May be as few as 3,500 left

Today, the total population of Nigeria-Cameroon chimpanzees may number as few as 3,500.

Regional Action Plan for the Conservation of the Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*)

Hope Survival

Implementation of the recommendations in this plan will make a significant difference to the survival of the Nigeria-Cameroon chimpanzee.

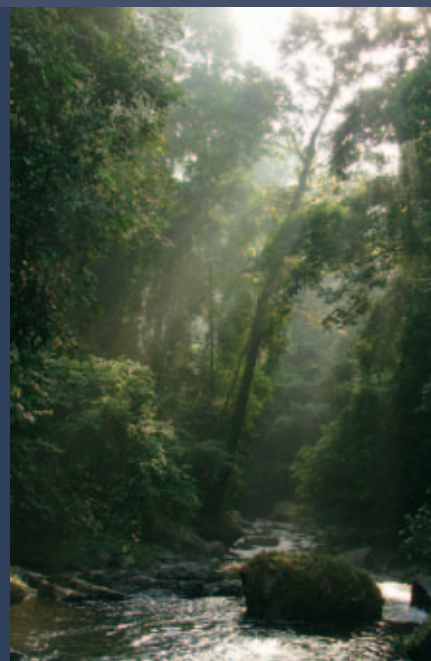

Photo: Liza Gadsby

Nigeria-Cameroon chimpanzee
(*Pan troglodytes ellioti*)

Implementation of the priority conservation actions proposed in this Conservation Action Plan would protect over 95% of the remaining Nigeria-Cameroon chimpanzees over the next five years.

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Prefaces

The Federal Republic of Nigeria and the Republic of Cameroon are the only home of the most endangered form of chimpanzee: *Pan troglodytes ellioti*, the Nigeria-Cameroon chimpanzee. Both our Governments recognize the great importance of biodiversity conservation in safeguarding our natural heritage, and we have therefore been closely involved in the development of this conservation action plan.

There are estimated to be between 3,500 and 9,000 Nigeria-Cameroon chimpanzees remaining in the world, and we fully endorse recommendations made in this plan to ensure their continued survival. The plan identifies priority areas where targeted conservation efforts can improve the survival prospects of chimpanzee populations, and lists the actions that are needed to secure these populations for posterity. By suggesting partners to work with our respective Governments, as well as time frames and estimates for funding requirements, the plan clearly defines how these remarkable great apes can be conserved.

We call on all the partners to work together in a spirit of cooperation to ensure the successful implementation of this action plan.

Minister of Forestry and Wildlife
Republic of Cameroon

His Excellency Prof. Elvis NGOLLE NGOLLE

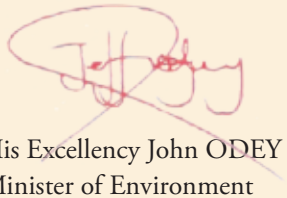
The Federal Republic of Nigeria and the Republic of Cameroon are the only home of the most endangered form of chimpanzee: *Pan troglodytes ellioti* (also known as the Nigeria-Cameroon chimpanzee). This sub-species of chimpanzee has the lowest estimated total population size of all, given its restricted distribution within forested habitats to the north of the Sanaga River in Cameroon, the eastern edge of Nigeria, and in forest fragments in the Niger Delta and Southwestern Nigeria.

Both our Governments understand that the distribution of the Nigeria-Cameroon chimpanzee coincides with a biodiversity hotspot of global significance, high human population density, ineffective enforcement of hunting laws, together with habitat destruction and fragmentation. These factors have led to the extinction of this chimpanzee across much of its former range. Thus both governments recognize the great importance of biodiversity conservation in safeguarding this natural heritage and the need for synergy with various partners, and have therefore been closely involved in the development of this conservation action plan.

Our conviction is that the proposed measures to conserve the Nigeria-Cameroon chimpanzee, such as the protection of forest habitats and the control of hunting, will generate an increase in the chimpanzee population, and also benefit many of the other range-restricted, unique and endangered primates as well as other threatened animals found in the same Gulf of Guinea forests. By highlighting chimpanzees as 'flagship' species, we will be protecting much of the remaining biodiversity in these areas and contribute to the mitigation of climate change effects.

The plan elucidated for the conservation of this species identifies priority areas where targeted conservation efforts can improve the survival prospects of chimpanzee populations, and lists the actions that are needed to secure these populations for posterity. Consequently, we fully endorse the recommendations made in this plan to ensure the continued survival of the estimated 3,500–9,000 Nigeria-Cameroon chimpanzees remaining in the world.

We call on all the partners to work together in a spirit of cooperation to ensure the successful implementation of this action plan.



His Excellency John ODEY
Minister of Environment
Federal Republic of Nigeria

Regional Action Plan for the Conservation of the Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*)

Authors and Editors

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Chimpanzees in Ngel Nyaki Forest Reserve, Nigeria. Photo: Paul Dutton

Executive Summary

This document represents the consensus of views from forestry and wildlife conservation agencies in Nigeria and Cameroon, local and international nongovernmental conservation organizations, and university-based researchers who met at a series of workshops in Cameroon and Nigeria to formulate a set of actions that, if implemented, will increase the long-term survival prospects of the Nigeria-Cameroon chimpanzee, *Pan troglodytes ellioti*. The Nigeria-Cameroon chimpanzee is the most endangered of all currently recognized chimpanzee subspecies, with a total remaining population of between 3,500 and 9,000 living in forested habitat to the north of the Sanaga River in Cameroon, the eastern edge of Nigeria, and in forest fragments in the Niger Delta and southwestern Nigeria.

The Nigeria-Cameroon chimpanzee was resurrected as a distinct subspecies only in the last decade. Increasing attention to this chimpanzee from scientists and conservationists has highlighted the need for urgent conservation attention necessary if viable populations are to survive for the long-term. The distribution of the Nigeria-Cameroon chimpanzee coincides with a region of high human population density, in which there has been considerable habitat destruction and fragmentation besides a lack of enforcement of hunting laws. These factors have led to the extinction of this chimpanzee across much of its former range.

Participants in the workshops agreed on the populations of chimpanzees in Cameroon and Nigeria that are most in need of urgent conservation measures, formulated detailed priority actions, recommended potential partners to carry them out, and suggested the budgets required. The total funding need proposed in this Conservation Action Plan amounts to approximately $14,670,000, which we estimate would protect over 95% of the remaining Nigeria-Cameroon chimpanzees over the next five years.

The range of the Nigeria-Cameroon chimpanzee corresponds to a biodiversity hotspot of global significance, with other range-restricted and endangered primates such as Cross River gorilla (*Gorilla gorilla diehli*), drill (*Mandrillus leucophaeus*), Preuss's monkey (*Allochrocebus preussi*) and Preuss's red colobus (*Procolobus preussi*) present in the same forests. By highlighting chimpanzees as 'flagship' species, we will be protecting much of the remaining biodiversity in these areas. We hope that this plan will aid this goal by identifying priority sites for conservation action, and priority actions in those sites, as well as securing funding and spurring activity to increase the survival prospects for the Nigeria-Cameroon chimpanzee.

The range of the Nigeria-Cameroon chimpanzee corresponds to a biodiversity hotspot of global significance, with other range-restricted and endangered primates such as Cross River gorilla, drill, Preuss's monkey, and Preuss's red colobus, present in the same forests. By highlighting chimpanzees as 'flagship' species, we will be protecting much of the remaining biodiversity in these areas.

Rescued chimpanzees at Drill Ranch, Afi Mountain Wildlife Sanctuary, Nigeria. Photo: Liza Gadsby

View of Korup National Park, Cameroon from an oil palm plantation bordering the southern sector. Besides removing potentially high conservation value forest adjacent to the park, such developments draw workers from throughout Cameroon to the area, increasing local demand for bushmeat, most of which is harvested from inside the park. Photo: Joshua Linder

Résumé exécutif

Ce document est le fruit d'un consensus entre les agences de gestion forestière et de conservation de la faune au Nigeria et au Cameroun, des organisations non gouvernementales locales et internationales de conservation et des chercheurs affiliés à des universités, réunis lors d'ateliers organisés dans les deux pays pour formuler un ensemble d'actions, qui, si elles sont mises en place, pourraient amélior les chances de survie du chimpanzé du Nigeria-Cameroun *Pan troglodytes ellioti*. La sous-espèce de chimpanzé du Nigeria-Cameroun est aujourd'hui la plus menacée de toutes les sous-espèces reconnues de chimpanzés. Il ne reste que 3.500 à 9.000 individus qui survivent dans un habitat forestier situé au nord du fleuve Sanaga au Cameroun, à la lisière orientale du Nigeria et dans des fragments forestiers du delta du Niger et du sud-ouest du Nigeria.

Le chimpanzé du Nigeria-Cameroun n'a été rétabli comme sous-espèce distincte qu'au cours de la dernière décennie. En y accordant plus d'attention, les chercheurs et les responsables de la conservation sont parvenus à la conclusion que des mesures de conservation sont à mettre en place rapidement afin que les populations viables puissent survivre. L'aire de répartition du chimpanzé du Nigeria-Cameroun coïncide à une région de forte densité humaine où la destruction et la fragmentation de l'habitat ont été considérables en plus du manque d'application des lois sur la chasse. En conséquence, ce chimpanzé a maintenant disparu d'une grande partie de son ancienne aire de distribution.

Les participants aux ateliers ont identifié les populations de chimpanzés prioritaires au Nigeria et au Cameroun qui doivent bénéficier en urgence de mesures de conservation, formulé en détail des actions prioritaires, recommandé des partenaires potentiels pour réaliser ces actions et proposé les budgets nécessaires.

Le financement nécessaire défini dans ce Plan d'action s'élève à environ 14.670.000 USD, une somme qui devrait protéger plus de 95% des derniers chimpanzés du Nigeria-Cameroun au cours des cinq prochaines années.

L'aire de distribution du chimpanzé du Nigeria-Cameroun correspond à un hotspot de biodiversité d'importance mondiale où se trouvent d'autres primates menacés et à distribution restreinte comme le gorille de la rivière Cross (*Gorilla gorilla diehli*), le drill (*Mandrillus leucophaeus*), le cercopithèque de Preuss (*Allochrocebus preussi*) et le colobe roux du Cameroun (*Procolobus preussi*). En mettant en avant le chimpanzé comme'« espèce-phare » nous pourrons aussi préserver la plupart de la biodiversité restante dans ces régions. Nous espérons que ce plan y contribuera en identifiant les sites prioritaires pour la conservation, en assurant le financement et en stimulant des activités pour accroître les chances de survie du chimpanzé du Nigeria-Cameroun.

L'aire de distribution du chimpanzé du Nigeria-Cameroun correspond à un hotspot de biodiversité d'importance mondiale où se trouvent d'autres primates menacés et à distribution restreinte comme le gorille de la rivière Cross, le drill, le cercopithèque de Preuss et le colobe roux du Cameroun. En mettant en avant le chimpanzé comme'« espèce-phare » nous pourrons aussi préserver la plupart de la biodiversité restante dans ces régions.

Chimpanzees at the Bekob Research Station in the proposed Ebo National Park, Cameroon, eating *Pseudospondias* fruits. Photo: Robin Whytock, ZSSD

Farmland in the Mbe Mountains, Nigeria. Photo: Richard Bergl

Introduction

The Nigeria-Cameroon chimpanzee (*Pan troglodytes ellioti*) is one of four currently recognized subspecies of chimpanzee. It has the lowest estimated total population size of any of the chimpanzee subspecies, and given its restricted distribution, particularly in southwestern Nigeria, as well as the increasing degree of threats to its long-term survival, it is currently classified as Endangered on the IUCN Red List (Oates et al. 2008a). We estimate that c. 3,500–9,000 Nigeria-Cameroon chimpanzees survive, with the vast majority residing in 'conservation planning units' identified in this conservation action plan.

The Process of Developing this Conservation Action Plan

Triggered by an increasing awareness of the precarious outlook facing the Nigeria-Cameroon chimpanzee, in 2007 field-based researchers and conservationists began the four-year process to develop the published version of this action plan. A preliminary workshop at the XXII Congress of the International Primatological Society in Edinburgh, UK, in 2008 led to three further meetings to develop this action plan, which were held in Limbe, Cameroon, and Calabar, Nigeria, in October 2009, and concluded in Limbe in February 2010. Sixty-seven experts, including government wildlife authorities, national and international conservation organizations, and chimpanzee researchers attended these workshops. This action plan has been produced as a direct result of this ambitious collaboration between stakeholders based, in most part, in Nigeria and Cameroon, and will contribute immensely towards current endeavours in transboundary management of wildlife being made by both countries. Throughout this process, the overall goal has been *to determine the priority sites for the conservation of the Nigeria-Cameroon chimpanzee and the actions that should be taken to ensure its long-term survival.*

Phase 2 chimpanzee workshop participants in Limbe, Cameroon. Photo: James Christie, ZSSD

Distribution and Current Classification of *Pan*

Chimpanzees belong to the genus *Pan*, which is divided into two species: Bonobos (*P. paniscus*) occupy the humid, lowland forests south of the Congo River, whereas chimpanzees (*P. troglodytes*) inhabit a wider range of forested habitats north of the Congo River (Groves 2001). Chimpanzees are further subdivided into four subspecies across tropical Africa (Groves 2001; Oates et al. 2008a): *P. t. verus* occupies the Upper Guinea region of western Africa; *P. t. troglodytes* extends across central Africa; *P. t. schweinfurthii* is found in eastern Africa; and *P. t. ellioti* has a fragmented distribution across the forested areas of the Gulf of Guinea biodiversity hotspot in southern Nigeria and western Cameroon (hence the "Nigeria-Cameroon chimpanzee"). It was only in 1997 that the distinctiveness of the Nigeria-Cameroon chimpanzee led to its resurrection as a distinct subspecies (Gonder et al. 1997), and in 2009 it was given the scientific name *Pan troglodytes ellioti* (Box 1).

Box 1
Naming the Nigeria-Cameroon chimpanzee

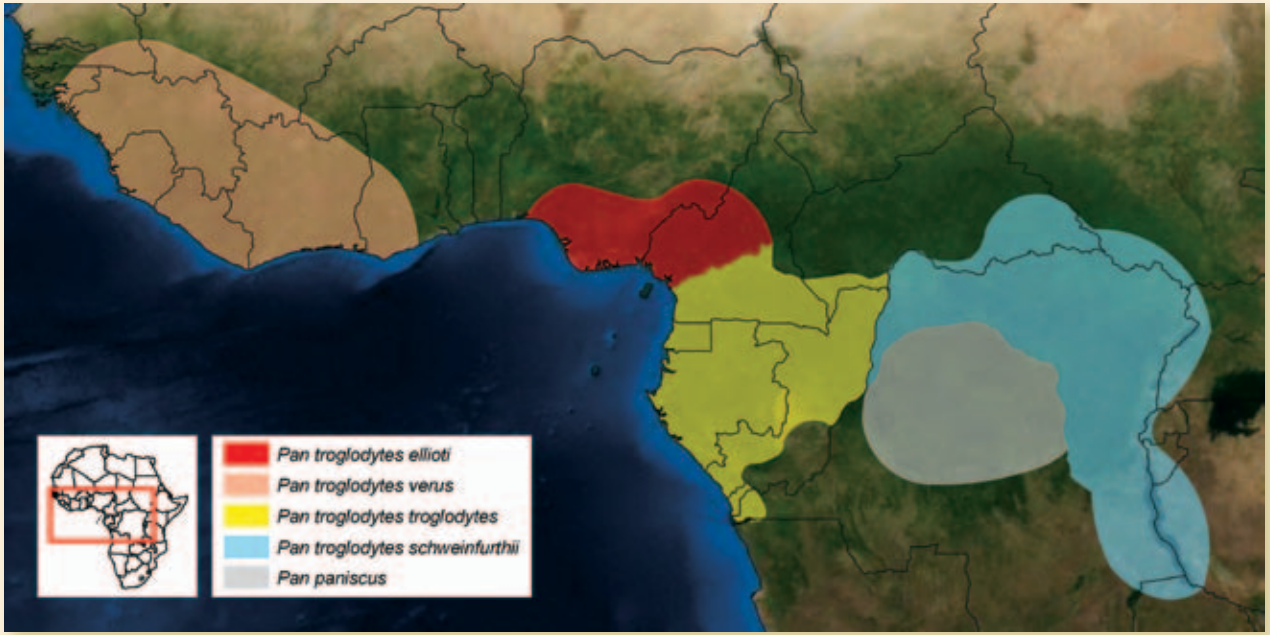
When Gonder et al. (1997) suggested that the chimpanzees in this region might justify being recognized as a distinct subspecies, they noted that the name *vellerosus* seemed already to be available. *Troglodytes vellerosus* was the name proposed by J.E. Gray (1862) for a chimpanzee that was assumed to have been collected by Richard Burton on Mount Cameroon, and which was deposited in the British Museum. Over the next 150 years, many authors continued to assume that *Troglodytes* (later *Pan*) *vellerosus* was from Mount Cameroon (e.g., Jenkins 1990; Groves 2001). However, during research for this action plan, and in particular in an effort to establish where on Mount Cameroon had Burton collected this chimpanzee, Oates et al. (2009) discovered that the type specimen of *vellerosus* had been collected not in Cameroon, but in Gabon, where Burton had travelled in March 1862 after completing his expedition to Mount Cameroon in the previous month. The skin of the Gabonese chimpanzee was probably shipped to London in the same consignment as Burton's Mount Cameroon specimens, leading to the confusion in Gray's account. Because *vellerosus* is from Gabon, that name was then a synonym of *Pan troglodytes troglodytes*, so that a different name had to be selected for a subspecies in western Cameroon and southern Nigeria. From two available names, *ellioti* and *oertzeni*, Oates et al. (2009) chose the name *ellioti* given by Matschie (1914) to a specimen in the Berlin Museum collected by Jasper von Oertzen near Basho in Cameroon in 1905.

How *P. t. ellioti* is Related to Other Chimpanzees

Classifying chimpanzees from Nigeria and western Cameroon into a separate subspecies remains controversial (Fischer et al. 2006; Becquet et al. 2007). Over the last 80 years, most primatologists have divided chimpanzees into only three subspecies: *P. t. verus*, *P. t. troglodytes* and *P. t. schweinfurthii* (see Groves 2001). However, in 1997, limited DNA sequence data from mitochondrial (mt)DNA gathered from hairs shed into chimpanzee sleeping nests at Gashaka-Gumti National Park revealed a different picture of how chimpanzee populations are structured across Africa (Gonder et al. 1997). These genetic data indicated that chimpanzees in Nigeria belong to a group that shares a closer evolutionary relationship with *P. t. verus* than with *P. t. troglodytes*, and that *P. t. verus* and Nigerian chimpanzees are more distantly related to each other than *P. t. troglodytes* is to *P. t. schweinfurthii*. Given this pattern of relationships, *P. t. vellerosus* (now known as *P. t. ellioti*), was chosen as a name for the Nigerian chimpanzees. Following that study, analysis of mtDNA sequences from hairs collected in more than 100 nests at locations across Nigeria and Cameroon (Gonder et al. 2006) revealed that: (A) *P. t. ellioti* shared a last common ancestor with *P. t. verus* approximately 400–600 thousand years ago; (B) the southern extent of the range of *P. t. ellioti* is in central Cameroon near the Sanaga River; (C) a small hybrid zone between *P. t. ellioti* and *P. t. troglodytes* may exist in central Cameroon around the confluence of the upper Sanaga River and its main tributary, the Mbam River; and (D) the western extent of the range of *P. t. ellioti* may extend only to eastern Nigeria. This last finding was based on very limited genetic data from western Nigeria, leading to uncertainty about whether chimpanzees in western Nigeria were more similar to *P. t. verus*, or to populations in eastern Nigeria. The morphological evidence regarding the distinctiveness of Nigeria-Cameroon chimpanzees is sparse (Pilbrow 2006; Taylor and Groves 2003).

