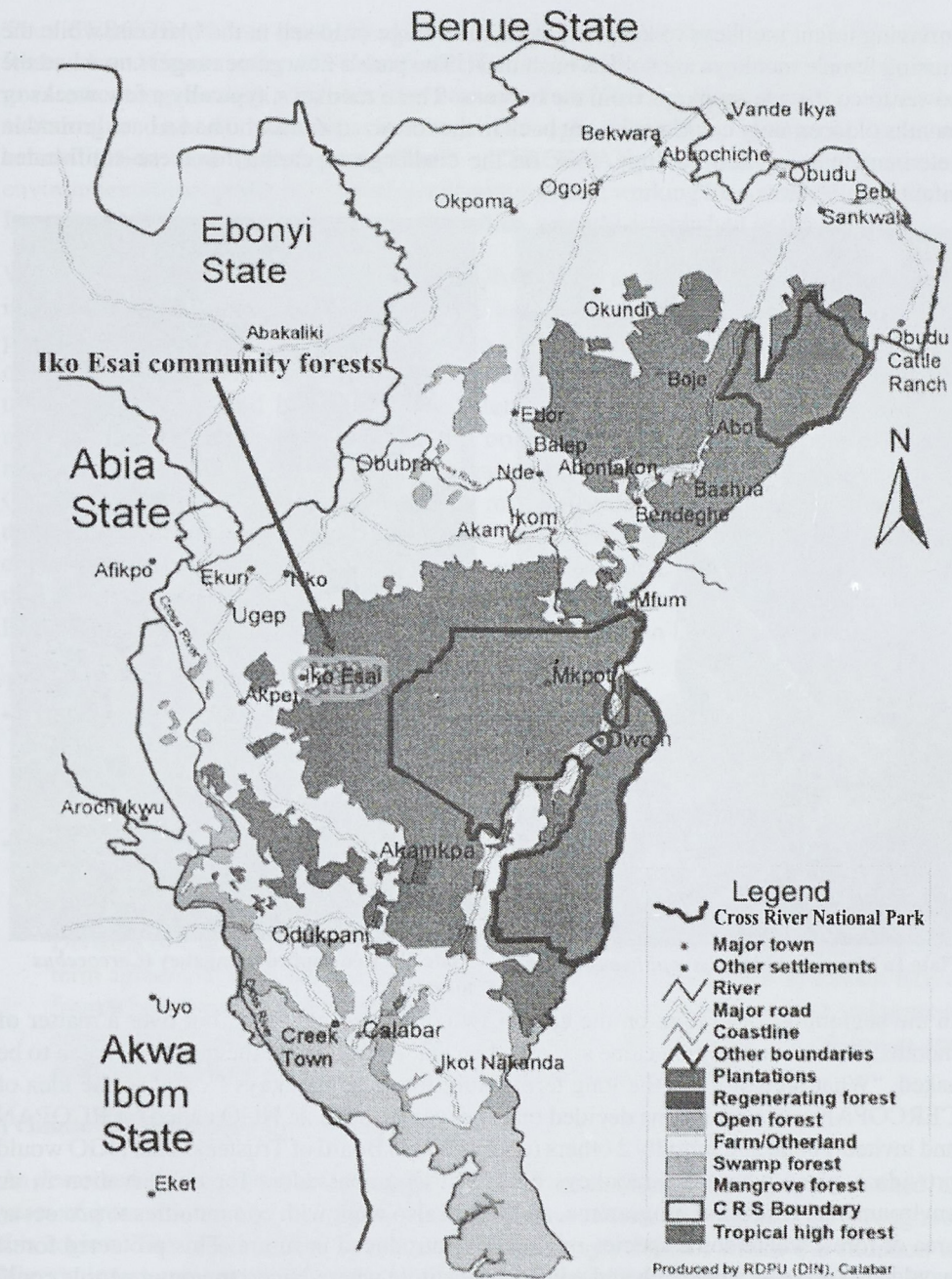


Figure 1: Map showing the Iko Esai Community Forests where Rhoko Research and Education Centre is located

surviving infant monkeys to keep as pets in the village or to sell in the markets, while the nursing female monkeys are sold as bush meat. The park's new game rangers now had the power to confiscate monkeys from the hunters. These monkeys, typically a few weeks or months old, certainly could not be put back in the forest, so Zena who had a background in veterinary nursing and zoology, took on the challenge of caring for these confiscated infants.



Plate 1a Mona monkey (*Cercopithecus mona*)



Plate 1b: Red capped mangabey (*Cercocebus torquatus*)

In the beginning, Zena took on the care of two orphaned monkeys, but over a matter of months, the two monkeys became six, and then ten. After a while the question began to be asked, "What on earth was the long term future for these monkeys?", and so the idea of CERCOPAN was born. Zena decided that she would found an NGO called CERCOPAN and invited Tunde and initially 2 others to serve on the Board of Trustees. This NGO would provide a place where the monkeys could act as ambassadors for conservation in an environmental education programme, and would also work with communities to protect an area of forest where some species might be re-introduced in future. This protected forest would also serve as a research and education institute where Nigerian young people could renew their connection to and appreciation of their rainforest heritage.

Thus CERCOPAN was established in 1995 and stands for the Centre for Education, Research and Conservation of Primates and Nature. Based in Nigeria, it is a non-profit, non-government organisation which aims to “**conserve rainforest biodiversity and ensure the sustainable use of natural resources through education, research, primate rehabilitation and forest protection.**” CERCOPAN is now one of the leading environmental non-profit, non-government organizations working for conservation in Cross River State, Nigeria, with a support organisation recently established in the UK.

We aim to conserve the rainforests of Cross River State and the biodiversity within them, in partnership with communities. Formerly at least 8, possibly 9 diurnal species formed the primate community in these rainforests, often forming mixed feeding groups each species occupying a particular niche. Unfortunately, hunting has reduced the densities of primates to very low levels and has completely exterminated some species from parts of the remaining forests in the state, such that this original community of primates is extremely rare. Instead of focussing on the conservation or reintroduction of a single species, CERCOPAN aims to, as much as possible, restore the original primate “community” in these forests. We have over 30 staff and 7 trustees working on primate rehabilitation, environmental education, community rainforest conservation, and research. Funding for this comes from a wide variety of sources including the Leventis Foundation, Addax Petroleum, ExxonMobil, the International Primate Protection League and others.

The organisation has two sites:

- *Calabar Headquarters*: our administrative and primate rehabilitation headquarters is based in Calabar, the capital of Cross River State. From here, we operate an extensive environmental education programme for schools and visitors. This is also where monkeys rescued from the bushmeat trade are brought for rehabilitation.
- *Rhoko Research and Education Centre*: This is located about 90 km north of Calabar in Akamkpa Local Government Area. Here we have established a base in the community forests belonging to the village of Iko Esai right on the edge of the Oban Division of Cross River National Park. The base was established as a result of a long term agreement with the Iko Esai community, in their forest close to Rhoko River, from where it gets its name. At this forest site, we run our long term forest and primate conservation programme. Rhoko also forms the base for our forest education and research, community development and eco-tourism programmes.

### **Primate rehabilitation in Calabar**

As described above, primate communities everywhere in Nigeria are highly threatened, as years of intensive hunting for the bushmeat trade have decimated populations throughout this region. The result of this is the threat of an ‘empty forest’, which the situation in Nigeria is fast approaching; forests have already reached this state in many areas in West Africa. This is compounded by disappearing habitat caused by the huge demand for land

by the rapidly growing population. Primates are the most vulnerable – they reproduce slowly, move in large groups and are naturally lively and vocal – easy prey, at least while their numbers last. Hunting for bushmeat in most of West Africa is no longer subsistence (i.e. food to feed the family) but rather a cash economy. Rural communities supply bushmeat to urban traders. This type of hunting is highly unsustainable, and creates large numbers of orphaned primates; nursing infants, orphaned when their mothers are shot for meat. Most of these orphans end up living miserable lives as village pets; many perish from their wounds or from inappropriate care.