Initial genetic studies of chimpanzees from Nigeria and Cameroon relied on examining mtDNA sequences. However, mtDNA has limited value for reliably inferring evolutionary relationships or for examining how populations are structured; it is inherited exclusively from the mother, thus providing a picture of the genetic history of females only. Studying additional regions of the genome can reveal more about the history of these chimpanzees. Recent studies have included many regions from the genomes of chimpanzees from Cameroon and Nigeria (Ghobrial et al. 2010; Stone et al. 2010). These new genetic data indicate that: (A) chimpanzees designated as *P. t. ellioti* form a group that is significantly different from

Approximate range of chimpanzees across Africa.



Chimpanzee nest, Mbam & Djerem National Park, Cameroon. Photo: Bernard Fosso, WCS Cameroon

all other chimpanzees; (B) *P. t. ellioti* split from *P. t. verus* 460,000 years ago and split from *P. t. troglodytes* 320,000 years ago; (C) the Sanaga River probably separates *P. t. ellioti* from *P. t. troglodytes*; and (D) *P. t. ellioti* has experienced a complex demographic history that presently includes some hybridization with *P. t. troglodytes*.

Natural History of Nigeria-Cameroon Chimpanzees

Relatively little is known about the life-history parameters, behaviour and ecology of wild chimpanzees in Cameroon and Nigeria, particularly when compared to chimpanzees in East Africa which have been studied since the 1960s. There are, however, two long-term studies of *P. t. ellioti* chimpanzees underway—in the dry forest and forest galleries of Gashaka-Gumti National Park in Nigeria (since 2000), and in the lowland and sub-montane moist forest of the proposed Ebo National Park in Cameroon (since 2002). Studies at Gashaka have revealed some of the first data available for this subspecies. They include a mean nest group size of 4.8 weaned adults (Fowler 2006), and high frequencies of chimpanzee insectivory (honey bees, stingless bees, army ants) aided by stick tools; interestingly, however, these chimpanzees do not appear to eat termites (Fowler and Sommer 2007). Conversely, in the Ebo forest, chimpanzees are regular and skilful constructors and users of tool kits for termite fishing (Abwe and Morgan 2008), and use stone or wooden hammers and anvils to crack open hard-shelled fruits to extract the nutritious kernel, a behaviour not previously recorded in chimpanzees east of Ivory Coast (Morgan and Abwe 2006). These stark differences between Nigeria-Cameroon chimpanzee populations raise fascinating questions as to what conditions encouraged the development of such culturally-specific behaviours: or, conversely, what might have led to the loss of such behaviours in many other chimpanzee populations (Wrangham 2006).

The Range of the Nigeria-Cameroon Chimpanzee is a Global Hotspot of Biodiversity

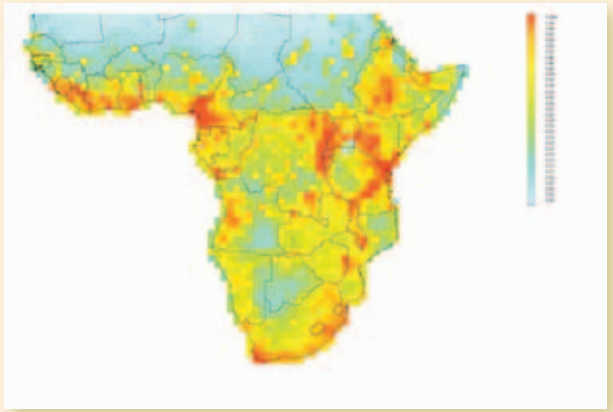
The area inhabited by *Pan troglodytes ellioti* coincides with a biodiversity hotspot of global significance (called the Gulf of Guinea region by Oates et al. 2004), one that combines a great richness of species with high levels of endemism, and where nature is under very serious threat from human activities. Levels of endemism among primates, mammals generally, birds and amphibians in this region are some of the highest in Africa, and available data from lesser-known taxa such as dragonflies and freshwater fish suggest similar patterns. The forest zone that extends through southern Nigeria to the Sanaga River in Cameroon harbours 24 primate species in addition to the Nigeria-Cameroon chimpanzee. If neighbouring Bioko Island and the Republic of Benin are included, and if the classification of Grubb et al. (2003) is used, eight of these species are found nowhere else in the world. Thirteen primate subspecies and two species, in addition to the chimpanzee itself, occur only within the range of *P. t. ellioti*; one of these is the Critically Endangered Cross River gorilla (*Gorilla gorilla diehli*). This high level of endemism is a consequence of the area's unique geography and history, including the probable presence of one or more forest refuges during Pleistocene glaciations. Measures taken to conserve the Nigeria-Cameroon chimpanzee, such as the protection of forest habitat and the control of hunting, will also benefit many of the other unique and threatened animals found in the Gulf of Guinea forests.

How Many Nigeria-Cameroon Chimpanzees Remain?

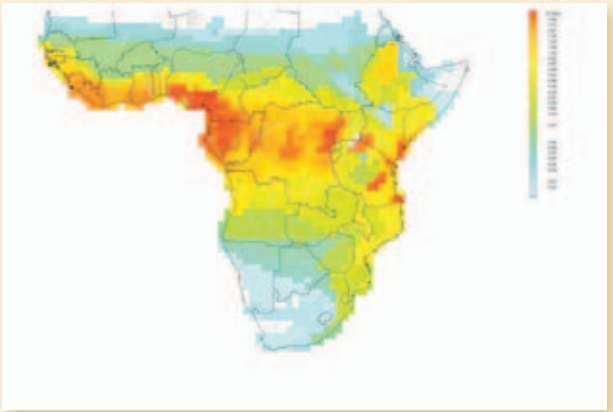
Estimating populations to a high degree of accuracy and precision in the forests of Cameroon and Nigeria is difficult because these apes, like many other species, now survive at relatively low densities. Moreover, within a single site, chimpanzees may be concentrated in a subsection of that habitat, and surveys need to be conducted in each separate 'stratum' of the site (perhaps representing different habitats) in order to obtain accurate density levels across the whole area—meaning a large investment in terms of time and funds. In general, unless a survey is thorough enough to detect a

Many species exhibit high levels of endemism in the Gulf of Guinea region. (a) Combined mammal, bird and amphibian species endemism; (b) Primate species endemism (from Oates et al. 2004). The number of endemic species increases with increasing warmth of colour.

(a) All species endemism



(b) Primate species endemism



sufficient number of nest sites within each stratum, statistical reliability declines sharply, and alternate methods of gauging chimpanzee abundance (as opposed to absolute density) may be a more economical alternative. In cases where chimpanzees are believed to survive at extremely low densities, genetic mark-recapture surveys may be feasible, but this technique is only gradually gaining acceptance. It involves locating a large proportion of chimpanzee spoor throughout the site, which is expensive in terms of fieldwork and sampling procedures, and advanced technology is required to process and analyse samples, which is currently unfeasible in the region. Best Practice Guidelines for surveying apes are summarized in Kühl et al. (2008).

Despite the challenges of accurately counting chimpanzee numbers, we believe it is important to provide estimates of population sizes because these can give an indication of the seriousness of the situation facing the Nigeria-Cameroon chimpanzee. Although many of our estimates are little more than educated guesses, based on present evidence it seems likely that the largest surviving population, possibly around 1,000 individuals, exists in Gashaka-Gumti National Park, Nigeria. Gashaka is a mosaic landscape of semi-deciduous forest and savannah with low human population density and a local cultural aversion to eating primate bushmeat. In Cameroon, the healthiest populations of chimpanzees probably survive in Mbam & Djerem National Park, proposed Ebo National Park and Banyang Mbo Wildlife Sanctuary. Mbam & Djerem is a forest-savannah mosaic habitat, where at least 500 chimpanzees remain in the core zone of the park (Maisels et al. 2009); Ebo is a lowland-submontane forest and connected logging concession, where perhaps 750 chimpanzees remain; and a systematic survey of Banyang Mbo Wildlife Reserve found a relatively high chimpanzee nest density of 33.3 nest groups km^{-2}, equating to c. 500–1,000 individuals (Greengrass and Maisels 2007). We estimate that in total there are between 3,500 and 9,000 Nigeria-Cameroon chimpanzees remaining in the wild. There are a further c. 70 chimpanzees living in sanctuaries for captive primates in Cameroon and Nigeria. Estimates can be viewed at <www.ellioti.org/numbers>.

Monitoring Nigeria-Cameroon Chimpanzee Populations

Perhaps more important than estimating the numbers of chimpanzees at a particular site is the ability to detect a real change in their abundance at that site. Such changes may be rapid, and brought about by threats described in the following pages, or more gradual, and perhaps more difficult to detect. A greater understanding of the necessary sampling techniques for surveying chimpanzees to attain acceptable levels of both accuracy (proximity of the estimate to the real [true] number) and precision (the degree to which repeated surveys would give the same estimate) has been gained in recent years (Kühl et al. 2008) and we urge all those conducting surveys to follow such guidelines.

Since the priority sites and actions set out in this conservation action plan were based on available knowledge and data, it is likely that these priorities will change as work on understanding and conserving Nigeria-Cameroon chimpanzees moves forward in the coming years. We suggest that this process be reviewed in 2016, five years after publication of the current action-planning document, to fully reflect changes in information and conservation realities on the ground in the intervening period.

Recce survey passing through farmland in Shasha Forest Reserve, Nigeria. Photo: John Oates

It is important to provide estimates of population sizes because these can give an indication of the seriousness of the conservation situation facing the Nigeria-Cameroon chimpanzee.

Ecoguard training in the Mbam & Djerem National Park, Cameroon. Photo: Fiona Maisels, WCS

Threats to the Survival of Nigeria-Cameroon Chimpanzees

The main threats to the survival of wild populations of the Nigeria-Cameroon chimpanzee are the conversion and loss of habitat, and hunting. These threats are exacerbated by the continuing growth of human populations within the range of *P. t. ellioti* and the development of the economies of Cameroon and Nigeria. According to United Nations data, Nigeria's population has increased almost fivefold from 1950 to 2010 (from 36,680,000 to 158,259,000), and Cameroon's population has increased almost fourfold during the same time (from 4,466,000 to 19,958,000) (United Nations 2009). The prognosis is that the populations of these countries will again increase in the next twenty years: to nearly 29 million in Cameroon and to nearly 227 million in Nigeria (United Nations 2009).

Infectious disease is a potential threat to the future of the chimpanzees, but the devastating epidemics of Ebola virus that have decimated some Central African ape populations have not been recorded in the range of *P. t. ellioti*. Nevertheless, emerging diseases are being detected in West Africa chimpanzee populations (e.g., Boesch 2008) and even the fragmented nature of the Nigeria-Cameroon chimpanzee populations may not provide a barrier to limit the spread of disease outbreaks in the region (Box 2).

Hunting

As the human population has grown steadily in both Cameroon and Nigeria, the ease of access to arms, more efficient transport systems, and higher financial incentives for supplying urban markets with bushmeat and other forest commodities has led to a 'bushmeat crisis' whereby swathes of land formerly important as wildlife sources have been cleared of animals, and often also their forest cover. Hunting of chimpanzees to supply the bushmeat trade and, to a lesser extent, to provide traditional medicines is almost certainly the greatest threat to the survival of most *P. t. ellioti* populations. Although most chimpanzees are hunted with guns, they are also caught in snares set for terrestrial animals.

Several lines of evidence point to the devastating impact of hunting. For example, there are large areas of suitable chimpanzee habitat in the Okwangwo division of the Cross River National Park and the adjacent Takamanda National Park where chimpanzees are encountered at low frequencies, and which suffer from high hunting pressure (Mboh and Warren 2007; Imong and Warren 2008). In a six-month study of rural markets in southeastern Nigeria and southwestern Cameroon in 2002–2003, Fa et al. (2006) recorded 240 chimpanzee carcasses. In a five-week period in 2009, a Wildlife Conservation Society survey of eight markets in the transboundary region of Cross River State, Nigeria, found six chimpanzee carcasses. Many of the carcasses found in eastern Nigerian markets probably derive from Cameroon and are traded with Nigeria where there are more people and where bushmeat fetches higher prices. Given the slow reproductive rate of chimpanzees, and the limited number of chimpanzees persisting in the wild in many areas, this hunting pressure cannot be sustainable.

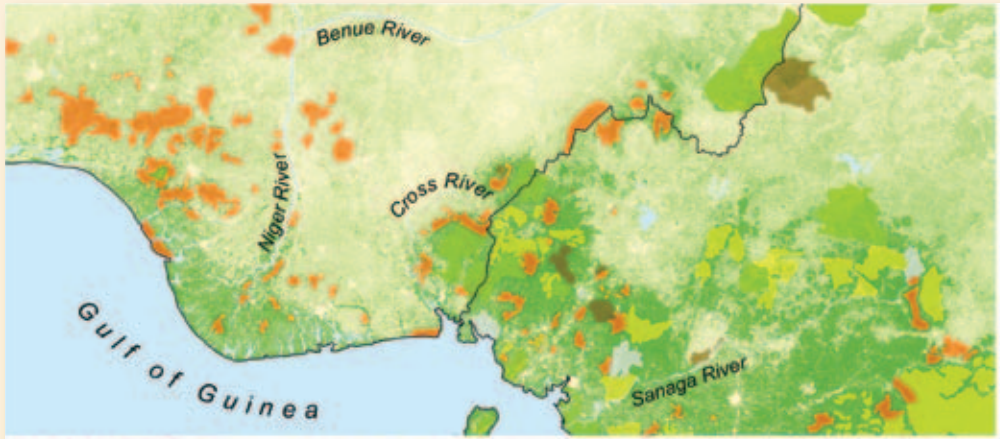
Box 2
Disease

Unlike other areas of Africa, outbreaks of Ebola have not been found in chimpanzees occupying Nigeria or Cameroon to date; but these populations do harbor anthrax and multiple strains of malaria. Field-based research programs should be encouraged to coordinate with sanctuaries for rescued animals, ministries and the Global Viral Forecasting Initiative to establish procedures to investigate and sample chimpanzee carcasses and other biological remains to track and monitor disease outbreaks.

The distribution of pathogens can play an important role in understanding the evolutionary history of chimpanzees and the origins and spread of diseases shared between apes and humans. For example, Simian Immunodeficiency Virus (SIV) found in chimpanzees occupying southern Cameroon is the most likely progenitor of HIV-AIDS in humans, but SIV does not occur in *P. t. ellioti* (Sharp et al. 2005; Keele et al. 2006; Van Heuverswyn et al. 2007). The reasons for this difference in the distribution of SIV are unclear, but *P. t. ellioti* may hold important clues for understanding how HIV transmission may be blocked by the body's immune defenses.

A hunter with two red-eared monkeys killed in the Cross River National Park (Okwangwo Division), Nigeria. Photo Inaoyom Imong, WCS Nigeria

Forest cover, human population density and priority conservation sites across the range of *Pan troglodytes ellioti*.



Forest Cover and Designated Areas

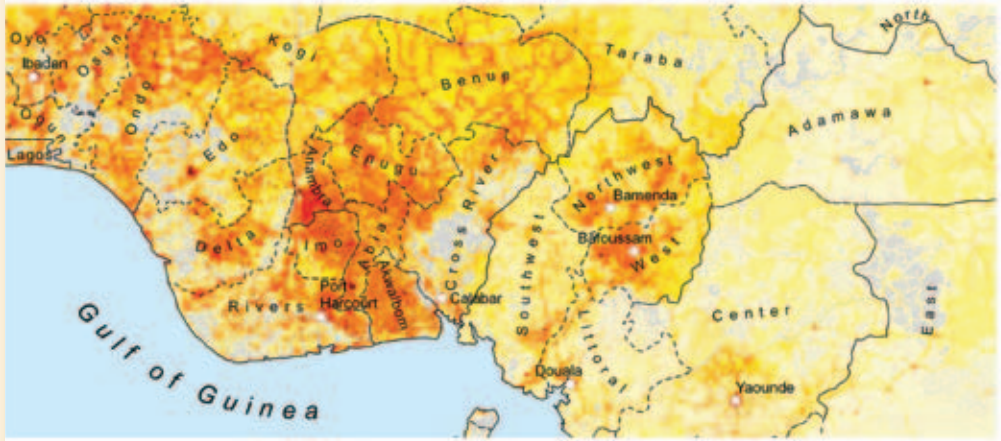
Protected Areas and Concessions

- National Park
- Wildlife Sanctuary
- Forest and Game Reserves
- Proposed Reserve
- Logging Concession

Percent Tree Cover

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100

Data:
Protected areas: UNEP-WCMC World Database of Protected Areas; Ministry of Forests and Wildlife (Cameroon); unpublished data.
Tree Cover: MODIS Vegetation Continuous Fields (Hansen et al., 2003), University of Maryland Global Land Cover Facility



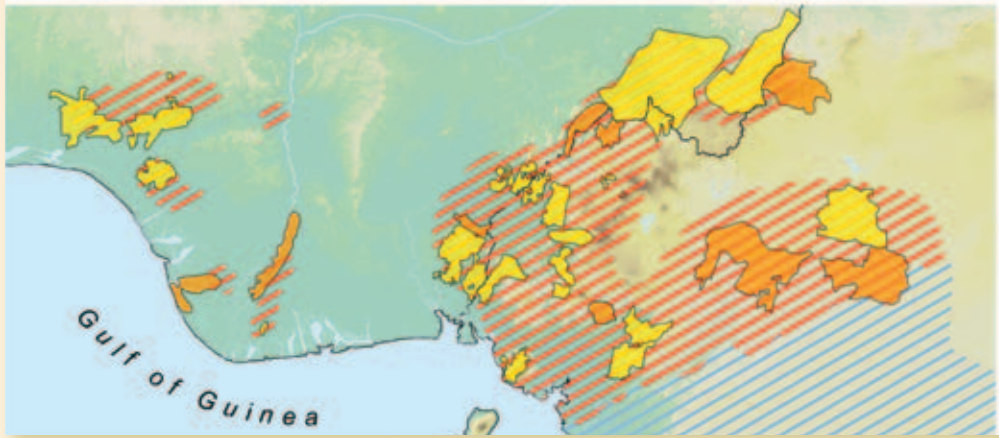
Human Population

Human Population Density per km²

- <1
- 1 - 5
- 6 - 25
- 26 - 50
- 51 - 100
- 101- 500
- 501 - 2,500
- 2501 - 5,000
- 5001 and above

- Major Cities and Towns Within Chimpanzee Range
- State and Region Boundaries

Data:
Human Population: LandScan Global Population Database 2008.



Priority Conservation and Survey Sites

- Priority Chimpanzee Conservation Sites
- Priority Survey Sites

Approximate Chimpanzee Range

- *Pan troglodytes ellioti*
- *Pan troglodytes troglodytes*

0 75 150 300
Kilometers

Elevation (m)

4000
3000
2000
1000
Sea level

Data:
Elevation: NASA Shuttle Radar Topography Mission.
Chimpanzee distribution: Compiled at 2009-2010 Limbe and Calabar action planning workshops.

Habitat Loss

Forest within the range of *P. t. ellioti* continues to be lost, fragmented, and degraded; converted through agriculture, logging, grazing and fire. In Nigeria, several forest reserves have been converted to farmland and to commercial oil palm and rubber plantations.

Ministry of Forestry and Wildlife officers arrest illegal loggers in Cameroon. Photo: WCS Takamanda-Mone Landscape Project

Large areas of forest surrounding key protected areas such as Okomu and Cross River National Parks have already been converted to oil palm plantations. Extensive new oil palm developments are also underway in Cameroon, in both Littoral and South West regions. In Cameroon, new logging concessions continue to be established, and logging companies can quickly clear and upgrade existing seasonal roads to support the evacuation of timber year round. This road access opens up the forest to more intense hunting pressure (Laurance et al. 2006; Wilkie et al. 2000), and the noise and disturbance associated with hunting causes chimpanzees to change their ranging patterns, sometimes moving into areas occupied by other chimpanzee communities, where they face aggression (White and Tutin 2001). Logging, especially in southwestern Nigeria, has often been followed by replacement of the forest by farmland; where farming becomes intensive there is a permanent loss of chimpanzee habitat.

Habitat loss also occurs in the drier parts of this chimpanzee's range (such as Mbam & Djerem and the Bamenda Highlands in Cameroon, and Gashaka-Gumti and Mambilla in Nigeria) where pastoralists encourage the destruction of forest by fire to provide more grazing for their cattle, and which may then be converted to farmland.

Population Fragmentation

This combination of loss of habitat and hunting has been gradually fragmenting populations of *P. t. ellioti*, so that many of the remaining populations are now small and isolated; they are therefore at increased risk of extinction from disease and other unpredictable events.

Dry season on Obudu Plateau, Nigeria. Forest cover in this area has been reduced by years of burning, grazing and farming. Photo: John Oates

View of Old Ndebiji Hill and Ridge. Photo: Mary Gartshore

General Approaches to Chimpanzee Conservation in Cameroon and Nigeria

Historically, the conservation of chimpanzees and other flagship species across the region was approached through the creation of protected areas such as national parks, with clearly defined, legislated and enforced levels of permitted exploitation. These protected areas, however, have generally received inadequate resources for their effective management due to the insufficient government budgets assigned to these areas and, to a varying extent, the 'value' placed on maintaining areas as wildlife refuges. Today the process of creating and effectively protecting national parks, faunal reserves and similar protected areas has been reinvigorated, particularly in Cameroon, and there are currently nine national parks and two wildlife sanctuaries in the range of *P. t. ellioti*. Such areas may offer the only hope of (at least in theory) sustaining populations given the burgeoning needs of the ever increasing human population worldwide.

Many chimpanzees exist outside protected areas, and there has been a rise in the application of community-based conservation measures across the region, which might also be of benefit. However, the mechanisms and structures put in place in these community-based initiatives vary enormously in formality, scale, budgets, and specific aspects of their implementation. We do not detail these initiatives as specific priority actions in this plan, since they cut across the whole range of the Nigeria-Cameroon chimpanzee (and beyond), and are rarely targeted specifically towards the conservation of chimpanzees. Neither do we attempt to put a cost on implementing these activities in each landscape unless it is evident that a particular action would provide a specific, and well understood benefit to chimpanzee conservation in that area.

Education Outreach Programmes

Instigating education outreach programmes to communities living in close proximity to chimpanzees and other flagship species is often high on the agenda of conservation NGOs. This results from the assumption that long-term change can best be achieved through accelerating change in societal attitudes towards wildlife. Whilst incontrovertible examples of such programmes leading to a decrease in wildlife exploitation have yet to be demonstrated from the region, studies from elsewhere point to the value of such projects (Jacobson 2010). Better coordination of such programmes would benefit several small field projects, where the people involved may not have the time, resources nor experience to instigate their own outreach programmes. We therefore call for more collaboration between organizations to this end, perhaps through outsourcing such activities to organizations with special skills in that domain.

A related tool, that of increasing public awareness of the benefits and value of wildlife conservation is becoming easier to achieve as Cameroon and Nigeria, together with the rest of the world, become more connected to the global community. The use of media such as radios, that are common even in remote villages, as well as the increasingly ubiquitous televisions and internet access allow for new opportunities in conveying information on both local and national scales. In Cameroon, the wildlife law enforcement organization LAGA targets national media as a primary tool for publicising arrests, with the specific goal of attempting to change societal attitudes to wildlife crime through increasing public awareness of penalties and consequences. Conservation NGOs and wildlife sanctuaries tend to use media internationally as a fund-raising tool, but we believe that there needs to be more of a move towards informing the general public about conservation initiatives within Cameroon and Nigeria.

Increasing Institutional and Human Capacity

Increasing institutional and human capacity in Cameroon and Nigeria poses enormous challenges. Developing the capacity of national conservation managers, researchers and government officials against a background of widespread corruption makes progress gradual, at best. Nevertheless, amplified investment in national conservation leaders is an important and currently underfunded activity. Encouraging local capacity should be a cornerstone of all conservation NGO work, whether it be through supporting further education opportunities, or establishing or contributing to improving existing centres of further education (such as the A.P. Leventis Ornithological Research Institute at the University of Jos, Nigeria).

At a local scale, initiatives such as encouraging community participation in local conservation projects has often been incidental — increasing casual employment, or triggering a market for village commodities such as locally-produced food, for example. There are increasing cases, however, of communities taking a more active role in preserving the forests over which they might have previously had traditional access rights. For example, the nine communities surrounding the Mbe Mountains, Nigeria were assisted to form the Conservation Association of the Mbe Mountains in 2005. Through this association, all nine communities are now actively involved in the management and conservation of the area and levels of hunting have declined. However, the association relies on NGO funds to pay for meetings and on a WCS-managed eco-guard programme to protect the mountain and its wildlife.

Chimpanzee Conservation Planning Units and Priority Sites for Nigeria-Cameroon Chimpanzees

In the final workshop of our series, it was decided to organize this conservation action plan according to eight geographical 'Chimpanzee Conservation Planning Units' (CCPUs), which in many cases coincided with political boundaries in Nigeria and Cameroon. We estimate that more than 95% of Nigeria-Cameroon chimpanzees exist in these units, and the threats facing the chimpanzees in each are broadly similar. We recorded and classified all sites known to harbour chimpanzee populations in each of the CCPUs. They fall under a variety of management regimes—some are protected areas such as national parks, others are logging concessions, and yet others are unclassified or community forests.

We then evaluated each site by comparison with other sites within that particular CCPU, with a view to identifying those which offer the best chance for the long-term survival of chimpanzees. By looking at sites in this way, we ensured that we gave priority to sites from a wide range of habitats across the current range of the Nigeria-Cameroon chimpanzee. Consequently, we were able to give emphasis to the protection of the genetic, ecological and (potentially) cultural variability of chimpanzees across their range, facilitating politically-mediated action at increasingly decentralized regional government levels. The planning units help to highlight some of the smaller or more isolated chimpanzee populations that might otherwise be sidelined in a conventional action-planning document where large populations are given prominence.

To rank the relative importance of different sites in each Chimpanzee Conservation Planning Unit, we considered the following factors:

1. **Chimpanzee relative density** as estimated from the literature and from field researchers (see <www.ellioti.org/tables> for the latest information). While the majority of sites have few or poor data for chimpanzee density, we believe it is important that our prioritization is based on the available science. We ranked estimates within each CCPU, with the higher estimates given a score of 3, the low estimates a score of 1, and intermediate estimates a score of 2.

2. **The area of potential chimpanzee habitat** covered by the site, which might include areas adjacent to a protected areas or logging concession if chimpanzees were known to exist outside its boundaries. Again ranking within each CCPU, we scored the largest areas of potential chimpanzee habitat with a 3, the smallest areas with a 1, and the middle-sized ranked areas with a 2.

3. **The long-term conservation potential** of each site was derived from a range of qualitative factors such as the presence of a protected area and/or long-term conservation NGO involvement. Factors deemed to have both positive and negative impacts (e.g., proposed dam construction, which could increase human population and destroy habitat, but also increase tourism potential and funding for protection) were discussed at the workshop in regional-specific workgroups and evaluated accordingly. In addition to ranking sites where we believe it is unlikely that there is a long-term conservation potential with a score of 1, sites where there is a possibility of conservation success with a 2, and sites where there is a good chance of conservation success with a 3, we also allowed a score of 4 for sites where believe there to be an exceptional chance of conservation success in the long term.

We then summed scores from these three factors, and classed as '**Exceptional Priority Sites**' those scoring at least 8, and '**Important Priority Sites**' those sites with a score of at least 6.

A village inside Boshi forest, Cross River National Park, Nigeria. Photo: Inaoyom Imong, WCS Nigeria

Priority Conservation Sites in the Chimpanzee Conservation Planning Units for Nigeria-Cameroon Chimpanzees.

Priority Chimpanzee Conservation Site	Chimpanzee Conservation Planning Unit (CCPU)	Score for chimpanzee relative density (only comparable within each CCPU)	Basis for density estimate	Score for area of potential chimpanzee habitat (only comparable within each CCPU)	Score for long term conservation potential of site (only comparable within each CCPU)
Exceptional priority sites (score of 8+)					
Okomu Forest Reserve & National Park	Southwestern Nigeria	2	Estimate	2	4
Idanre Forest Cluster	Southwestern Nigeria	2	Estimate	3	3
Omo Forest Cluster	Southwestern Nigeria	1	Estimate	3	3
Edumanom Forest*	Niger Delta, Nigeria	2	Guestimate	3	3
Oban Division, CRNP	Cross River State, Nigeria	2	Estimate	3	3
Gashaka-Gumti National Park	Taraba State, Nigeria	3	Estimate	3	3
Mount Cameroon Cluster	South West Cameroon	3	Transects	3	4
Takamanda Complex	South West Cameroon	2	Recce and Transects	3	4
Banyang Mbo Wildlife Sanctuary	South West Cameroon	3	Transects	2	3
Korup National Park	South West Cameroon	1	Transects	3	4
Mone-Oko Complex	South West Cameroon	2	Recce and Transects	3	3
Lebialem Complex	South West Cameroon	3	Recce	3	2
Kom-Wum Forest Reserve	North West Cameroon	3	Estimate	2	3
Proposed Ebo National Park	Littoral Region, Cameroon	3	Recce	3	3
Mbam & Djerem National Park	Centre Region, Cameroon	3	Transects in core zone; Recce elsewhere	3	4
Important priority sites (score of 6–7)					
Ise Forest Reserve	Southwestern Nigeria	3	Estimate	1	2
Okwangwo Division, CRNP	Cross River State, Nigeria	2	Recce	2	3
Afi Complex	Cross River State, Nigeria	1	Estimate	2	3
Mbe Mountains	Cross River State, Nigeria	2	Estimate	1	3
Southern Taraba	Taraba State, Nigeria	1	Estimate at Ngel Nyaki; Guestimate elsewhere	3	2
Bakossi National Park	South West Cameroon	2	Estimate	2	3
Ako-Mbembe Forest Reserve	North West Cameroon	2	Guestimate	3	2
Fungom Forest Reserve	North West Cameroon	1	Guestimate	3	2
Tubah-Awing Forest	North West Cameroon	2	Estimate	1	3
FMU-004	Littoral Region, Cameroon	2	Transects	3	2

* This is the most likely place where chimpanzees still survive in the Niger Delta region, and despite being unable to rank the site comparatively within its CCPU we believe it is a high priority for conservation action

Southwestern Nigeria Chimpanzee Conservation Planning Unit

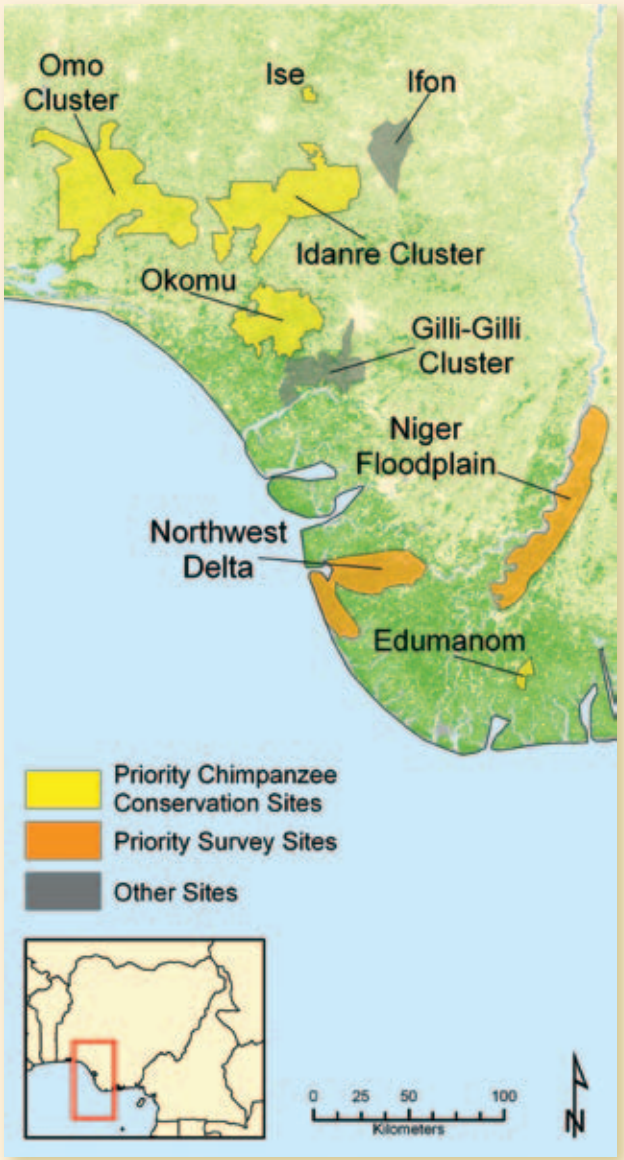
THIS PLANNING UNIT has several distinct features. Based on present evidence, the forest zone of southwestern Nigeria is the most westerly area still inhabited by *Pan troglodytes ellioti*. Chimpanzees may have occurred even further west in the Republics of Benin and Togo at least until the 1960's (Kormos et al. 2003), but the relationship of those chimpanzees to *P. t. ellioti* is not known. Some other mammals, such as the red-bellied or white-throated monkey (*Cercopithecus erythrogaster*) and the Benin potto (*Perodicticus potto juju*), are known only from Togo, Benin and western Nigeria, and it is possible that the chimpanzees of this region are not identical to other *P. t. ellioti*.

The forest zone of southwest Nigeria, which extends 150–200 km inland from the Gulf of Guinea, has a dense human population (including some of the largest cities in Africa, such as Lagos, Ibadan and Benin City), and a long history of development (including the exploitation of its forests for timber). Consequently, the remaining forest is badly fragmented and the remnants have mostly been heavily disturbed; larger mammals, including chimpanzees, have long been hunted by people to provide food, medicine or decoration. Therefore, the chimpanzees that remain are under huge pressure.

Surveys indicate that the remaining chimpanzees in this area are concentrated in three forest clusters, with a few peripheral population isolates. The clusters are: (1) Omo, Ago-Owu, Shasha and Oluwa Forest Reserves in Ogun, Osun and Ondo States; (2) Idanre, Akure-Ofosu, Ala, Owo and Ohosu Forest Reserves in Ondo and Edo States; and (3) Okomu, Gilli-Gilli, Ekenwan and Ologbo Forest Reserves in Edo State. The large Osse River separates Okomu from Gilli-Gilli, so we here treat Okomu (which contains a National Park) as a separate management unit. The Gilli-Gilli cluster includes the Gilli-Gilli Forest Reserve, which has been the site of a project by the NCF, funded by the Shell Petroleum Development Company, since 2007, as well as the Ologbo Forest Reserve, which is connected by the intervening Ekenwan Forest Reserve. Among peripheral sites confirmed or suspected to contain chimpanzees are Ise Forest Reserve in Ekiti State and Ifon Forest Reserve in Ondo State. Ifon (282 km²) lies on the forest-derived savannah boundary. Recent studies by the NCF revealed that about 50% of the original forest cover had been lost and that the remaining fragmented forest patches were interspersed with new farms, plantations, and grassland. Ifon has been the site of a collaborative conservation project between the NCF and the Ondo State Government since 2005; in 2006, Greengrass (2006) found a few signs of chimpanzees at Ifon; in 2008, it was questioned whether a chimpanzee population was still present (Ogunjemite and Oates 2008). There is a need to conduct further surveys at several peripheral sites in Southwestern Nigeria where chimpanzees have been reported but not in recent years confirmed, such as the Weppa Farm in Agenebode, Edo State.

Southwestern Nigeria Site Names	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Okomu Forest Reserve & National Park	2	2	4	8
Idanre Forest Cluster	2	3	3	8
Omo Cluster	2	3	3	8
Ise Forest Reserve	3	1	2	6
Gilli-Gilli Cluster	1	2	2	5
Ifon Forest Reserve	1?	2	2	5

Southwestern Nigeria and Niger Delta priority chimpanzee conservation and survey sites.



EXCEPTIONAL PRIORITY SITES Southwestern Nigeria

Okomu Forest Reserve and National Park

With an area of about 1,200 km², Okomu was once one of the largest forest reserves in western Nigerian. Today, much of the forest in the reserve has been converted into commercial plantations of oil palm and rubber, and to farmland growing cassava and other crops; many of the farmers are migrants from other parts of Nigeria. In 1985, a 68-km² wildlife sanctuary was created in logged forest in the eastern-central part of the reserve, and this was later expanded to 116 km² and made into a national park (Oates 1999). Natural forest now survives only in the park, in a relatively small area immediately south of the park, and on swampy ground near the Osse and Siluko rivers bordering the reserve. Chimpanzees occur in Okomu, though not in large numbers, and the forest has a rich bird fauna as well as populations of white-throated monkeys (*Cercopithecus erythrogaster pococki*), red-capped mangabeys (*Cercocebus torquatus*), and elephants. The national park is relatively well protected from logging and farming, but anti-poaching measures are not fully adequate. Accommodation for visitors and researchers has been built at the site of the former forestry quarters in the park.