Only the lucky few come to CERCOPAN. The orphaned monkeys that do come to CERCOPAN's headquarters in Calabar are often donated by villagers as a result of discussion and heightened awareness, or as a direct result of our school outreach programme; but occasionally they arrive after being confiscated by wildlife officials. On average, 1-2 primates arrive at the centre every month and over 150 primates have been rescued over a period of 12 years.

As soon as a monkey arrives at CERCOPAN, it is screened for the presence of disease, according to stringent guidelines set down by our veterinary advisory board. Once it has cleared these, during a rigorous 3 month quarantine period, the process of social rehabilitation begins. First, individuals must learn to become part of a group with their own species. Some can take up to a year before they are fully versed in the social behaviours required of normally functioning members of a dynamic social group. Others, particularly young animals, adapt within days, soon forgetting their human surrogate families. CERCOPAN is currently rehabilitating 6 different primate species, from two families of primates: the guenons, small, compact, long-tailed monkeys and mangabeys, more robust larger long tailed monkeys. The 6 species are the mona guenon (*Cercopithecus Mona*), putty nosed guenon (*Cercopithecus nictitans ludio*), Preuss's guenon (*Cercopithecus preusii*), Sclater's guenon (*Cercopithecus sclateri*), red-eared guenon (*Cercopithecus erythrotis*) and the red-capped mangabey (*Cercocebus torquatus*) (see **Plates 1a and 1b**).

### **Environmental Education in Calabar**

CERCOPAN considers education a priority, and has welcomed visitors from the beginning. Without an extensive education programme, all efforts towards conservation and rehabilitation of primates would be in vain. The hope for the future of Nigeria's wildlife is with the young people of today, and it is difficult to imagine a situation where educational inputs could have a greater impact.

CERCOPAN welcomes visitors to its headquarters in Calabar where they can see the monkeys as they are rehabilitated into groups. Entrance to the centre is free, and full time education staff have been part of our programme for the past 11 years. All visitors coming to the centre are escorted on a conducted tour of the project. CERCOPAN's goals of forest and primate conservation are explained, and questions and discussion invited. For most children, CERCOPAN is their first opportunity to observe primates—all are fascinated.



**Plate 2: School children visiting the CERCOPAN Calabar Headquarters**

We also have an active outreach programme where our education staff visit over 50 primary and secondary schools in the Calabar area to give classes to pupils and students on the issues we deal with. The emphasis is on the need for sustainable hunting practices, thus attempting to reduce the number of orphans by discouraging hunting of nursing females and endangered species. The value of the forest for medicinal plants and other forest products is also stressed. While many adults in rural areas know this, such knowledge is not valued by young people and is in real danger of being lost. There is a need to re-emphasize the value of nature and the forest and CERCOPAN can help the young people of today to recognize this value. We take pride in our education programme, and every year in Calabar alone, in addition to the schools we visit, CERCOPAN welcomes over 30,000 visitors including primary, secondary and university students and the general public (see **Plate 2**).