Okomu Forest Reserve and National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Cease all forest conversion in land around the national park and incorporate these areas into the park; strengthen stakeholder partnerships with plantation companies	NNP, Okomu Oil Palm Company	5 years	$25,000
• Build capacity of park staff to undertake law enforcement activities and conduct wildlife monitoring	NNP	5 years	$100,000
• Establish research station and encourage broader research work	Universities	5 years	$100,000
• Strengthen environmental awareness and outreach programme, especially to plantation communities and schools	NNP, plantation companies	5 years	$75,000

Gmelina plantation on the northern edge of the Shasha Forest Reserve, Nigeria. Photo: John Oates

Idanre Forest Cluster

This cluster of five forest reserves in Ondo and Edo States may contain the largest contiguous area of natural forest remaining in western Nigeria. Evidence of chimpanzees has been found in recent years in the interconnected Idanre, Akure-Ofosu and Ohusu Forest Reserves (Greengrass 2006, 2009; Ogunjemite and Oates 2008; Ikemeh 2009). The reserves suffer from poorly controlled logging, agricultural encroachment, and uncontrolled hunting. Red-capped mangabeys (*Cercocebus torquatus*), white-throated monkeys (*Cercopithecus erythrogaster pococki*) and elephants also occur in this forest cluster. Idanre has been suggested for a Reducing Emissions from Deforestation and Degradation (REDD) project (see Box 8, page 44) and is a scenic area with tourism potential.

Idanre Forest Cluster Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Enforce existing laws protecting endangered species, and control logging and farming in chimpanzee habitats; include capacity-building for relevant state forestry staff	Ondo State Government, NCF	5 years	$100,000
• Clarify distribution and abundance of chimpanzees	Ondo State Government, NCF	1 year	$25,000
• Conduct feasibility study for one or more conservation areas, taking account the tourist potential of Idanre and` surrounding hills	Ondo State Government, NCF, Federal University of Technology Akure	1 year	$50,000
• Initiate environmental awareness programme for surrounding communities	NCF	5 years	$75,000

Omo Forest Cluster

This cluster of five forest reserves located where Ogun, Osun and Ondo States meet was estimated in 2008 to contain 1,125 km² of natural, though logged, forest, mostly in western Omo, southern Shasha, southern Ife and central Oluwa Forest Reserves. While there are tenuous connections between the remaining forests of Omo, Ife and Shasha, the central Oluwa forest is separated from the other areas by a zone of settlements and cultivation (Oates et al. 2008b). After years of logging and hunting, chimpanzees are now rare in this cluster, with most signs in recent years being found in Oluwa (Greengrass 2006, 2009). The Nigerian Conservation Foundation (NCF) is working with state governments to establish conservation areas in which logging, farming and hunting are prohibited. The forests contain several other threatened primate species, as well as a population of elephants.

River running through the Omo Forest Reserve, Nigeria. Photo: Richard Bergl

Omo Forest Cluster Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Create formal conservation areas and develop management plans, to include resources for law enforcement and resettlement of illegal farmers	Ogun, Osun and Ondo State Governments, NCF	5 years	$250,000
• Clarify distribution and abundance of chimpanzees	NCF, Federal University of Technology Akure	1 year	$25,000
• Conduct socioeconomic survey to evaluate sustainable livelihood options for surrounding communities	NCF, Ogun, Ondo and Osun State Governments	1 year	$25,000
• Expand environmental education programmes	NCF, Paignton Zoo	5 years	$75,000

IMPORTANT PRIORITY SITE Southwestern Nigeria

Ise Forest Reserve

This is a very small reserve (62 km²) in Ekiti State, bordered on its western edge by the Ogbesse River and on its other sides by farmland and human settlement. The forest has been heavily degraded by logging but most of it has escaped conversion to farmland. Hunting occurs, but dense growth may impede the ability of hunters to kill chimpanzees. In 2006, Greengrass estimated that up to 50 chimpanzees might still survive in the reserve (Greengrass 2006). This is the only site where the survival of chimpanzees in Ekiti State has been confirmed. The Nigerian Conservation Foundation is planning to work with Ekiti State to bring better conservation to Ise.

Ise Forest Reserve Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Develop the forest reserve as a conservation site (unique in Ekiti) and limit logging, farming and hunting	Ekiti State Government, NCF	5 years	$100,000
• Conduct analysis as to the long-term viability of the chimpanzee population, including assessment of potential connectivity to other habitat	Ekiti State Government, NCF, Federal University of Technology, Akure	1 year	$50,000
• Outreach to local communities and citizens of Ekiti to increase awareness of the significance of Ise and its chimpanzees	Ekiti State Government, NCF	5 years	$50,000

Niger Delta Chimpanzee Conservation Planning Unit, Nigeria

The Niger Delta is the largest river delta system in Africa. Although its limits are not easily defined precisely, it can be considered to cover between 25,000 and 30,000 km², extending south from Aboh on the Niger, east to the mouth of the Imo River and west to the mouth of the Benin River, in Delta, Bayelsa and Rivers states. Within this region is a maze of waterways: tributaries of the Niger itself, rivers draining into those tributaries, and creeks running in from the Gulf of Guinea. The whole area is very low-lying, has high rainfall, and would once have been covered in forest: mangrove fringing the coast, marsh forest in the central (or "core") delta, seasonal swamp forest on the floodplain of the lower Niger, and a mosaic of dry-land moist forest and swamp forest on the eastern and western flanks. The natural vegetation of a chain of sandy barrier islands fringing the delta is also a mosaic, including swamp forest. The delta is home to a number of endemic animals, notably the Niger Delta red colobus monkey (*Procolobus epieni*) and the presumed-extinct Niger Delta pygmy hippopotamus (*Hexaprotodon liberiensis heslopi*).

There is no evidence that chimpanzees recently or historically occurred in the mangrove or central marsh forests of the delta, but there are records from the floodplain swamp forest and flanking forest zones, and unconfirmed reports from the western barrier islands (Oates 1989; Powell 1995). Only in one area, Edumanom, in the eastern flanking forest in Bayelsa State, does a chimpanzee population still certainly survive, but there are also past records and reliable reports of their occurrence from the floodplain forests to the east of the Niger, as well as reports from the flanking forest on the northwest edge of the delta, in the vicinity of Patani (Powell 1995; Baker 2005; Bocian 1998, 1999; Werre 2000). The evolutionary relationships of the chimpanzees in the Niger Delta region have not been ascertained using molecular genetics.

In this planning unit there is no area formally designated for wildlife conservation, and many destructive forces are at work: oil exploration and extraction, uncontrolled artisanal-scale logging, subsistence and plantation agriculture, road construction, and hunting. Surveys and organized conservation activity are made challenging by the widespread insecurity affecting the Niger Delta region. There is only one site in this CCPU with a probable chimpanzee presence. The western flanks of the delta, as well as the eastern floodplain of the Niger remain poorly known and, given the pressures on this area, if any chimpanzees do still exist their long-term probability of survival is extremely low.

Gas flaring along the Ebocha-Omoku road, Rivers State, Nigeria. Photo: Lynne R. Baker

EXCEPTIONAL PRIORITY SITE Niger Delta, Nigeria

Edumanom Forest

The lands of the communities of Etiema and Okoroba, north of Nembe in Bayelsa State, support the 87 km² proposed Edumanom Forest Reserve; this area adjoins forested land of the Emago-Kugbo community in Rivers State. The forest is on swampy land and, although the hunting of chimpanzees is not taboo, rituals surround their killing (Bocian 1998, 1999); these factors have probably contributed to the survival of this important relic population, which was still present in early 2006 (Lynne R. Baker unpublished report). Two road projects threaten the area and the small and isolated nature of the chimpanzee population makes its long-term survival precarious.

Edumanom Forest Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Upgrade status to formal protected area; stop all logging and hunting	Bayelsa State Government, local NGOs	3 years	$150,000
• Undertake an awareness campaign directed at both local communities and the state government, emphasizing the unique and precarious nature of this chimpanzee population	Local NGOs, Baylor University	5 years	$75,000
• Conduct further research on the chimpanzee population, using genetics both to understand its viability and its relationship to other populations	SUNY–Albany	1 year	$50,000

Cross River State Chimpanzee Conservation Planning Unit, Nigeria

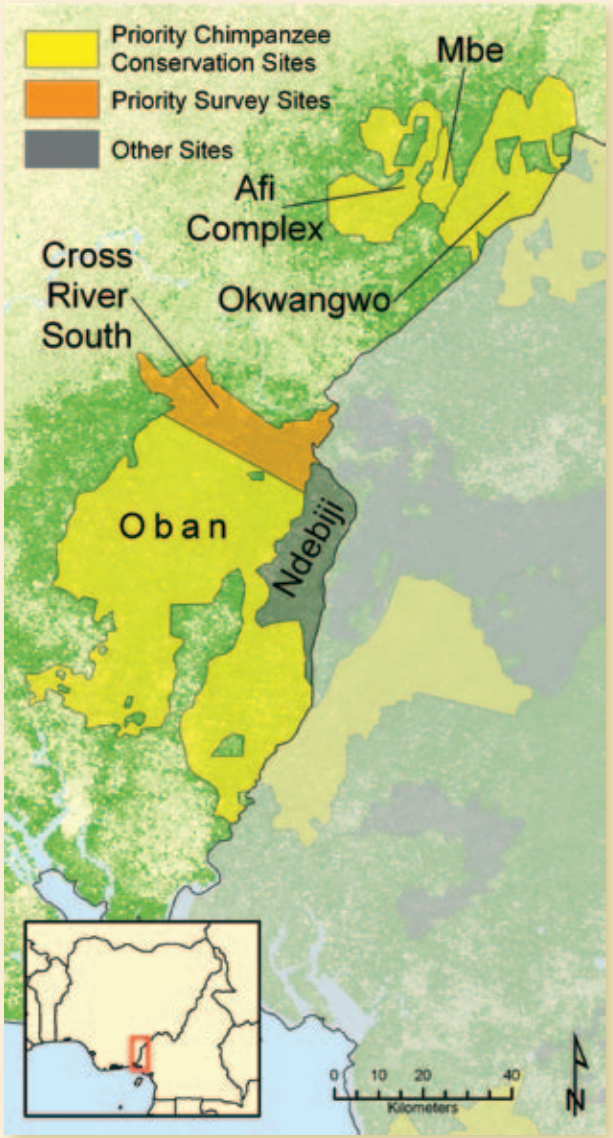
One of 36 states in the Federal Republic of Nigeria, Cross River State has a human population of almost 3 million—equivalent to an average population density of 130 people km^{-2}. This large and growing population depends largely on subsistence agriculture, which has resulted in high rates of forest loss and exploitation of natural resources. Vegetation ranges from mangrove and swamp forest on the coast with tropical rain forest and savannah woodland further north, including areas of montane vegetation on the temperate Obudu Plateau. The forests of Cross River State comprise the most extensive area of relatively undisturbed tropical moist forest remaining in Nigeria, though some has been replaced by major commercial plantations of oil palm, rubber, cashew and pineapple. Elevations south of the Cross River range from 100 m to over 1,000 m; north of the Cross River the land becomes more mountainous and rugged, ranging from 150 m to over 1,700 m on the Obudu Plateau.

Chimpanzees face a number of threats in this region, primarily from hunting, habitat loss and fragmentation due to clearing for agriculture and illegal logging. Hunting is widespread and driven by the commercial bushmeat market, though much of the bushmeat sold in Cross River State is smuggled across the border from Cameroon. Small mammals such as porcupine and duikers constitute the bulk of this trade, and chimpanzees typically constitute less than 0.2% of the total traded (Bassey et al. 2010).

At least 17 forest reserves were originally created in Cross River State during the colonial period, though many have been overrun by agriculture and are now largely deforested and devoid of wildlife. However, four of them were amalgamated to become Cross River National Park in 1991. The largest area of continuous, closed-canopy forest in Cross River State, Cross River National Park (3,640 km^2) is managed by the Nigeria National Park Service—a parastatal in the Federal Ministry of Environment. Cross River National Park consists of two divisions either side of the Cross River and separated from each other by approximately 60 km. Centred on the Oban Hills, the southern division is known as Oban and the northern division as Okwangwo. The Cross River South Forest Reserve (contiguous with Cross River National Park), and to a lesser extent the Afi River Forest Reserve, have survived largely intact. Some significant areas of community forest still occur outside of protected areas contiguous with the Cross River National Park. This area includes the Ikpan block and the Ndebiji Hills, which provide an important link between the Oban division of Cross River National Park and Ejagham Forest Reserve in Cameroon, and is known to support chimpanzees.

Cross River State Site Names	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Oban Division, CRNP	2	3	3	8
Okwangwo Division, CRNP	2	2	3	7
Afi Complex	1	2	3	6
Mbe Mountains	2	1	3	6
Community forest adjacent to CRNP including Ikpan and the Ndebiji Hills	3	1	1	5

Cross River State priority chimpanzee conservation and survey sites, Nigeria.



EXCEPTIONAL PRIORITY SITES Cross River State, Nigeria

Oban Division, Cross River National Park

Contiguous with Korup National Park in Cameroon, the Oban Division of Cross River National Park covers an area of approximately 3,000 km². Significant management problems include the unresolved park boundary and the presence of a number of village enclaves within the park. Agricultural expansion and human settlement along the Calabar to Ekang road has effectively divided the Oban Division into two halves. Hunting is widespread throughout Oban, and large mammal densities are very low as a result. Local communities are somewhat antagonist to the presence of the national park because of largely unfulfilled promises of development within the support zone. The Oban Division is surrounded by sizeable areas of community forest, particularly on its northwestern edge. An area of community forest belonging to the villages of Iko Esai and Ekuri has been proposed as a pilot REDD+ project (see Box 8, page 44).

Joint surveys in the transboundary region uncovered the presence of both chimpanzee and Cross River gorilla in the Okwangwo-Obonyi area. Here, we are measuring a Cross River gorilla nest. Photo: WCS Takamanda-Mone Landscape Project

Oban Division, Cross River National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Review current boundary situation and legally gazette a new park boundary	NNPS, CRSFC, FGN	2 years	$100,000
• Strengthen levels of protection: remove hunter's camps; improve training, monitoring and supervision of rangers; provide field equipment and vehicles, and improve patrol incentives	NNPS, WCS	5 years	$350,000
• Mitigate impact of enclaves and plan for their resettlement	NNPS, FGN	2 years	$50,000
• Strengthen community conservation programme including conservation education, park advisory com mittees, support for local livelihoods and conservation plans for surrounding community forests	NNPS, WCS	5 years	$100,000
• Introduce use of Cybertracker for recce surveys by park rangers and line transects in suspected key chimpanzee areas	CRNP, WCS, NCZoo	1 year	$50,000

IMPORTANT PRIORITY SITES Cross River State, Nigeria

Okwangwo Division, Cross River National Park

Contiguous with the Takamanda National Park in Cameroon, the Okwangwo Division of Cross River National Park covers approximately 640 km². Significant management issues exist including the presence of extensive farmlands belonging to three large enclave villages which threaten to sever Okwangwo into two halves. Widespread and largely uncontrolled hunting is also a major threat, and large mammal densities are very low as a result. Local communities in the park's support zone often demonstrate considerable hostility towards the national park authorities because of the perceived lack of development assistance and resettlement opportunities. Okwangwo supports the largest population of Cross River gorillas in Nigeria.

Okwangwo Division, Cross River National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Strengthen levels of protection: remove all hunter's camps; improve training, monitoring and supervision of rangers; provide field equipment and vehicles, improve patrol incentives	NNPS, WCS	5 years	$400,000
• Mitigate impact of enclaves and plan for their resettlement	NNPS	2 years	$50,000
• Review existing park boundary including possible re-demarcation	NNPS	1 year	$50,000
• Strengthen community conservation programme including conservation education, park advisory committees, support for local livelihoods and conservation plans for surrounding community forests	WCS, NNPS	5 years	$100,000
• Carry out a chimpanzee survey	CRNP	1 year	$50,000

Base camp at the Mbe Mountains. Photo: Inaoyom Imong, WCS Nigeria

Afi Complex

The Afi Complex is one of the state's largest remaining forest blocks outside of Cross River National Park and includes the Afi River Forest Reserve and the contiguous Afi Mountain Wildlife Sanctuary. Both the sanctuary and the forest reserve are managed by the Cross River State Forestry Commission. Established in 1930, the Afi River Forest Reserve covers an area of approximately 380 km², and has been significantly affected by illegal farming and logging in recent years. Hunting is widespread and it is unlikely that any chimpanzees survive in the reserve. The mountainous northwestern portion of Afi River Forest Reserve was gazetted as the Afi Mountain Wildlife Sanctuary (AMWS) in 2000. Covering an area of around 100 km², AMWS has important populations of several endangered primates including Cross River gorillas. Unfortunately, AMWS is not yet fully protected and the presence of at least 600 illegal farms in the sanctuary is a major unresolved problem. Farming and logging activities in the surrounding Afi River Forest Reserve, the presence of the Buanchor enclave and a tarred road from Ikom to Obudu threaten to isolate the sanctuary from the Mbe Mountains to the east.

Mbe Mountains

The Mbe Mountains covers around 85 km², and ownership is claimed by nine surrounding communities and managed by the Conservation Association of the Mbe Mountains (CAMM) with support from the Cross River State Forestry Commission, WCS and Development in Nigeria (DIN). Established in 2007, CAMM is not yet a fully effective organisation and requires substantial support and capacity-building. Although levels of hunting have been reduced through an active eco-guard programme, farming and logging in the surrounding lowlands threatens to isolate Mbe from Cross River National Park to the east and from Afi to the west. The Mbe Mountains also support a small population of Cross River gorillas.

Mbe Mountains Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Strengthen capacity of CAMM through training and mentoring	DIN, WCS, CRSFC	5 years	$100,000
• Support 12 eco-guards to discourage farming and hunting in the sanctuary	WCS, CAMM, CRSFC	5 years	$150,000
• Review long-term funding options including REDD and lease option	CRSFC, WCS	1 year	$50,000
• Seek legal registration of the community wildlife sanctuary with Cross River State Government	CAMM, CRSFC, Boki local government	1 year	$10,000
• Maintain levels of community support for the sanctuary through conservation education, support for alternative livelihoods and the development of eco-tourism	WCS, DIN, CRSFC, CAMM, Tourism Bureau	5 years	$150,000

Afi Complex Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Identify and protect habitat corridors linking AMWS to Afi River Forest Reserve and the Mbe Mountains	CRSFC, NCF, WCS, Pandrillus	1 year	$50,000
• Remove all farms and prevent any re-occurrence	CRSFC	2 years	$100,000
• Strengthen protection through improved monitoring and supervision of rangers, better training, equipment, ranger posts and patrol incentives	CRSFC, Pandrillus, NCF, WCS, NCZoo	5 years	$250,000
• Maintain levels of community support for the sanctuary through conservation education, support for alternative livelihoods and the development of eco-tourism	CRSFC, NCF, WCS, Pandrillus, Tourism Bureau	5 years	$150,000
• Survey southern section of Afi River Forest Reserve to ascertain if a viable chimpanzee population exists	CRSFC, WCS, Pandrillus, NCF	3 months	$10,000

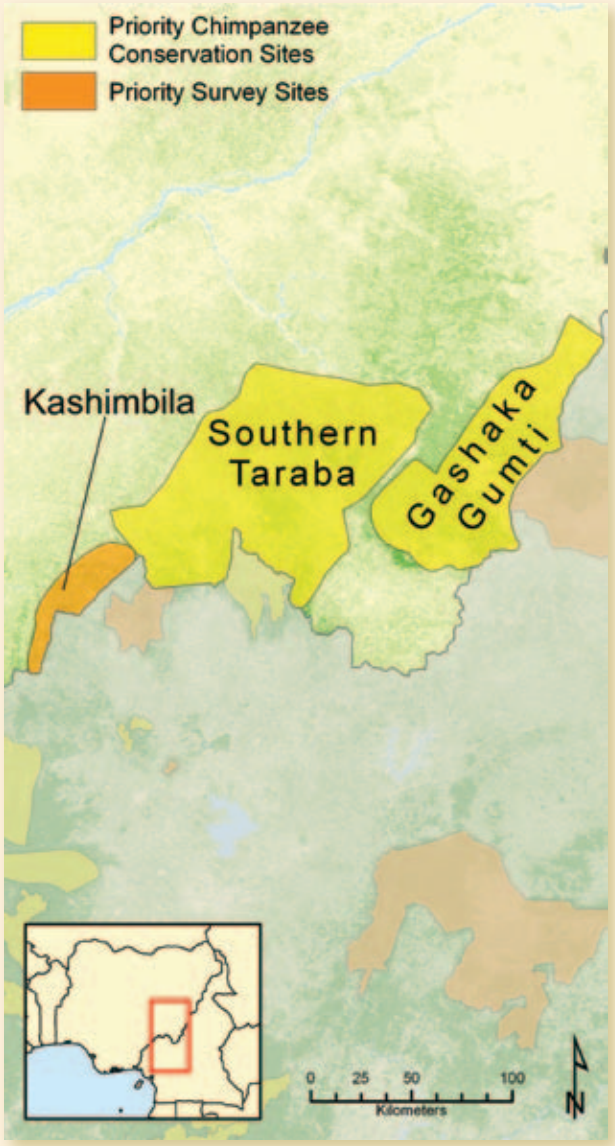
Taraba Chimpanzee Conservation Planning Unit, Nigeria

A stronghold of *P. t. ellioti* is found at the edge of its northern distribution, on part of eastern Nigeria's border region with Cameroon. Here, climate is characterised by a sharp alternation between a wet season (May–October) with 1,500–2,300 mm rainfall, and a dry period with hardly any precipitation. The vegetation cover is a mosaic of cultivated land, grassland, savannah-woodland, lowland forest, and montane rainforest around Nigeria's highest peaks that reach 2,400 m. Few roads traverse the mountainous region and human population density is low. The chimpanzee population likely approximates 1,000–1,200 individuals and is largely contiguous over perhaps 4,000 km². Seven monkey species occur here, plus an important assemblage of large and often rare mammals such as giant forest hog, leopard and hippopotamus. The majority of this wildlife survives in Gashaka-Gumti National Park, which spans the states of Taraba and Adamawa. Chimpanzees also occur west of the national park, in the Fali Mountains, the Donga River valley and Ngel Nyaki, a small remnant of submontane forest at the edge of the deforested and often seriously eroded Mambilla Plateau. At least in the past, chimpanzees also occurred in the Akwaizantar forest on the flanks of the plateau. The multiple chimpanzee sites of this region are, for the purpose of this plan, consolidated into an area we call Southern Taraba. Both legally protected as well as unprotected areas face considerable habitat destruction due to hunting, seasonal bush burning, cattle grazing by Fulani pastoralists, and settlement by an increasing influx of migrants. Community-based conservation approaches have made little progress, and protective measures emanating from international research activities are too localised. At least in the medium-term, there is thus a need for effective law-enforcement in this area which is key to the future survival of *P. t. ellioti* in the wild (Chapman et al. 2004).

Taraba, Nigeria Site Names	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Gashaka-Gumti National Park	3	3	3	9
Southern Taraba	1	3	2	7

Forested hills in Taraba State, Nigeria.
Photo: Volker Sommer

Taraba priority chimpanzee conservation and survey sites, Nigeria.



EXCEPTIONAL SITE Taraba, Nigeria

Gashaka-Gumti National Park

Nigeria's largest protected area, Gashaka-Gumti National Park, established in 1991, covers 6,700 km² in Taraba and Adamawa states. The northern Gumti sector lies in Adamawa State and is largely flat grassland. The southern Gashaka sector lies in Taraba State. It is mountainous and its forested core area of 750 km² harbours perhaps 1,000 chimpanzees. An established international research programme known as the Gashaka Primate Project (GPP) operates from field stations near the village of Gashaka (Sommer and Ross 2011). Major threats include cattle grazing, encroachment by inhabitants of several enclaves situated in the park, and poaching.

Gashaka-Gumti National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Improve law enforcement, and lobby the federal government to boost funding of the National Park Service for ranger training, wages and equipment.	GGNP, TASU, GPP, WCS	5 years	$500,000
• Promote international tourism, thus generating income for local communities and the national park	GNP, GPP	3 years	$15,000
• Review management plan of GGNP, particularly with respect to enclave issues	GGNP	1 year	$30,000
• Enhance collaboration between GGNP and Cameroon (transboundary issues) as well as between GGNP and Taraba (coordination between federal and state governments)	GGNP, WCS (Nigeria, Cameroon)	5 years	$50,000
• Liaise with Taraba State Government over issues related to park enclaves, encroachment, livestock grazing, fire regime	GGNP, TSG	5 years	$50,000

Researcher scouring the forests of Gashaka-Gumti National Park, Nigeria, for chimpanzees. Photo: Volker Sommer

Deforested hills within Gashaka-Gumti National Park, Nigeria. Photo: Volker Sommer

Ngel Nyaki Forest Reserve, Nigeria, surrounded by grazing land. Photo: Hazel Chapman

IMPORTANT SITE Taraba, Nigeria

Southern Taraba

This mosaic of forest reserves and unprotected land is directly adjacent to Gashaka-Gumti National Park. In all likelihood, chimpanzees can move between the two areas, and may number a few hundred in the Southern Taraba area. The original vegetation cover is largely savannah-woodland and riparian or gallery forest in the lowlands, and medium altitude to submontane closed-canopy forest on the flanks of the Mambilla Plateau. The Nigeria Montane Forest Project (NMFP), an established international research programme, operates from the 52.3-km² Ngel Nyaki Forest Reserve in this area (Beck and Chapman 2008). The newly founded Taraba State University at the state capital Jalingo has the potential to develop expertise in wildlife management and could be encouraged to pay special attention to this area. Hunting has already created numerous forests in Southern Taraba which are practically devoid of large animals. Law enforcement is virtually absent. Other major threats include cattle grazing and new settlements which degrade the vegetation cover.

Southern Taraba Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Upgrade levels of protection for existing reserves, such as Ngel Nyaki (concentrate on eliminating hunting and encroachment by cattle)	TSG, NMFP	2 years	$30,000
• Consult with Taraba State Government about gazetting new reserves and upgrading existing protected areas	GGNP, WCS	1 year	$20,000
• Taraba State Government and GGNP to liaise about campaigns for environmental education and revitalization of community ranger programme around GGNP	GGNP, TSG	5 years	$100,000
• Survey Fali Mountains, Donga River valley and sites around Akwaizantar	GGNP, TASU, GPP	1 year	$50,000

Rescued female chimpanzee at Drill Ranch, Afi Mountain Wildlife Sanctuary, Nigeria.
Photo: Liza Gadsby

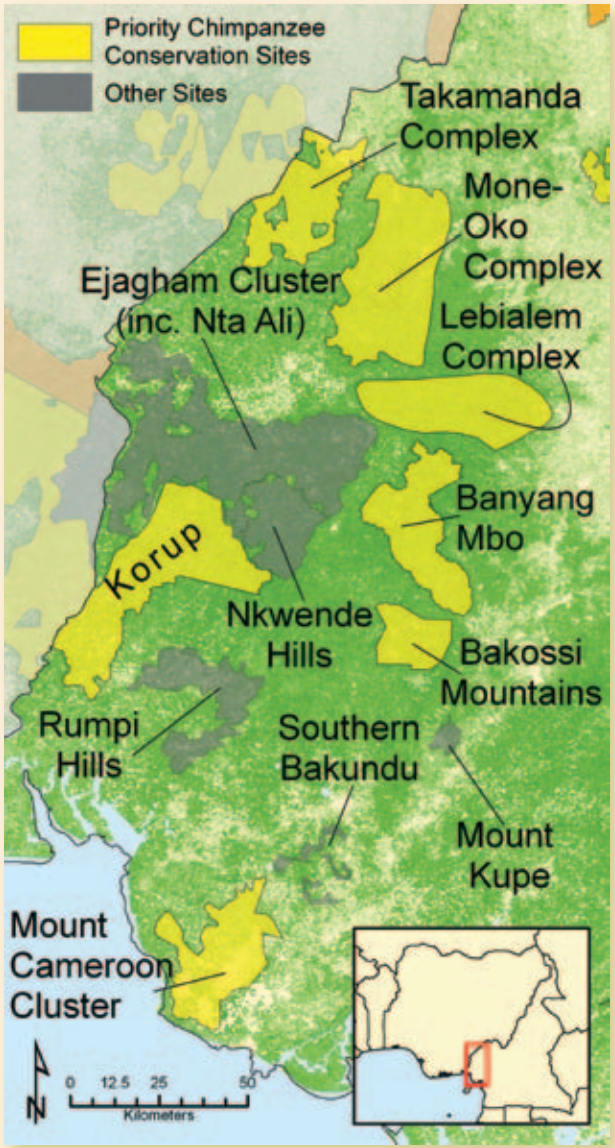
Burning grazing land to promote new growth for cattle grazing at the edge of Ngel Nyaki Forest Reserve, Nigeria.
Photo: Andrew Barnes

South West Region Chimpanzee Conservation Planning Unit, Cameroon

The South West Region of Cameroon provides refuge to the largest number of surviving *P. t. ellioti* with populations located at 14 main sites scattered across a landscape of over 25,000 km² ranging from tropical lowland to montane forest. At least ten diurnal primate species occur there, including Cross River gorilla (*Gorilla gorilla diehli*). Major human settlements and roads have resulted in many forested sites becoming increasingly isolated. A number of forest reserves (production forests) have been in existence in the region since the 1930s, and since 1986 four national parks, one gorilla sanctuary and one wildlife sanctuary have been established together with four Technical Operations Units (Box 3, page 27). Some of the forests in the region that provide habitat for sizeable chimpanzee populations have been assigned for timber extraction. Chimpanzee and other wildlife populations have been negatively impacted by current and future proposed habitat loss together with illegal hunting.

South West Region Chimpanzee Conservation Planning Unit, Cameroon Site Names	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Mount Cameroon Cluster	3	3	4	10
Takamanda Complex	2	3	4	9
Banyang-Mbo Wildlife Sanctuary	3	2	3	8
Korup National Park	1	3	4	8
Mone-Oko Complex	2	3	3	8
Lebialem Complex	3	3	2	8
Bakossi National Park	2	2	3	7
Mbulu forest	1	2	2	5
Mount Kupe Integral Ecological Area	1	1	3	5
Ejagham Cluster	1	3	1	5
Nkwende Hills	1	2	2	5
Rumpi Hills	1	2	2	5
Southern Bakundu/Barombi Mbo	1	2	1	4
Nta-Ali Forest Reserve	1	2	1	4

South West Region priority chimpanzee conservation and survey sites, Cameroon.



EXCEPTIONAL PRIORITY SITES South West Region, Cameroon

Mount Cameroon Cluster

Created as a national park in December 2009 and covering 1,100 km², Mount Cameroon is the highest mountain in West Africa and one of the most important sites for long-term chimpanzee conservation. Despite two decades of conservation and development attention, however, the area still suffers from levels of hunting and forest degradation. This is one of the few sites where human-chimpanzee conflict has occurred in the recent past, and consequently actions to reduce negative attitudes towards chimpanzees are of paramount importance.

Mount Cameroon Cluster Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Complete activities related to the establishment of the national park including demarcation of the boundary and finalization of the management plan	MINFOF, WWF, communities	2 years	$200,000*
• Support management activities in the national park, particularly improved law enforcement and the establishment of participatory community management	MINFOF, WWF, communities	3 years	$200,000*
• Establish a chimpanzee survey and monitoring programme with greater involvement of local communities. Support and build on taboos regarding chimpanzee hunting	MINFOF, WWF, communities	5 years	$250,000*
• Encourage coordination and awareness building amongst all stakeholders to strengthen chimpanzee conservation awareness and reduce human-chimpanzee conflict	MINFOF, Pandrillus, WWF	3 years	$50,000*
• Promote wildlife tourism that does not include habituation of wild chimpanzees	MINFOF, WWF, communities	5 years	**

*at least partial financing is envisaged from KfW in cooperation with GIZ from 2011–2016
** $2 million to support ecotourism at this site has been secured from the World Bank from 2011–2016

Farmland at the base of Mount Etinde, Mount Cameroon National Park, Cameroon. Photo: Bethan Morgan, ZSSD

Box 3
Technical Operations Units (TOU's)

Technical Operations Units (TOU's) are defined as 'delimited geographical areas based on ecological, socio-economic, cultural and political characteristics for the enhancement of integrated landscape management involving all stakeholders'. The original concept allowing for the creation of Technical Operation Units, or TOU's, was captured in the Government of Cameroon decree that created the Ministry of Environment and Forestry in 1992 (articles 41 and 42). The first TOU's were established in the southeastern parts of Cameroon from 1998 onwards. Today, TOU's exist throughout Cameroon, including three in the South West Region. All TOU's are managed by the Ministry of Forestry and Wildlife.

There is clear value attached to the creation of such multi-stakeholder land-use planning platforms, especially in terms of improving dialogue between ministries and other stakeholders, influencing land-use planning and resolving land-use conflicts. The funding and management of TOU's remain, however, issues that are yet to be fully resolved, and many TOU's have not realized their full potential due to these constraints.

Takamanda Complex

Upgraded from a forest reserve to a national park in 2008, the 676-km² Takamanda National Park and the c. 20-km² adjacent area to the south known as the Mawambi Hills provide habitat to both chimpanzee and Cross River gorilla populations. More than a decade of research (Comiskey et al. 2003) and conservation attention has been successful in significantly reducing ape hunting, but more vigorous protection is needed if the decline in ape populations is to be halted. Many natural products, including timber, bushmeat and various non-timber forest products, are traded across the largely porous border to Nigeria. Establishing transboundary cooperation between the Takamanda National Park and the Okwangwo Division of the CRNP is key to long-term conservation success.

Landscape image of the Mbulu-Takamanda border region, Cameroon. Photo: Aaron Nicholas, WCS Takamanda-Mone Landscape Project

Takamanda Complex Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Review management options for the Mawambi Hills ensuring that connectivity with other contiguous forested areas (Mone Forest Reserve, Mbulu) is maintained where possible	MINFOF, communities, WCS	5 years	$150,000*
• Recruit, train and equip a minimum of 15 additional eco-guards to augment present staffing levels in Takamanda National Park	MINFOF, WCS	5 years	$225,000*
• Support community-based great ape monitoring and protection, and build on taboos regarding chimpanzee hunting	MINFOF, communities, WCS	5 years	$100,000*
• Identify, monitor and target great ape bushmeat markets and specialist hunters	MINFOF, communities, WCS, universities	4 years	$80,000*

*at least partial financing is envisaged from KfW in cooperation with GIZ from 2011–2016

Banyang-Mbo Wildlife Sanctuary

Recent surveys suggest that the 680-km² Banyang-Mbo Wildlife Sanctuary provides habitat to possibly the largest populations of *P. t. ellioti* remaining in this region (Greengrass and Maisels 2007). Past conservation and development activities were externally supported by WCS until funding ceased in 2006; KfW are to co-finance collaborative management activities in the sanctuary from 2011–2016, with WWF as a local implementing partner. Well organized commercial poaching constitutes the main threat to the area, in addition to habitat degradation.

Banyang-Mbo Wildlife Sanctuary Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Improve protection through boundary demarcation, eco-guard recruitment and training, patrols (with particular focus on commercial poaching), equipment and the establishment of ranger posts	MINFOF, LAGA, communities	5 years	$350,000*
• Improve awareness on laws governing great ape protection in all surrounding villages	MINFOF, NGO partners, communities	2 years	$50,000
• Identify, monitor and target great ape bushmeat markets together with regular monitoring of known great ape areas	MINFOF, NGO partners	3 years	$50,000
• Re-organise existing Village Forest Management Committees to support wildlife laws and foster involvement of local communities in chimpanzee surveys and monitoring	MINFOF, communities	3 years	$45,000*

*at least partial financing is envisaged from KfW in cooperation with GIZ from 2011–2016

Korup National Park

Established as Cameroon's first rainforest national park in 1986, Korup is the largest protected area in South West Cameroon (1,260 km²), providing refuge to important populations of drill (*Mandrillus leucophaeus*), Preuss's red colobus (*Procolobus preussi*) and a small remaining population of forest elephants. Korup is adjacent to the Oban Division of Nigeria's CRNP. WWF is a site partner and funding to improve conservation efforts is assured until 2016. Hunting and the trade in bushmeat to Nigeria is the major threat to wildlife within Korup.

Korup National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Re-trace park and enclave boundaries	MINFOF, WWF	1 year	$100,000*
• Rehabilitation of tourism infrastructure	MINFOF, WWF	1 year	$200,000*
• Extend great ape focused conservation education to workers of adjacent commercial agriculture plantations and enlist greater involvement of local communities	MINFOF, WWF, Pamol, communities	3 years	$100,000*
• Ongoing support for patrols, training, equipment and field logistics in order to ensure the protection of chimpanzees and other key species	MINFOF, WWF	5 years	$180,000*

*at least partial financing is envisaged from KfW in cooperation with GIZ from 2011–2016

In 2009 a MINFOF team including representatives from protected areas such as Korup and Takamanda National Parks visited Cross River National Park to strengthen transboundary ties. Here we are getting to know the contiguous protected area boundaries. Photo: Aaron Nicholas, WCS Cameroon

Mone-Oko Complex

The Mone-Oko Complex includes the Mone Forest Reserve and the unclassified area of Mount Oko. Situated between the Mone Forest Reserve to the south and Mbulu forest to the north, Mount Oko has only recently been identified as an important area for both *P. t. ellioti* and *G. g. diehli*, and is critical to maintaining connectivity between Mone and Mbulu. There has been a proposal to establish the Mone Forest Reserve as a pilot REDD site (see Box 8, page 44). There have also been proposals for it being upgraded to a National Park. Therefore, the recent proposal to selectively extract timber from the Mone Forest Reserve is of great concern. The main threats throughout the Mone-Oko complex are timber extraction and hunting.

Mone-Oko Complex Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Re-evaluate current land use proposals for Mone Forest Reserve, and advocate for improved protected area status	MINFOF, WCS	5 years	$300,000
• Establish habitat corridors to connect Mone with important neighbouring forests	MINFOF, WCS	5 years	$300,000
• Employ and equip adequate law enforcement staff including the establishment of ranger/research posts	MINFOF, WCS	5 years	$160,000*
• Explore community-based forest management mechanisms for the Oko area	MINFOF, WCS	2 years	$150,000
• Promote the involvement of local communities in conservation and support conservation education in schools and communities	MINFOF, WCS, communities	5 years	$130,000

*Costs to be partly met by the government of Cameroon (MINFOF)

Bechati-Fossimondi area of the Lebialem Highlands, Cameroon. Photo: Ymke Warren, WCS Takamanda-Mone Landscape Project

Lebialem Complex

The Lebialem Complex consists of a series of forests located directly to the west of some of the highest human population densities in the region. Not presently formally classified as a protected area and under considerable pressure from forest clearance for agriculture, the rugged hills of this area also provide refuge to an isolated population of Cross River gorillas.