### **Community Rainforest Conservation at Rhoko**

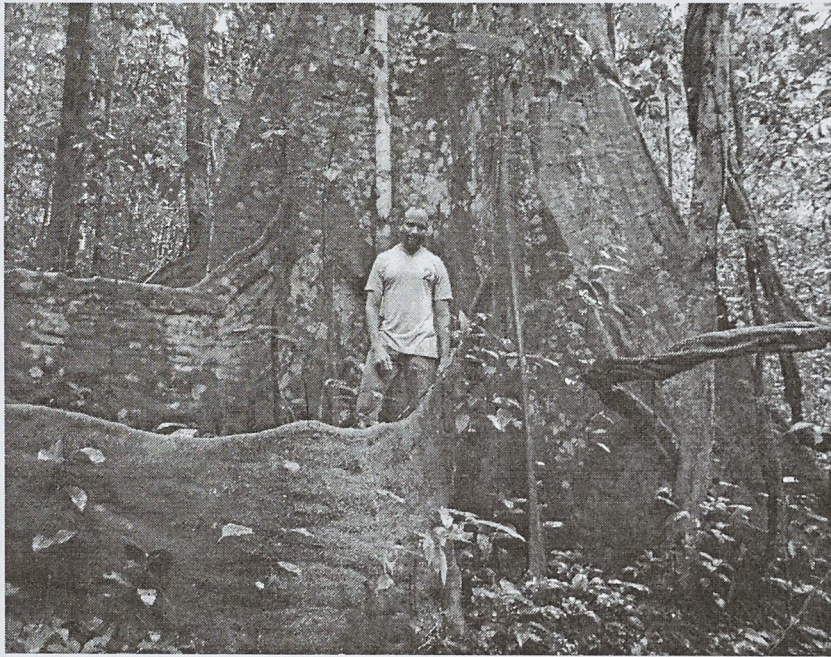
In November 1998 the search began for a possible site in a community owned forest for research and education activities as well as potential primate reintroduction. We researched over 20 villages in southern Cross River State, with the following specific criteria in mind:

- a large and relatively intact community forest, owned by a single community with no land disputes and good primate habitat

- a willing & interested community with strong leadership
- relatively accessible from our headquarters in Calabar from a logistics perspective
- a forest area contiguous with the Cross River National Park
- a good source of water all year round

Eventually, we selected a village called Iko Esai in Akamkpa local government area (approximately 90 km north of Calabar) and after 18 months of discussions and preliminary forest surveys, we signed an agreement with the chief's council, youth and women leaders in September 2000. Through this agreement, over 15,000 hectares of community forests are protected by the community. This includes:

- 400 ha of a strictly protected forest area (the 'Core Area') – managed by CERCOPAN for education and research where no hunting or the collection of any forest products is allowed (see Plate 3).



**Plate 3: Tunde Morakinyo standing in the buttress of a large *Piptadeniastrum africanum* tree**

- 3,000 ha of community forest set aside for research and sustainable collection of traditional non-timber forest products, jointly managed by CERCOPAN and the community
- 11,00 ha of community forest designated for conservation in a community land use plan. The drawing up of this plan by the community was facilitated by CERCOPAN and involved the participation of all the forest and land users in the village.

In addition, the community has banned all commercial logging from its forests and the hunting of all primates throughout its lands, which together with its traditional ban on use of indiscriminate snare traps in forest, are powerful tools for conservation.

Under the terms of this agreement, CERCOPAN contributes annually to a Community Conservation and Development Fund, managed by a democratically elected committee that carries out projects to develop the village. Along with employment and forest conservation benefits, our community development programme provides tangible and immediate benefits to the entire village.

It is important to note that CERCOPAN has invested much time, energy and funds in developing and nurturing this partnership, which is critical to the long term success of our work. The negotiations that led to this agreement required a great deal of patience to develop mutual understanding and trust – and after 7 years the relationship with Iko Esai community is very solid. This process required a real commitment in terms of funding and staff and it was essential that the project should deliver tangible economic benefits to the community.

#### **Community Development and eco-tourism at Rhoko**

The funds that CERCOPAN pays to the Iko Esai community are managed by the Community Conservation and Development Committee (CCDC). The members of the CCDC are elected by the community and they, on behalf of the community, identify projects that the funds should be used for, such as the repair of bridges and the rehabilitation of school buildings.

In addition, CERCOPAN employs 21 members of the local community, 18 of whom are former hunters, as staff on our various programmes. In 2006, we started a sustainable livelihoods program in Iko Esai, and worked with the youth association to:

- identify and sponsor 6 youth (3 men and 3 women) in alternative livelihood apprenticeships (driving, sewing, baking);
- trained and sponsored 5 hunters in snail farming, including developing a demonstration snail farm located at the Rhoko Education Centre,
- worked with the women's group to lead two workshops, one on bread baking workshop and another about starting a small business.