Lebialem Complex Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Establish protected area/s for the conservation of great apes	MINFOF, ERuDeF	4 years	$400,000
• Recruit, train and equip eco-guards	MINFOF, ERuDeF, FFI, ACF	2 years	$100,000*
• Support to conservation education and community involvement in ape surveys/monitoring	MINFOF, communities, ERuDeF, FFI, ACF	3 years	$50,000

* Costs to be partly met by the government of Cameroon (MINFOF)

IMPORTANT SITE South West Region, Cameroon

Bakossi National Park

Edib crater lake, in the Bakossi National Park, Cameroon. Photo: Bethan Morgan, ZSSD

Established in 2008, the 293-km² Bakossi National Park is one of the most recently created protected areas in Cameroon. Together with the adjacent sites of Mount Kupe and Mount Manengouba, this area boasts a tremendous botanical diversity, which was cited as a factor in the creation of the national park. The conservation status of chimpanzees in the Bakossi National Park is unknown, and the precipitous terrain makes fieldwork challenging. WWF is a site partner, focusing mainly on improving rural livelihoods. Further support is needed, especially to increase protection of the area.

Bakossi National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
Complete establishment process, demarcate boundaries and complete the management plan	MINFOF, WWF	2 years	$150,000
Recruit, train and equip eco-guards	MINFOF, WWF	2 years	$100,000*
Support to conservation education and community involvement in ape surveys	MINFOF, WWF, communities	3 years	$50,000

* Costs to be partly met by the government of Cameroon (MINFOF)

North West Region Chimpanzee Conservation Planning Unit, Cameroon

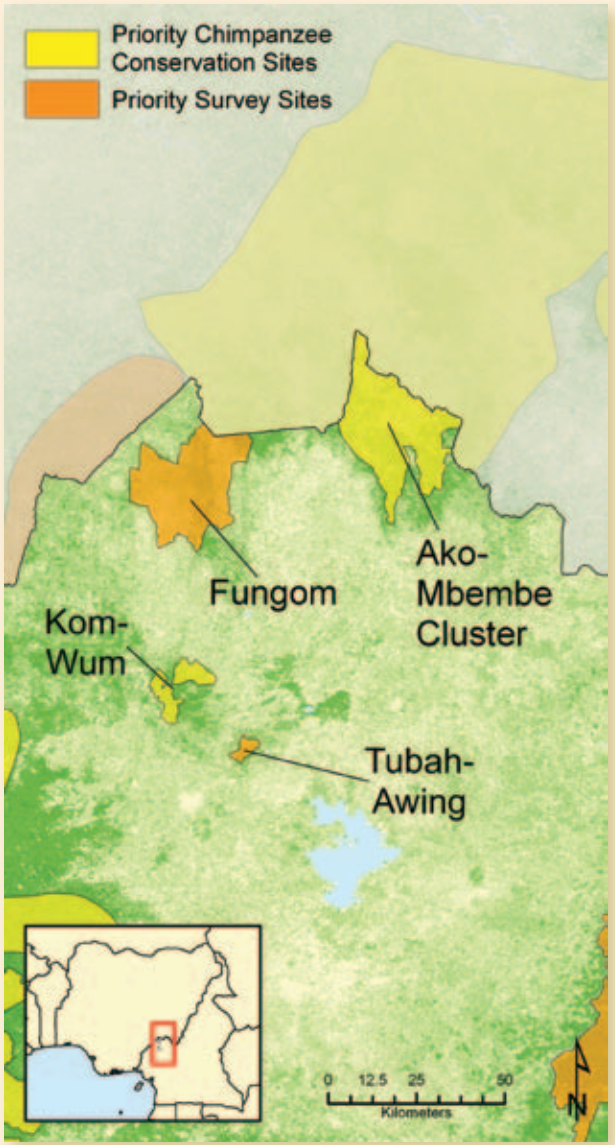
This region of Cameroon forms the heart of the Bamenda Highlands, an area known to support high levels of biological diversity and endemism. Human population densities here are amongst the highest in Cameroon, with approximately 100–250 people km^{-2}. Consequently, the conversion of forest to pasture and agriculture has been dramatic and widespread, and the landscape has changed considerably over the last century, with just a few fragmented forests remaining that hold only remnants of their previous primate assemblages. Unsurprisingly, chimpanzee densities are extremely low, and their distribution is highly fragmented across a mosaic of montane and gallery forest and grassland savannah. There has been relatively little research on the chimpanzees in this region, and we have incomplete knowledge of their abundance or ecology.

A number of forest reserves provide the best hope for *P. t. ellioti* conservation in the Bamenda Highlands, although hunting pressure and habitat loss still pose major threats even at those sites. The largest reserves, Ako-Mbembe and Fungom, are situated on the international boundary, adjacent to the southern part of Taraba State in Nigeria where remnant *P. t. ellioti* populations are known beyond the boundaries of the Gashaka-Gumti National Park. Well-organized illegal transboundary trade in timber and bushmeat occur through these reserves. The Fungom Forest Reserve, which covers 847 km², comprises sub-montane forest interspersed with large areas of grassland. Critchley (1968) reported the presence of both gorilla and chimpanzee nests there; however, recent surveys have only confirmed the presence of chimpanzees and some monkey species. Significant threats there include hunting and habitat loss through timber exploitation and uncontrolled burning. The discontinuous montane forest patches at Tubah-Awing cover 35 km² in a highly populated area. Informal, local monitoring over several years has confirmed the continuous presence of less than 10 chimpanzees. Ongoing efforts to protect and restore the forest patches through community management have been partially effective. Aside from a very small number of chimpanzees and a handful of monkey species, there are two threatened birds that are endemic to this area; Bannerman's Turaco (*Tauraco bannermani*) and the Banded Wattle-eye (*Platysteira laticincta*). The main threats are farming, extended cattle grazing, uncontrolled bush fires, and hunting. Other sites which provide habitat to small populations of chimpanzees include the Kom-Wum Forest Reserve; however, the fundamental lack of sufficiently protected areas and NGO partners to work with government to implement conservation activities in the region is an overriding concern for the continued survival of the chimpanzees.

North West Region, Cameroon Site Names	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Kom-Wum Forest Reserve	3	2	3	8
Ako-Mbembe Forest Reserve	2	3	2	7
Fungom Forest Reserve*	1	3	2	6
Tubah-Awing forest*	2	1	3	6
Ntem forest	1	2	1	4
Southern Menchum forest patches	1	1	1	3

* Despite being scored in this table, these sites require further surveys to confirm chimpanzee distribution and abundance

North West Region priority chimpanzee conservation and survey sites, Cameroon.



EXCEPTIONAL PRIORITY SITE North West Region, Cameroon

Kom-Wum Forest Reserve

The Kom-Wum Forest Reserve was created in 1951, and was followed by reforestation initiatives that were implemented (but later neglected) by the National Forestry Fund. Other large mammals surviving here may include Preuss's monkey (*Allochrocebus preussi*) and putty-nosed monkey (*Cercopithecus nictitans*). There are valuable timber species in the reserve, including *Khaya ivorensis*, *Triplochiton scleroxylon*, and *Milicia excelsa*, and threats to its integrity include illegal timber exploitation, farming, hunting, bush fires and advancing pasture.

Kom-Wum Forest Reserve Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Develop a proposal to create a multi-site protected area including Ako-Mbembe and Fungom Forest Reserves, together with a comprehensive management strategy to protect chimpanzees and other wildlife	MINFOF, NGO partners	5 years	$300,000
• Establish community awareness and conservation education programme in schools and communities and increase dialogue with community groups to support conservation action	MINFOF, ERuDeF, FFI, ACF	5 years	$50,000
• Develop and support law enforcement activities to curb all illegal activities	MINFOF, NGO partners	5 years	$100,000
• Investigate and develop opportunities for community engagement, including employment, boundary clearance, livelihood improvement, monitoring, and eco-tourism	MINFOF, NGO partners	5 years	$150,000

Box 4
Creating a multi-site protected area in the Bamenda Highlands

During the action planning workshops, it was suggested that the options for creating a multi-site protected area including Kom-Wum and Ako-Mbembe Forest Reserves might be investigated, affording appropriate legal status for the remaining wildlife and forest resources in the North West region. Community engagement in many of these areas is increasing, and developing a collaborative management system beneficial to conservation (with special focus on grazing land rights to reduce conflict), together with a comprehensive management strategy to effectively protect chimpanzees and other wildlife, was thought viable by several workshop participants.

IMPORTANT PRIORITY SITE North West Region, Cameroon

Ako-Mbembe Forest Reserve

The Ako-Mbembe Forest Reserve was created in 1934 with the aim of conserving biodiversity. Other mammals found in the reserve include Preuss's monkey (*Allochrocebus preussi*). Threats include hunting and illegal timber harvesting. The Kimbi River Game Reserve lies between the Ako-Mbembe and Fungom forest reserves, which may have the potential for linking these sites should the political will exist to promote positive change for conservation in the region.

Ako-Mbembe Forest Reserve Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Increase dialogue and support for conservation-related activities through community awareness and education programmes at all levels	MINFOF, ERuDeF, FFI, ACF	5 years	$50,000
• Work in collaboration with MINFOF to augment law enforcement activities and reduce trans-border and other illegal trade	MINFOF, NGO partners	5 years	$100,000
• Study potential livelihood opportunities to foster community engagement and support for conservation (boundary clearance, livelihood improvement, monitoring)	MINFOF, NGO partners	5 years	$150,000

Littoral Region Chimpanzee Conservation Planning Unit, Cameroon

The Littoral Region, Cameroon, covers over 20,000 km² of forest and degraded forest, and includes Douala, the largest port city in central Africa and the largest conurbation in Cameroon. Human population density is predictably high overall, although very patchy at a finer scale. Today the Littoral Region Chimpanzee Conservation Planning Unit is separated from the South West Cameroon CCPU by the major Douala-Bamenda road and surrounding farmland. Previously, these forests combined would have formed a vast expanse of montane and lowland forests.

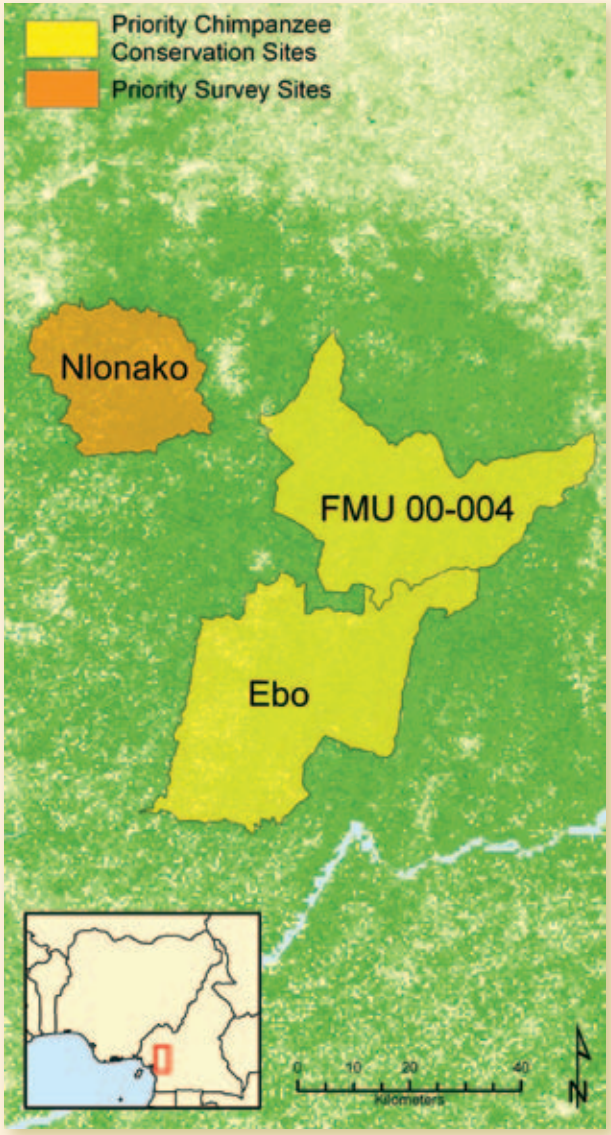
The main threats to all sites in the Littoral Region stem from the large human population in the cities of Douala, Edea and Yaoundé. These cities are relatively readily reached from the forests thanks to an extensive road network, which facilitates the exploitation of forest products. There is an active trade supply to the commercial bushmeat trade throughout the planning unit, which is maintained by corrupt practices and high incentives. If the direct threats can be managed in future, it is not impossible to imagine that some form of ecotourism might be viable, though this would strongly depend on rigorous enforcement of the wildlife laws. There are plans for further expansion of hydroelectric projects along the Sanaga River, which forms the southern boundary of the Littoral Region, and related human population immigration into this area must be incorporated into all future management planning for conservation.

The remaining forest blocks in the Littoral Region are separated by unpaved major and minor roads. Elevation ranges from sea level at the coast to 1,800 m on the summit of Mount Nlonako—a mountain recognized as having the most biodiverse reptilian fauna in Africa (Herrmann et al. 2005a), as well as the most species-rich single locality for amphibians in Africa (Herrmann et al. 2005b), but where there is no current reliable information on the status of chimpanzees. The Ebo forest is increasingly being recognized as a haven for chimpanzees, and is currently being reclassified as a national park. The logging concession FMU-004 to the north of the Ebo forest is at present under a thirty-year tenure by a logging company, Transformation Reef Cameroon, and has Forestry Stewardship Council certification.

Littoral Region, Cameroon Site Names	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Proposed Ebo National Park	3	3	3*	9
Forestry Management Unit-004	2	3	2	7

* will be ranked 4 when national park status is conferred

Littoral Region priority chimpanzee conservation and survey sites.



Installing video cameras in the proposed Ebo National Park, Cameroon to capture chimpanzee tool use behaviour on film. Photo: Ekwoge Abwe, ZSSD

IMPORTANT PRIORITY SITE Littoral Region, Cameroon

Forestry Management Unit 00-004

The FMU-004 logging concession operated by Transformation Reef Cameroon (TRC) covers 1,254 km² of lowland and semi-montane forest directly to the north of the proposed Ebo National Park. Combined, these two areas cover more than 2,300 km² of forest-dominated habitats with low human population density. It is likely that chimpanzees regularly transfer between these two sites (Ekobo 2007). TRC gained Forestry Stewardship Council (FSC) certification in 2008. The concession has a broad and varied fauna, though gorillas are now thought to be extinct there.

EXCEPTIONAL PRIORITY SITE Littoral Region, Cameroon

Proposed Ebo National Park

The proposed Ebo National Park covers over 1,100 km² of lowland and submontane forest and is located less than 50 km from Douala and less than 150 km from Yaoundé and Edéa—large centres of human population. Ebo has a long history of human habitation, and many of the lowland areas are sites of former habitation with extensive secondary forest. It supports a unique primate assemblage of 11 diurnal species, including a small western gorilla population of uncertain taxonomic affinity, the only Preuss's red colobus (*Procolobus preussi*) population in Cameroon outside of Korup National Park, and one of the healthiest drill (*Mandrillus leucophaeus*) populations in Africa. The Ebo chimpanzees have an extensive cultural repertoire, including termite fishing and nut-cracking (Morgan and Abwe 2006; Abwe and Morgan 2008), and long-term research and conservation of chimpanzees in the forest, initiated in 2005, is ongoing.

Proposed Ebo National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Legally gazette the national park and develop a management plan, install ecoguards and demarcate the boundary	MINFOF, WWF, ZSSD	5 years	$300,000
• Increase community knowledge of national park status and future buffer zones, establish VFMCs	MINFOF, WWF	5 years	$100,000
• Continue and expand the scope of conservation and research work at three research stations	ZSSD (with assistance from MINFOF and WWF)	5 years	$500,000*
• Stem the regular flow of bushmeat trafficking between the forest and surroundings to Douala, Edea and Yaoundé	MINFOF, logging company	5 years	$200,000
• Research and implement community initiatives for income generation	ZSSD (research) WWF (implementation)	1 year	$25,000

*in addition to $500,000 already secured from ZSSD, Offield Family Foundation, Arcus Foundation and US Fish and Wildlife Serve from 2011–2012

Forestry Management Unit-004 Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Regular monitoring of logging activities	MINFOF, TRC, WWF	5 years	$150,000
• Enforce implementation of wildlife laws which is part of the FMU management plan	MINFOF, TRC, WWF	5 years	$300,000
• Encourage FMU to implement a conservation awareness program, as specified in the management plan	MINFOF, WWF, TRC	5 years	$150,000

Centre Region Chimpanzee Conservation Planning Unit, Cameroon

The Centre Region of Cameroon occupies 69,000 km², and has a human population of 3.1 million, concentrated around Yaoundé and towns adjacent to the large plantations between the Sanaga and Nyong rivers. Human population density decreases northwards. Elevations vary from 200 to 1000 m, with the land rising gently in escarpments from the south before joining the Adamawa Plateau to the north. The vegetation includes the eastern limit of the Guinean rainforest and northern limit of the Congolian rainforest. The interlacing of these rainforests and uncontrolled burning create a network of gallery forests, savannah woodlands and bush savannah in the north of Centre Region.

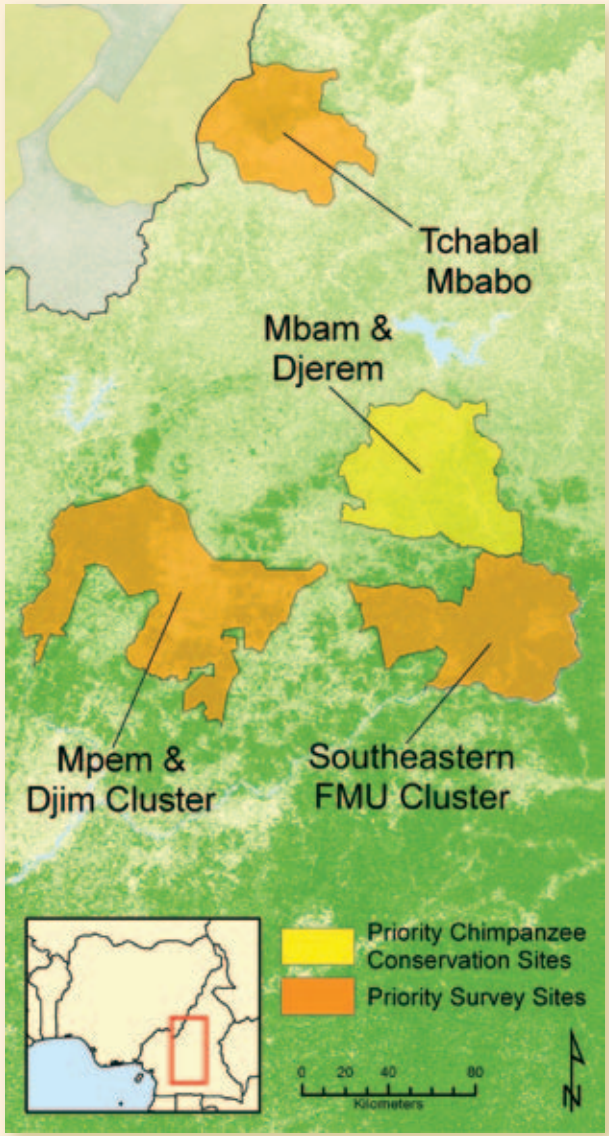
This region has two national parks, eleven forestry concessions (FMUs), and several community forests. Infrastructure, management and support for these areas vary considerably. Centre Region has experienced high rates of forest loss, forest conversion and exploitation of natural resources, particularly in the south, to meet the demands of rapid commercial growth and the subsistence needs of the rising human population. Towards the Adamawa Plateau, uncontrolled burning, cattle grazing and subsistence farming are widespread outside protected areas. Commercial bushmeat hunting is extensive near Ngambe-Tikar, Bafia and the Sanaga Valley near Makombe, Nanga-Eboko and Wouchaba to service Yaoundé and other population centres to the south of Centre Region.

The chimpanzees of Centre Region are unique. Genetic studies suggest that Centre Region forms the geographical centre of a hybrid zone between *P. t. ellioti* and *P. t. troglodytes* (see introduction). It is the only known point of overlap between chimpanzee subspecies across Africa. Virology studies and extensive sampling for genetics suggest that large numbers of chimpanzees persist in the Centre Region, and given that Centre Region appears to be very important in maintaining connectivity between subspecies, the area holds exceptional conservation value for the species.

Centre Region, Cameroon Site Name	Chimpanzee relative density	Area of potential chimpanzee habitat	Long-term conservation potential	Total score
Mbam & Djerem National Park	3	3	4	10

Waterfall along the Djerem River, near Ganga base camp, Mbam & Djerem National Park, Cameroon. Photo: Katy Gonder, SUNY-Albany

Centre Region priority chimpanzee conservation and survey sites, Cameroon.



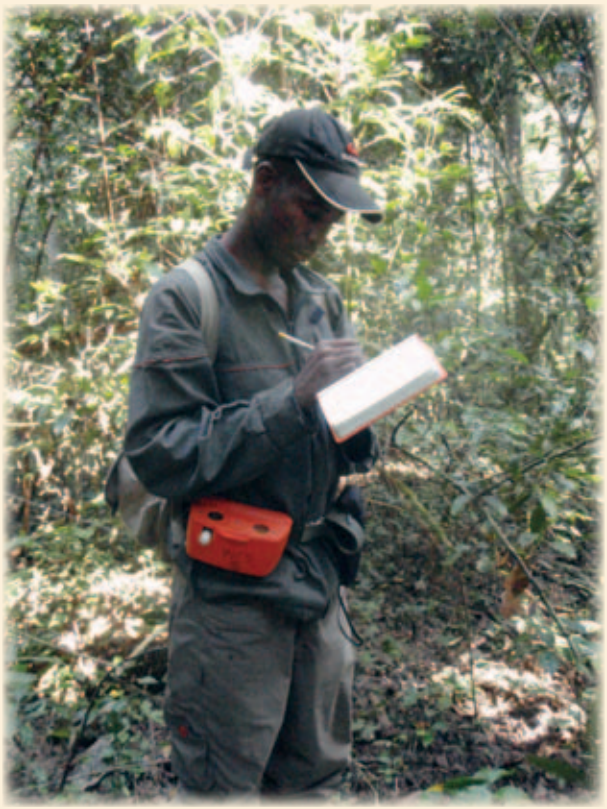
EXCEPTIONAL PRIORITY SITE Centre Region, Cameroon

Mbam & Djerem National Park

Mbam & Djerem National Park harbours the greatest habitat diversity of any protected area in Cameroon, along with a chimpanzee population of at least 500 individuals in the core area of the national park (Maisels et al. 2009). Commercial development and settlement outside the park pose serious threats to the long-term survival of these chimpanzees. Plans are underway to create a hydroelectric dam at Mouséré (Moussereng), northeast of the park, to regulate the flow of the Sanaga, as well as to generate electricity for a bauxite mining project near Ngaoundal. The development of this dam will favour settlement around the park and alter the drainage network, and the increase in human population density may result in an increase both of illegal hunting and in the amount of people with available money from employment at the construction sites to buy bushmeat and thus potentially further exacerbate the problem. In addition, approximately 30,000 people currently live in 70 villages adjacent to the park, which presents several challenges. For example, significant unsustainable commercial exploitation of the tree *Xylopia aethiopica* east of the park may constitute a threat to chimpanzees because this is an important nesting and feeding species for them. Threats to chimpanzees vary in the park, although hunting is regarded as the most serious threat to wildlife as a whole. Hunting is particularly severe in the southern and eastern regions of the park, partly due to the ease of transport to major cities such as Bertoua and Yaoundé. In the northern areas of the park, uncontrolled burning by cattle grazing herdsmen in order to improve pasture is regarded as a serious threat, although burning is also used under controlled conditions as a management tool for preserving habitat diversity.

Mbam & Djerem National Park Recommended Actions	Potential implementing partners	Time frame	Funding requirement
• Engage industry to mitigate effects of the proposed dam and the bauxite mining project	Private industry, MINFOF, WCS	5 years	$200,000
• Expand and adapt the existing bio-monitoring programme to evaluate emerging issues such as the proposed dam and bauxite mining projects	MINFOF, MINRESI, MINESUP, WCS	5 years	$300,000
• Extend protection infrastructure by establishing new guard posts, expanding the existing wildlife patrol programme and recruiting additional MINFOF officers and ecoguards	MINFOF, WCS	5 years	$250,000
• Strengthen community awareness programmes, including such aspects as fire management, conservation education, park advisory committees and sustainable local livelihoods	MINFOF, local civil societies, WCS	5 years	$100,000
• Develop a permanently manned research station at Ganga, as provided for in the park management plan	MINFOF, MINRESI, SUNY-Albany	1 year	$50,000

Ecoguard training in the Mbam & Djerem National Park, Cameroon. Photo: Fiona Maisels, WCS



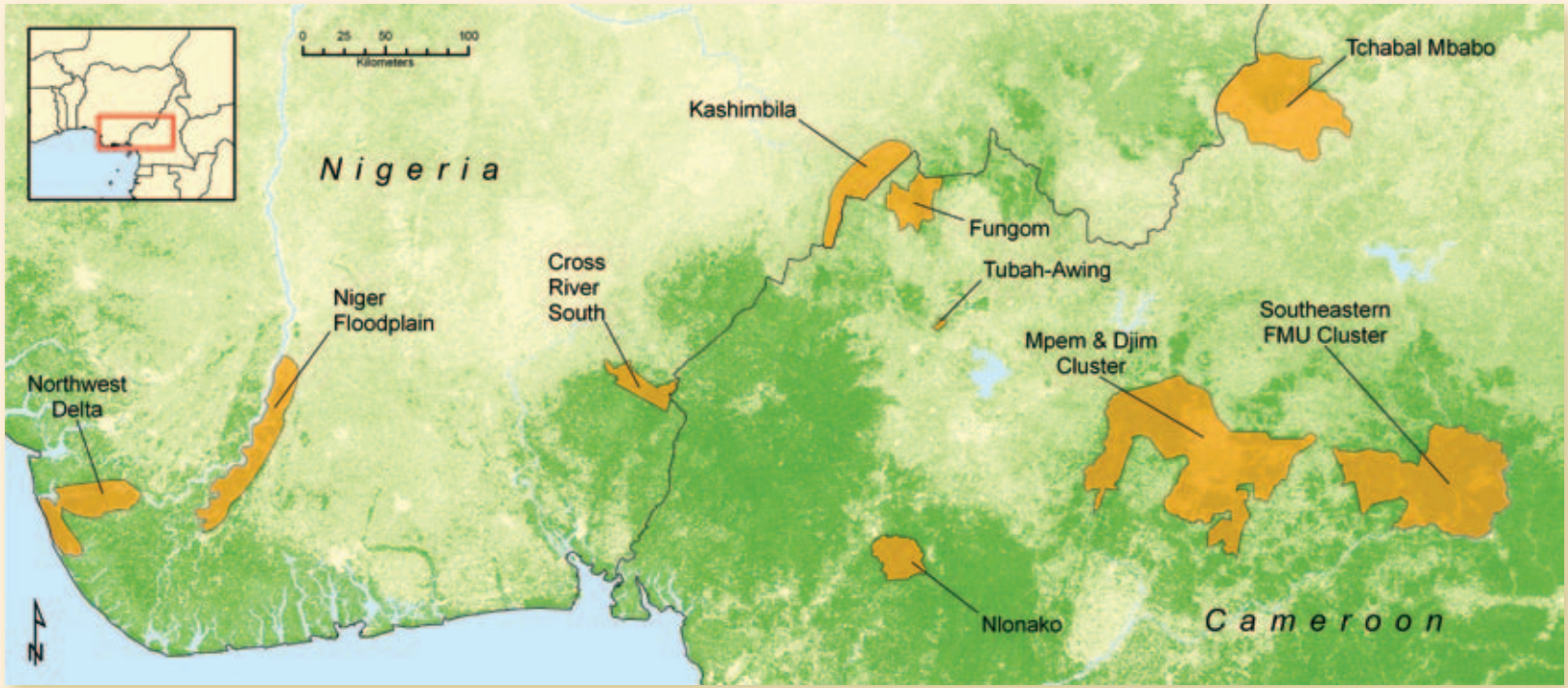
Survey Priorities

These tables list sites in Nigeria and Cameroon where significant populations of chimpanzees are believed to persist, but about which we have insufficient information for them to be ranked in terms of conservation priority. Reconnaissance surveys are needed to find out more about these areas, and to subsequently develop effective conservation action.

Priority survey sites – Nigeria	Potential implementing partners	Time frame	Funding requirement
Niger Delta Region			
• Surveys are needed in the floodplain forest zone on the east bank of the Niger River, of forests on the north-western flank of the delta, and of western barrier islands. There are old records or unconfirmed reports of chimpanzees from these areas. The floodplain forests include Taylor Creek Forest Reserve in Bayelsa State; surveys in 1989 suggested that chimpanzees were once present in Taylor Creek but no evidence of them was found in a 1990 survey (Oates 1989; Werre 1990), and there have also been reports north of Taylor Creek (Oates 1989; L. Baker pers. comm.). Reports of chimpanzees being present near Bende in Abia State should also be investigated.	Delta and Bayelsa State Governments, local universities, Baylor University, WCS	3 months	$10,000
Taraba			
• In the far south of Taraba State, adjacent to the Cameroon border, is a mountainous and inaccessible area that was declared as the Kashimbila Game Reserve in 1977, with an area of 1,396 km (World Database on Protected Areas). Based on its location close to the Fungom Reserve in Cameroon, this might be an important chimpanzee habitat, but no wildlife surveys appear to have been conducted there, and the reserve status is most likely only a paper one. A dam project is located in this area.	WCS, NMFP	2 months for initial scoping	$10,000
Cross River State			
• Contiguous with the Oban Division of Cross River National Park and with Ejagham in Cameroon, very little is known about the current status of Cross River South Forest Reserve. A survey of this neglected area is urgently required to pursue a landscape-approach to chimpanzee conservation.	WCS	3 months	$10,000

Priority survey sites – Cameroon	Potential implementing partners	Time frame	Funding requirement
Adamawa Region			
• Little is known about the existence of chimpanzees in this region, particularly in the Tchabal Mbabo area. Verifying their existence and connection and genetic relationship to other chimpanzee populations, particularly at Gashaka-Gumti National Park and Mbam & Djerem National Park is a priority.	MINFOF, WCS, SUNY-Albany	2 months	$10,000

Priority survey sites – Cameroon, *continued*	Potential implementing partners	Time frame	Funding requirement
Centre Region			
• Surveys are urgently needed to assess the abundance and distribution of chimpanzees, their long-term prospects for survival and their degree of connectivity to other populations. Priority areas are Mpem & Djim National Park and adjacent FMUs (8-006, 8-009, 8-008, 8-004, 8-003, 8-005), and Southeastern FMUs (FMUs 10-62, 08-001, 08-002, 08-007).	MINFOF, WCS, SUNY-Albany	2 years	$50,000
Littoral Region			
• Mount Nlonako is known to be extremely biodiverse for both reptiles and amphibians in Africa (Herrmann et al. 2005a, 2005b), but it also holds remnant populations of chimpanzees and other primates. The slopes on the western and northern flanks are heavily cultivated, but to the south and east the rainforest is relatively intact from Nlonako to the Ebo region. There is no reliable information as to the status of chimpanzees on Mount Nlonako.	MINFOF, ZSSD, WWF	1 year	$25,000
North West Region			
• Surveys to document the viability of the remaining chimpanzee populations and potential habitat corridors are needed. Priority areas are Fungom Forest Reserve and Tubah-Awing.	MINFOF, ERuDeF, FFI, ACF	1 year	$50,000



Priority chimpanzee survey sites.

Law Enforcement

Chimpanzees are, at least in theory, a fully protected species in both Nigeria and Cameroon, and covered by an assortment of international, regional and national legislation. However this legislation is poorly enforced and in some cases is now outdated. Inadequate levels of law enforcement led to CITES suspending all trade in listed species with Nigeria in September 2005, a suspension that has not yet been lifted. A new law enforcement agency has been created in Nigeria — the National Environmental Standards Regulatory and Enforcement Agency (NESREA) — though it has yet to expand its reach much beyond the major cities of Abuja and Lagos. In both countries the ongoing confiscation and delivery of orphaned chimpanzees to various rehabilitation centres (and unregulated zoos in Nigeria) is also testament to the hunting pressure that wild chimpanzee populations are under across their range, remembering that other chimpanzees will most likely have died for each recovered infant.

The protected areas highlighted in each Chimpanzee Conservation Planning Unit provide refuge to more than half the known chimpanzee population. Unfortunately most of these protected areas are poorly managed and some exist on paper only. Almost all of them suffer from inadequate funding either from national or state governments and some rely almost completely on donor support. Forest reserves in Nigeria are managed at the state level and are often neglected and under-funded by state governments who lack the resources or expertise to enforce wildlife legislation. As a result, many forest reserves in the country have been largely destroyed by farming and logging. Habitat in national parks has been relatively well preserved (with some notable exceptions), although the hunting of larger animals including ungulates and anthropoid primates remains an almost ubiquitous problem. Well-developed bushmeat trade routes exist, fuelled by a strong Nigerian demand in the border region. In Cameroon, several areas previously classified as forest reserves have been designated as logging concessions, and similar problems exist in Nigeria where little or no protection is given to wildlife in forest reserves and logging concessions.

In January 2009, the Cross River State Governor declared a two-year moratorium on all timber felling in the state. To support the ban, the Anti-deforestation Task Force (ATF) was created, a field operation-based unit with authority to confiscate all timber and any vehicle carrying timber in the state, by road or river. The Forestry Commission was restructured to focus activities on forest conservation and all targets for revenue generation were dropped. The ATF has not stopped illegal logging, but it has exposed the ways and means of this trade, including the very high volume of timber illegally extracted from Cameroon, and floated down the Cross River into Nigeria. MINFOF has expressed interest in collaborating with the National Park Service and Cross River State Forestry Commission, including the ATF, on efforts to control the cross-border timber trade and to strengthen transboundary law enforcement between the two countries.

A number of measures are needed in order to improve law enforcement. In many sites (especially in Cameroon), additional protection staff are required. In all sites, improved monitoring and law enforcement capacity are needed. Effective law enforcement also involves building greater awareness and support amongst other law enforcement agencies and the judiciary. In Cameroon, the wildlife law-enforcement organisation LAGA (Last Great Ape) is working with MINFOF to investigate, prosecute and publicise sentences resulting from wildlife crimes, specifically in relation to flagship species such as chimpanzees. The success of their work has led to the collaboration extending into other Central African countries, which also have a historical record of weak enforcement of wildlife protection laws.

Law Enforcement Priority Actions	Potential implementing partners	Time frame	Funding requirement
• Revise existing legislation for chimpanzee protection including the Endangered Species Act (Nigeria), and 1994 Wildlife Law (Cameroon)	FedMinEnv, MINFOF, NGO partners	2–3 years	*
• Campaign to stop the live trade of infant chimpanzees and sale of chimpanzee meat and body parts in markets	MINFOF, FedMinEnv, CRSFC, NESREA, State Govts, NGO partners	5 years	$100,000
• Capacity building for wildlife officials for planning and executing special operations to arrest and prosecute chimpanzee hunters	MINFOF, NNPS, LAGA	1 year	$50,000
• Awareness campaign targeting all transboundary law enforcement, such as customs and immigration officials, and judges.	Customs, Immigration, Judiciary, MINFOF, NNPS, NGO partners	2 years	$60,000

* Governments are solely responsible for the cost of this action

Transboundary Issues

Transboundary cooperation between protected areas enhances protection across the landscape and offers improved control of threats that can cross international boundaries, such as poaching, fire, pests, diseases, trade in bushmeat, timber and other forest products, and wildlife trafficking. Transboundary cooperation can also improve levels of national commitment to conservation when this is seen as a component of international cooperation and facilitates more effective research. At least 20% of the *P. t. ellioti* population is found at sites that are bisected by the international boundary between Nigeria and Cameroon, pointing to the need for a transboundary conservation approach in order to mitigate shared threats.

From south to north, *P. t. ellioti* populations are shared between Korup National Park, Cameroon and the Oban Division of Cross River National Park in Nigeria; Ejagham Forest Management Unit, Cameroon and the Ndebiji Hills area of the Ikpan block in Nigeria; Takamanda National Park, Cameroon and the Okwangwo Division of Cross River National Park in Nigeria; the Baissa Forest Reserve in Nigeria and the Ako-Mbembe Forest Reserve in Cameroon; and Tchabal Mbabo areas in Cameroon and the Mambilla Plateau/Gashaka-Gumti National Park area in Nigeria.

Efforts to initiate some form of transboundary collaboration have been launched at a number of these sites. The most successful to date has been between the Okwangwo Division of Cross River National Park in Nigeria and the neighbouring Takamanda National Park where joint patrols, exchange visits and annual joint planning meetings are held.