CERCOPAN also works with the Iko Esai Forest Management Committee (FMC), one of over 20 FMCs across Cross River State that was set up by the Cross River State Forestry Commission in the 1990s. The FMC in Iko Esai monitors forest use by the community and reports any transgressors of the community land use plan to the chiefs in the village (see **Plate 4a**). The project also works in partnership with two other NGOs. Concern Universal has supported the development of a clean water project in the village (see **Plate 4b**). Development in Nigeria (DIN) has established a women's livelihoods group that will

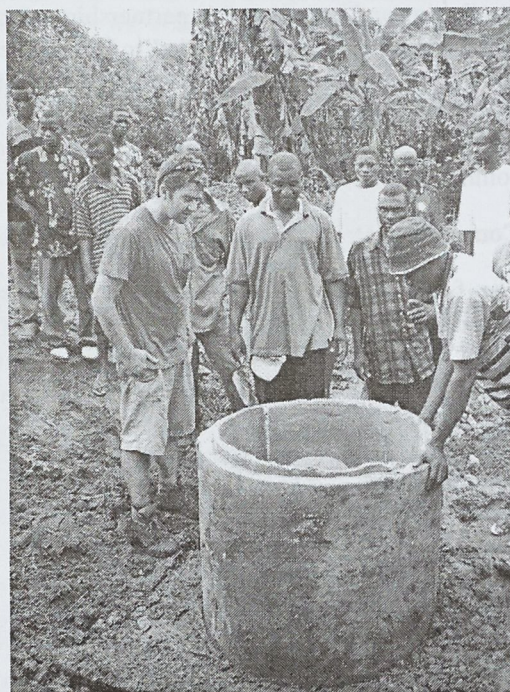


develop agricultural projects and bee keeping. We plan to expand this programme to include micro-credit and small business development focused on the processing and sale of agricultural and non-timber forest products.

The project also welcomes visitors to the Rhoko forest. There are 3 chalets where people can stay, with adjoining bathing facilities. Meals are also provided in the kitchen at Main Camp. Visitors can trek through the forest, walk along our nature trail, climb our tree viewing platform, swim in the Rhoko River and visit the Iko Esai community. A portion of the proceeds charged for ecotourism ('Ecotourism Royalties') goes directly to the community.



**Plate 4a:** Chief Owai, Paramount ruler of Iko Esai



**Plate 4b:** Concern Universal helping to build a clean water system around a spring at Iko Esai

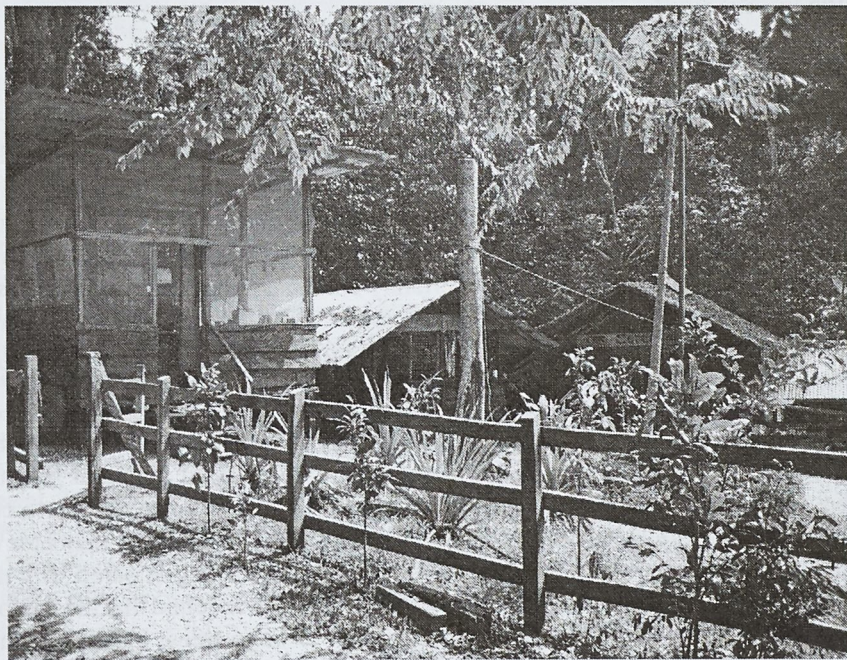
#### **Facilities at the Rhoko Research and Education Centre**