Transboundary issues Priority Actions	Potential implementing partners	Time frame	Funding requirement
• Signing of a joint inter-governmental agreement for improved collaboration between contiguous protected areas and other areas of high biodiversity value	MINFOF, CRSFC, TSFC, NNPS	1 year	$10,000
• Improve levels of communication and coordinate conservation efforts through an annual joint planning meeting between Nigeria and Cameroon	MINFOF, CRSFC, NNPS, KfW, WCS, GTZ, WWF, TSFC	Annually	$350,000
• Encourage joint patrols between contiguous protected areas and target illegal timber trade and the sale of endangered species (bushmeat trade)	MINFOF, CRSFC, NNPS, KfW, WCS, GTZ, WWF, LAGA, NCF, Pandrillus, NESREA, CITES	5 years	$250,000
• Facilitate exchange visits and capacity building for protected area staff	NNPS, MINFOF, WCS, WWF	Annually	$50,000
• Awareness campaign targeting all transboundary law enforcement, customs, and immigration officials	WCS, WWF, NNPS, MINFOF, CRSFC, NCF, TSG, Customs, Immigration, Pandrillus	5 years	$125,000
• Coordinate joint biological surveys and exchange of data	MINFOF, NNPS, CRSFC, WCS, WWF	5 years	$100,000

Rangers from Takamanda National Park, Cameroon, and the Okwangwo Division of Cross River National Park, Nigeria, meet on the international boundary for a joint patrol. Photo: WCS Takamanda-Mone Landscape Project

A 2008 transboundary gathering of park management authorities and technical partners from Cameroon and Nigeria at the headquarters of Cross River National Park. Photo: Ymke Warren, WCS Takamanda-Mone Landscape Project

The Role of Chimpanzee Sanctuaries

The illegal trade in live infants (Box 5) is a significant threat to chimpanzees in Nigeria and Cameroon, whether infants are targeted purposefully or obtained opportunistically during bushmeat hunting encounters. Only a very small number of infants probably survive the abuse, malnourishment, stress and disease associated with capture, captivity and transport. Chimpanzee numbers at rescue facilities continue to increase across Africa; there are currently 13 facilities housing several hundred chimpanzees in eight habitat and three non-habitat nations. In Nigeria and Cameroon four facilities provide long-term care for nearly 200 displaced wild born chimpanzees, around 70 of which are *P. t. ellioti*. These are Drill Ranch in Cross River State, Nigeria; Limbe Wildlife Centre in Limbe, South West Region, Cameroon; Sanaga-Yong Chimpanzee Rescue Centre in East Region, Cameroon, and Ape Action Africa (formerly Cameroon Wildlife Aid Fund) in Centre Region, Cameroon. Drill Ranch and Limbe Wildlife Centre are in *P. t. ellioti* range; both were founded and are managed by Pandrillus.

These projects provide more than a safe environment for once-wild primates. Sanctuaries engage the public as education centres, raising awareness and interest about the animals themselves and the issues surrounding the conservation of chimpanzees and other species. Limbe Wildlife Centre hosted nearly 40,000 Cameroonian visitors in 2009. For nearly all local visitors, this is their first opportunity to see healthy chimpanzees socializing with one another, and their charisma can emphasize the importance of conserving Cameroon's and Nigeria's natural heritage. Projects located in rural areas, such as Drill Ranch and Sanaga-Yong, provide economic benefits to local communities, and can have a multiplying effect by attracting other conservation-oriented initiatives. Sanctuary chimpanzees have also provided unique opportunities for genetics, virology and other research opportunities, expanding our knowledge of *P. t. ellioti.*

The fact that orphan chimpanzees continue to arrive at these facilities highlights failure to protect the species in the wild. Finding lasting solutions for orphaned chimpanzees already in captivity, such as reintroduction (see Box 6, page 42), is challenging. The real solution is to stem the flow of orphans to sanctuaries by enforcing legislation that protects chimpanzees in the wild.

Chimpanzee Sanctuaries Priority Actions	Funding requirement
• Increase fines for trafficking in chimpanzees or killing or housing them	$500,000
• Discourage zoos from housing chimpanzees	
• Develop long-term funding sources for sanctuaries	
• Support development of reintroduction proposals, following IUCN *Best Practice Guidelines* including site surveys (Beck et al. 2007; Kühl et al. 2008)	

Young rescued chimpanzees at Drill Ranch, Afi Mountain Wildlife Sanctuary, Nigeria. Photo: Richard Bergl

Box 5
The live trade in chimpanzees

There is a continuing, illegal market in Cameroon, Nigeria and overseas for young chimpanzees as pets or as resort and zoo attractions. Nigeria is well known for illegal trafficking of chimpanzees and other wildlife, with many documented cases of animals smuggled by air to the Middle East. It is believed that many of these animals are smuggled into Nigeria from Cameroon, since the Nigerian population could not supply this level of trafficking. Since infants are captured when hunters kill their mothers, one or more chimpanzees are killed for every infant that ends up in trade. A presumably substantial, but unknown, number of orphans are not recovered by sanctuaries; the number that are recovered indicate the scale of hunting that continues. In 2009, Limbe Wildlife Centre received four chimpanzees, while Drill Ranch received one. Of 46 chimpanzees living in the Limbe Wildlife Centre facility in 2009 from which genetic material was extracted, 32 were found to have *P. t. ellioti* genotypes of western Cameroon, 10 of *P. t. troglodytes* from southern Cameroon, and four from the transition zone between the two subspecies in central Cameroon (Ghobrial et al. 2010). As with bushmeat hunting, the primary financial beneficiary of live trade is not the local hunter, but many tiers of middlemen, between the hunter and the end-consumer.

Box 6
Reintroduction

Finding satisfactory conditions for reintroduction of *P. t. ellioti* is difficult since habitat loss and hunting are widespread, and successful reintroductions require extensive pre- and post- release support. Reintroduction proposals should adhere to *IUCN Best Practice Guidelines for the Re-Introduction of Great Apes* (Beck et al. 2007). In addition to the challenge of identifying a suitable release site, other site-related requisites include low human population densities, local community support to minimize human-chimpanzee conflict (including hunting) and securing permanent protection for the area. If these conditions are achieved, reintroductions would function as a conservation initiative for the release site. Ideally, reintroduction would occur where there is no existing wild population, or where only a very small, isolated, population exists. In this way, the reintroduced animals would restore an extirpated population or reinforce a wild population that may otherwise not be viable in the future. Reintroduction plans face unique challenges in Cameroon because two chimpanzee subspecies co-exist in certain areas. Reintroductions of *P. t. ellioti* could only occur in those areas where the natural history of chimpanzees is well understood, and each chimpanzee in a release group must necessarily be of a *P. t. ellioti* genotype.

The Role of Research in Conservation Planning

Effective conservation planning requires accurate information that can only be obtained by supporting a comprehensive, sustained, regional research programme that incorporates monitoring, distribution surveys, socio-ecological studies and population genetics analysis. A complementary, interdisciplinary research programme is especially important for *P. t. ellioti* because scientists only recently realised the distinctiveness of this form of chimpanzee (Gonder et al. 1997, 2006; Gagneux et al. 2001). Consequently, *P. t. ellioti* is the most understudied and enigmatic of all chimpanzees. Despite limited information about *P. t. ellioti*, studies from several scientific disciplines including population genetics, morphology, socioecology, virology and epidemiology reveal that Cameroon and Nigeria have played an important role in the evolution of the chimpanzee species as a whole; and that *P. t. ellioti* has a unique genetic, ecological and cultural heritage.

Research in Conservation Planning Priority Actions	Potential implementing partners	Time frame	Funding requirement
• Expand population monitoring efforts in protected areas known or suspected to harbour large numbers of chimpanzees	MINFOF, WCS, WWF, NCF, ZSSD, ACF, ERuDeF, universities	5 years	$500,000
• Clarify the distribution and abundance of chimpanzees in poorly known areas	MINFOF, WCS, WWF, NCF, ZSSD, ACF, universities	2–3 years	$100,000
• Encourage and expand investigations on the socioecology of *P. t. ellioti* in areas with the most viable populations	ZSSD, GPP, SUNY-Albany	5 years	$500,000*
• Conduct more extensive population genetic analyses to clarify (a) how *P. t. ellioti* is related to other chimpanzee subspecies; (b) the genetic variability within *P. t. ellioti*; and (c) the degree of connectivity between communities across the region	SUNY-Albany	2 years	$150,000*
• Conduct interdisciplinary studies to illuminate how and why Nigeria and Cameroon act as an engine of chimpanzee evolution	ZSSD, SUNY-Albany, GGP, WCS	5 years	$2,000,000*

*These activities are not included in the total estimated costs of this action plan.

Distribution surveys

Despite the completion of several surveys in recent years, we still lack comprehensive information on the overall distribution and abundance of *P. t. ellioti*. Most areas still require systematic surveys, many areas urgently (see "Survey Priorities" on page 37).

Population monitoring

Twenty-five years ago, chimpanzees were believed to be nearly extinct in Nigeria and well on their way to extinction in Cameroon. However, reconnaissance and transect surveys now show that large, healthy populations persist in many areas. Despite these efforts, the size of the chimpanzee populations in these areas remains uncertain. Population surveys should be encouraged and expanded across the range of *P. t. ellioti* to estimate population size with the appropriate degrees of accuracy and precision. Just as importantly, regular monitoring will allow for the detection of changes in population size—for example, a rapid decrease due to an increase in hunting levels or disease outbreaks. Monitoring in this way will also make it possible to document any population changes following conservation management measures.

Socioecology

Long-term research efforts at permanent research stations exist at Gashaka-Gumti National Park and proposed Ebo National Park; and researchers are now poised to make significant contributions towards characterizing the natural history of *P. t. ellioti*. For example, ongoing research at Ebo has shown that *P. t. ellioti* uses stone tools (Morgan and Abwe 2006); a behaviour previously observed only westwards from Ivory Coast.

Such investigations can contribute to applied conservation efforts. By identifying the ecological factors that influence distribution, ranging patterns and core habitat requirements, for example, it is possible to identify suitable chimpanzee habitat at other localities. Perhaps one of the most important benefits of permanent research stations is their contribution towards protecting populations and deterring illegal hunting (Wrangham and Ross 2008). In addition, long-term studies of chimpanzee feeding ecology, for example, require botanical surveys, which also contribute to accurately identifying potential chimpanzee habitat where future conservation effort may be concentrated. Finally, research stations contribute to community outreach, with the local human community benefiting from employment and, in some cases, development assistance.

Securing sustained support for these research stations is challenging. The development of a permanently manned research station at Mbam & Djerem National Park was a provision in the Park's Management Plan, launched in 2008, yet is still to be realised. Coordinated efforts are needed between these research stations to characterize the unique ecological and cultural heritage of chimpanzees occupying this region of Africa.

Population genetics analysis

Population genetic studies have provided valuable insights into the evolutionary history of chimpanzees, and more extended studies could better resolve the disputed phylogenetic status of *P. t. ellioti*. There is still much to be learned about the genetic history of *P. t. ellioti*. For example, interbreeding between *P. t. ellioti* and *P. t. troglodytes* probably occurs only near the confluence of the Mbam and Sanaga rivers; this will only be understood further through fine-scale population genetic studies. The relationship of chimpanzees in southwestern Nigeria to other populations remains unclear. The limited available evidence suggests that chimpanzees in western Nigeria should be classified as *P. t. ellioti*, although the degree of connectivity between these chimpanzees and those further east is still not well understood. Ten to fifteen faecal samples are urgently needed from chimpanzees in southwestern Nigeria to resolve more clearly their relationships with other chimpanzees. These population genetic studies could also be complemented by morphometric studies of chimpanzees at sanctuaries in Nigeria and Cameroon.

Studies of population genetics can also contribute to conservation planning by estimating elusive population parameters, such as effective population size and patterns of migration (Guschanski et al. 2009; Vigilant and Guschanski 2009; Arandjelovic et al. 2010). Such studies can also identify reservoirs of genetic diversity and describe population units that, until the recent past, have freely exchanged genes (Bergl and Vigilant 2007). Population genetics data may also contribute to developing reintroduction programs for sanctuary chimpanzees, and may be useful for identifying hunting hotspots to help focus scarce conservation resources (Ghobrial et al. 2010).

Collecting chimpanzee hairs and faecal sample from a night nest for population genetic analyses in the proposed Ebo National Park, Cameroon, Photo: Ekwoge Abwe, ZSSD

The Need for Sustained, Long-term Funding

The challenge of securing long-term funding for even the highest priority *P. t. ellioti* sites is considerable, and ultimately the financial commitment and political will of governments will influence the continued survival of great apes at many sites across the tropics. Although grant funding may provide valuable short-term support for conservation, more sustainable long-term solutions are required. A few great ape sites outside of the *P. t. ellioti* range have successfully established trust funds or nature-based tourism (Box 7), and similar options for helping chimpanzee conservation in this region should also be considered.

Where chimpanzees and other great apes are known to persist in timber concessions, opportunities to partner with extraction companies should be investigated. This relationship can be especially important for companies seeking FSC certification. The prospect of raising long-term, site-based funding from the generation of carbon credits, such as REDD mechanisms (Box 8) or other Payments for Environmental Services (PES), is a promising development, although working examples remain limited.

Box 7
Great Ape Tourism

Tourism that involves habituating great apes generates a great deal of interest from conservation planners, local people and potential tourists. The IUCN has published a monograph of *Best Practice Guidelines for Great Ape Tourism* (MacFie and Williamson 2010). At this time, there are no projects or conservation areas that appear to meet the rigorous IUCN criteria for establishing and maintaining a successful ape tourism project in the range of *P. t. ellioti*.

The best practice guidelines set out several guiding principles for developing great ape tourism projects. The principles emphasize that conservation should always be the primary goal of such projects. They also require that investment in ape tourism projects must be sustained in perpetuity, and that the management of ape tourism projects must be based on sound and objective science.

Furthermore, serious future efforts to develop tourism projects should only be started after a full, objective analysis of its feasibility, impact and sustainability, including a multi-stakeholder review, before funding is committed and before promises are made to local communities as to the arrival of tourism and its associated development.

Box 8
Reducing Emissions from Deforestation and Degradation (REDD and REDD+)

Pilot REDD+ projects are being developed at Afi-Mbe-Okwangwo and Ekuri-Iko Esai in Nigeria and in the Takamanda-Mone region in Cameroon. Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development (United Nations 2010). REDD+ goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

Currently, the market for forest carbon consists of a regulated and a voluntary market. The funds generated from these markets can be used to fund the creation of protected areas and their management to conserve biodiversity and safeguard critical ecosystem services important for human livelihoods. These funds can also provide financial incentives for community-led land stewardship. To date, most of the sales of emissions reductions from forest related projects (e.g., avoided deforestation, reforestation and/or afforestation efforts), have occurred in the voluntary carbon market, which has grown enormously in recent years.

The rules and regulations of this potential policy are being widely debated and elaborated upon as various REDD pilot projects are being established around the world in anticipation of REDD being implemented in a post-Kyoto framework.

Conclusions

Nigeria-Cameroon chimpanzees exist in a small range of southern Nigeria and western Cameroon, an area characterized by some of the highest human population densities in all of Africa. Forest destruction to supply the timber trade, and conversion resulting from agriculture and cattle-grazing has produced increasingly isolated forests many of which harbour small, isolated populations of chimpanzees. As a result of these processes, there are now estimated to be only between 3,500 and 9,000 individuals of *P. t. ellioti* remaining, making this the most endangered of the four subspecies of chimpanzee. Since Nigeria-Cameroon chimpanzees exist in a region known to be a global biodiversity hotspot, characterized by many other restricted-range and endangered wildlife species, by acting on priorities set out in this action plan we will be protecting not only chimpanzees, but a host of other, less charismatic species.

Coordinating chimpanzee conservation action between Nigeria and Cameroon is essential, since some of the most viable populations straddle the international border. Given the existence of strong state governments in Nigeria and regional governments in Cameroon, as well as the growing popularity of local conservation initiatives, this plan organises recommendations for conservation action in 'Chimpanzee Conservation Priority Units', which often correspond to political administrative units. Within these CCPUs we have then prioritised sites where we believe conservation effort will have most effect. By doing this, we have been able to argue for the conservation both of sites with large numbers of chimpanzees, such as in the heavily forested zones of west and central Cameroon, as well as for much smaller chimpanzee populations in southwestern Nigeria.

By involving local experts with knowledge of each of these Chimpanzee Conservation Planning Units, we have attempted to identify those actions we believe are of highest priority at each site. These actions vary widely, and reflect different levels of knowledge across sites as well as varying threats. In addition to identifying priority actions specific to each site, we have considered region-wide actions, such as improving transboundary collaboration and law enforcement and the need for more research that can inform our conservation planning. Recognizing that conservation must have the participation and support of local people in order to be effective, we have considered issues of community involvement, community awareness, and education outreach, as well as the need to enhance the institutional and human capacity of national conservationists. Our recommendations have received the endorsement of the ministers in charge of wildlife in the governments of both Cameroon and Nigeria.

We have estimated the costs of implementing the priority actions in this plan to be $14,670,000 over a five-year period. We hope that this Conservation Action Plan, which has been developed by those with the best knowledge of the situation of the Nigeria-Cameroon chimpanzee, will both guide future chimpanzee conservation in this region and help raise the funds necessary to implement the priority actions.

Recognizing that conservation must have the participation and support of local people in order to be effective, we have considered issues of community involvement, community awareness, and education outreach, as well as the need to enhance the institutional and human capacity of national conservationists. Our recommendations have received the endorsement of the ministers in charge of wildlife in the governments of both Cameroon and Nigeria.

By involving local experts with knowledge of each of these Chimpanzee Conservation Planning Units, we have attempted to identify those actions we believe are of highest priority at each site.

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Acronyms

ACF	African Conservation Foundation
AMWS	Afi Mountain Wildlife Sanctuary
ATF	Anti-deforestation Task Force
CAMM	Conservation Association of the Mbe Mountains
CIFOR	Centre for International Forestry Research
CITES	Convention on International Species of Wild Fauna and Flora
CRNP	Cross River National Park
CRSFC	Cross River State Forestry Commission
DIN	Development in Nigeria
ERuDeF	Environment and Rural Development Foundation
FFI	Flora and Fauna International
FGN	Federal Government of Nigeria
FMU	Forestry Management Unit (Unite Forestiere d'Amenagement)
FSC	Forestry Stewardship Council
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPP	Gashaka Primate Project
GGNP	Gashaka-Gumti National Park
GrASP	Great Ape Survival Project
IIED	International Institute for Environmental Development
IUCN	International Union for the Conservation of Nature
KfW	Kreditanstalt für Wiederaufbau Entwicklungsbank (German Development Bank)
LAGA	Last Great Ape Organisation
MINESUP	Ministry of Higher Education, Cameroon
MINFOF	Ministry of Forestry and Wildlife, Cameroon
MINRESI	Ministry of Scientific Research, Cameroon
NCF	Nigerian Conservation Foundation
NCZoo	North Carolina Zoo
NMFP	Nigeria Montane Forest Project
NNPS	Nigeria National Parks Service
PES	Payments for Environmental Services
SSC	Species Survival Commission
SUNY	State University of New York
REDD	Reducing Emissions from Deforestation and Forest Degradation
TASU	Taraba State University
TOU	Technical Operations Unit
TRC	Transformation Reef Cameroon
TSG	Taraba State Government
UFA	Unite Forestiere d'Amenagement (Forestry Management Unit (FMU))
VFMC	Village-Forest Management Committee
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature
ZSSD	Zoological Society of San Diego

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Nigeria-Cameroon chimpanzee conservation action-planning workshops: Limbe, Cameroon (3–5 October 2009), Calabar, Nigeria (6–9 October 2009), Limbe, Cameroon (26–28 February 2010).

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We sincerely hope that this action plan will encourage these past and current donors to renew their generous support, and encourage others to join their efforts to conserve the Nigeria-Cameroon chimpanzee.

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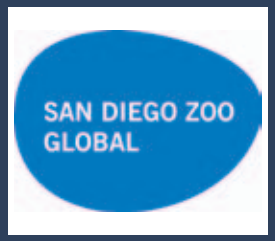

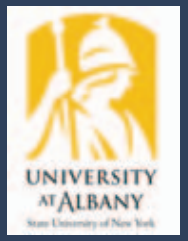

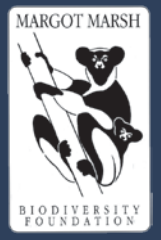

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