In the strictly protected 400 ha forest at Iko Esai, we have established the Rhoko Research and Education Centre. This centre is the field site of CERCOPAN's headquarters in Calabar, and the base for CERCOPAN's forest conservation and research programmes. Our facilities include:

- *The Main Camp:* The camp is well equipped with a main living area, office, tool

storage, fuel storage, a 4x4 Toyota pickup, solar power and both VHF and HF communication between Iko Esai, Rhoko Camp and Calabar. Permanent senior staff and long term students reside at Main Camp, in 5 private sleeping sheds. A security post, bathing facilities and kitchen complete the facilities (**see Plate 5**).

- *A one hectare electric fence enclosure for rehabilitated primates:* In February 2004, a group of 18 red capped mangabeys (*Cercocebus torquatus*) were moved from our headquarters in Calabar to a 1 hectare forested enclosure at Rhoko, with over 350 trees from 28 different families. They adapted rapidly to their new environment, and bred very well. Now numbering 36 (as of July 2007), behavioural studies have been ongoing since their arrival to looked at their adaptation to the forest environment, parasite loads, feeding behaviour, and social behaviour. Although provisioned daily, they spend much of their time foraging for natural foods, including fruits, insects and leaves.
- *Education Centre:* This is located 500m from Main Camp at the entrance to the protected forest. It was completed and decorated in July 2003, complete with interpretive displays. Over seventy-two feet of panels have been decorated with information and photographs of primates, rainforest, threats, CERCOPAN's work, habitat and much more. The centre fulfills many needs and is used for student lectures, staff meetings, visitor reception and even the occasional party! Many visitors are welcomed annually to the centre, including school children, villagers and a small number of ecotourists.



**Plate 5: Buildings at the Rhoko Main camp**

- *Other facilities:* These include a tree platform 22 metres up in the canopy, a nature trail and over 12 km of transects through protected forest.

### **Forest and primate research at Rhoko**

Ever since CERCOPAN was founded, research has been integral to its work and is necessary for any possible re-introduction of primates into the forest. Re-introduction has to be carefully planned according to the strict Reintroduction Guidelines for non-human primates produced by the International Union for the Conservation of Nature (IUCN). Restoring the primate community of the Rhoko forests to what they once were requires several questions to be answered including:

- What species were present in the forest originally?
- What primate species currently remain and at what densities?
- How quickly will reintroduced formerly captive primates adapt to a natural forest environment?

To answer these questions, research is carried out by various CERCOPAN staff. MSc and PhD students from Nigerian and international universities are invited to conduct specific studies, as well as welcomed for their own research when appropriate as deemed by CERCOPAN's board. To facilitate this, a network of 12 transects in the "Core" protected area has been established. This area is fully protected and managed completely by CERCOPAN, patrolled day and night by forest patrol staff, who also carry out routine wildlife monitoring.

Studies carried out include:

***Current wild primate populations:*** Since 2000 we have conducted surveys in the protected area and the larger community forest. Hunter interviews have revealed that 5 *Cercopithecidae* were historically present in much higher numbers in this community forest. Today, in the "core protected area of the Rhoko forest there are very low numbers of primates with permanent residents at approximately 4 individuals per sq km. This shows that there is an incomplete and almost certainly unviable community of primates. At the moment, two species which are currently absent from the immediate area are being prioritized for reintroduction. These are the mona monkey (*Cercopithecus mona*) and the red-capped mangabey (*Cercocebus torquatus*).

***Structure of forest in the 1 ha enclosure:*** This is an enclosed forest area into which a group of 20 mangabeys have been released to see how they adapt to a natural forest habitat: Studies were carried out on this forest to see if its three dimensional structure and composition was similar to forests found elsewhere. All trees 10 cm diameter at breast height and over were tagged, measured and identified and then compared with inventory records carried out elsewhere in the community forests. It was found that the enclosure had a comparable three dimensional structure (plenty of large trees, lianas, saplings, hilly

terrain, 'gaps' and swampy land) and a high diversity of species (over 68 tree species in 29 families). From this, it was concluded that the forest in the enclosure was a good environment in which the monkeys could develop normal behaviour and learn forest survival skills



**Plate 6: Red capped mangabeys being studied by one of the CERCOPAN research assistants in the 1 ha forest enclosure at Rhoko**

*Adaptability of primates to the natural forest habitat:* The group of 20 mangabeys (and an additional group of 12 mona guenons also at Rhoko) introduced into the 1 ha forest enclosure at Rhoko, are being studied on a daily basis. Both the mangabeys and the guenons comprise a mixture of captive and wild born monkeys. These groups are being studied to find out whether there are differences in adaptability between the wild and captive born monkeys i.e. how they use their environment and find and forage on natural foods. Several research assistants monitor the behaviour of the primates (in the forest enclosure) collecting information on feeding, foraging, grooming, resting, playing and the height from the ground where the activity occurred (see Plate 6). Currently, some 2 years of data is being analysed.

This data collected shows that the monkeys are adapting well to the three-dimensional environment. Younger animals adapt very quickly, but even adults adapt within a short period of time. We have also looked at the ability to forage for natural foods and found that this depends on the type of food – leaves and fruits are foraged immediately according to availability, but foraging on insects increases more gradually over time likely due to the greater skill required for this activity. All indications are therefore that the programme is

on track for a successful reintroduction. The next steps include more extensive surveys (including within the national park), introducing more natural foods into the monkeys diets, gathering more detailed behavioural data and carrying out an experimental 'test' release of mona monkeys later this year.

**Wider forest research:** Besides studies that focus on the primates leading ultimately to their release, we also conduct studies on the forest ecosystem in general. Research students have come from Lancaster, Liverpool, Oxford Brookes and Reading Universities since 2003. Masters research projects have included the impacts of selective logging on tree biodiversity, sustainability of duiker hunting, and the comparison of parasites in semi free-ranging and captive primates. Various visiting experts have also carried out studies on the biodiversity of the site and have found:

- 179 trees species including 1 to be confirmed new-to-science *Diospyros* (Ebony) species and 1 possible new-to-Nigeria Legume
- 48 amphibian species including 1 new-to-science (*Phrynobatracooides crossii*)
- 32 reptile species
- Butterflies: (list in prep - but including 2 new-to-science subspecies of butterfly and 2 new butterfly records for Nigeria)
- 200 bird species

#### **Plans for the future:**

The success of CERCOPAN is due to the amount of time and effort that was put into negotiating with our host communities to find an arrangement that was beneficial for both parties. This should not be underestimated and differentiates our project from many others. The sincerity and mutual respect with which these negotiations were carried out has paid off. Our strong relationship with the government and the Cross River National Park is also important.

CERCOPAN is now at an exciting stage of its work. The project is on the verge of conducting its first trial release of a family of guenons back into the Rhoko forest. This will be the first primate reintroduction ever carried out in West Africa. An expansion of the programme is planned to 5 neighbouring villages in order to increase the area of forest under protection. The community development programme will be strengthened so that villages can derive even more benefit from the conservation of their forests. Cercopan is also in the process of establishing a research institute at the University of Calabar with the Rhoko Centre as its field site. We would like to welcome visitors to the project and invite students and academic institutions to carry out further studies in the Cross River rainforests using CERCOPAN and the facilities we provide as a base.

*Update: Three mona guenons were released on November 1<sup>st</sup>, 2007, equipped with radio tracking devices. The monkeys are monitored 24/7 by a team of 4 research assistants, and they are faring very well in their new environment. Visit [www.cercopan.org](http://www.cercopan.org).*