



WWF

STRATEGY

2011

AFRICAN GREAT APES ACTION PLAN

2011-2017

The development of this Species Action Plan emanates from the first strategic document produced by P.J. Stephenson outlining a clear technical framework for the first five years of the African Great Apes Programme (2002-2007). While we have in many ways built upon the original strategies outlined in the first plan, much has changed in African great ape range territory since the launching of the first plan. Timber and mineral exploitation are on the rise, human populations are expanding and putting ever more pressure on remaining great ape habitat for fuelwood, agricultural space and sustenance. Illegal commercial wildlife trafficking is increasing, and legal impunity continues to limit the effectiveness of conservation efforts in and around protected areas, frequently rendering futile the brave work undertaken by government rangers and other field project staff. This plan attempts to take a direct approach to address these complex obstacles.

Special thanks to P.J. Stephenson for his assistance in the early elaboration of the plan's structure and objectives, and for his continued support throughout its evolution.

The participants of the Congo Basin Species Workshop held in 2009 in Yaoundé, Cameroon, were crucial in helping to identify the key threats affecting great ape conservation in Central Africa.

Ofir Drori has offered many challenging and stimulating discussions on how to make many aspects of the overall plan more effective, functional and measurable.

Liz Williamson, the IUCN/SSC's special Section on Great Apes Coordinator, has been a trusted advisor throughout the elaboration of the plan.

The WWF-Netherlands' 2008-2012 Investment Strategy for the Conservation of African and Asian Great Apes (Ellis 2008) was a useful initial reference for the development of the present action plan.

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Mountain gorilla family group in habitat, Virunga Mountains, Rwanda, Africa

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ACRONYMS

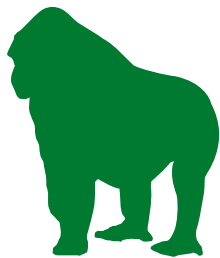
ACC	African Convention on the Conservation of Nature and Natural Resources	ITTO	International Tropical Timber Organization
AEP	African Elephant Programme	IUCN	International Union for Conservation of Nature
AfGAP	African Great Apes Programme	LAGA	Last Great Ape Organization
AFD	Agence Française de Développement	MTI	Market Transformation Initiative
APES	Ape Populations, Environments and Surveys	NGO	Non-governmental organization
AWF	African Wildlife Foundation	NGASP	National Great Ape Survival Plan
CAR	Central African Republic	NO	National organization
CARPO	Central Africa Regional Programme Office	PALF	Projet Application Loi Faunique
CBFP	Congo Basin Forest Partnership	PA	Protected area
CBD	Convention on Biological Diversity	PAPECALF	Plan d’Action Sous Regional des Pays de l’Espace COMIFAC pour le Renforcement de l’Application des Legislations Nationals sur la Faune Sauvage
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora	PES	Payments for ecosystem services
CMS	Convention on the Conservation of Migratory Species	PLE	Poor law enforcement
COMIFAC	Central Africa Forest Commission	RALF	Renforcement de l’Application de la Loi Faunique
DNA	Deoxyribonucleic Acid	RAP	Regional Action Plan
DRC	Democratic Republic of Congo	SAP	Species Action Plan
ESARPO	Eastern and Southern Africa Regional Programme Office	SGA	Section on Great Apes (IUCN)
ECOFAC	Conservation et Utilisation Rationnelle des Ecosytèmes Forestiers d’Afrique Centrale	SSC	Species Survival Commission (IUCN)
FFI	Flora and Fauna International	SYVBAC	Système de Suivi de la filière Viande de Brousse en Afrique Centrale
FSC	Forest Stewardship Council	TRIDOM	Odzala-Minkebe-Dja Trinational Landscape
GAA	Government aid agency	UNEP	United Nations Environment Programme
GFTN	Global Forest and Trade Network	USAID	United States Agency for International Development
GHoA	Green Heart of Africa	USFW	United States Fish and Wildlife Service
GI	Global Initiative	WCS	Wildlife Conservation Society
GRASP	Great Apes Survival Project	WCF	Wild Chimpanzee Foundation
HCVF	High conservation value forest	WHC	World Heritage Convention
ICCN	Institut Congolais pour la Conservation de la Nature		
IGCP	International Gorilla Conservation Programme		

EXECUTIVE SUMMARY

The African great apes – chimpanzees, bonobos, western and eastern gorillas – are mankind’s closest living relatives, and have captured human imagination since they were first discovered. African great apes express emotion, use tools, and have complex relationships within their social groups – and there is still so much more that we do not yet know about these animals.

It is no wonder that thousands of people travel to Africa each year just to catch a glimpse of these elusive animals in the wild.

“Illegal commercial wildlife trafficking is increasing, and legal impunity continues to limit the effectiveness of conservation efforts in and around protected areas, frequently rendering futile the brave work undertaken by government rangers”



However, all four species of African great apes are today endangered: their populations have experienced significant reductions over the past 20-30 years and for most of them this decline is expected to continue in the future if the scale of conservation efforts does not improve significantly (IUCN 2010).

The main threats to African great apes are commercial hunting, habitat loss and fragmentation, and disease spread (e.g., Ebola haemorrhagic fever).

The major challenge is to ensure the effectiveness of conservation strategies in a regional context where the weak enforcement of national laws and international treaties are constant impediments to conservation progress.

Building on 40 years of experience in great apes conservation, WWF launched the African Great Apes Programme (AfGAP) in 2002 to guide and harmonize WWF conservation strategy in the African sub-region. AfGAP works in close collaboration with range-state governments, local stakeholders, partner agencies and the international community, pooling efforts to promote the conservation of chimpanzees, gorillas and bonobos in their natural environment.

AfGAP’s Vision (2050) is: ‘By 2050 viable populations of all species and subspecies of African Great Apes are conserved in their natural habitat.’

The AfGAP Action Plan 2011-2017 identifies 12 priority landscapes for the conservation of African great apes and is developed around six main objectives:

OBJECTIVE 1

Protection and law enforcement

By 2017, at least one protected area within each priority landscape benefits from improved protection, as evidenced by at least one the following: a 25% decrease of illegal activities within the protected area; a 25% increase in the apprehension of illegal traffickers (such as hunters, dealers, traders, but also illegal miners, loggers etc.); a 30% increase in appropriate follow-up of judiciary processes for great ape and other wildlife-related infractions.

OBJECTIVE 2

Management

By 2017, the management of at least one protected area within each priority landscape is improved by the adoption and implementation of locally developed, updated management plans and/or other land-use planning tools.

OBJECTIVE 3

Policy and industry engagement

By 2017, African great ape conservation is improved in at least six range countries by the effective enforcement of wildlife legislation and other related policies (including those relating to international conventions such as CITES, CBD, CMS); the revision and (when appropriate) strengthening of relevant legislation; and an increase of at least 30% in the proportion of logging and mineral extraction companies which adhere to and implement best practices and WWF-supported certification schemes.

OBJECTIVE 4

Community support and awareness

By 2017, communities within at least six priority landscapes receive support to promote economically sustainable management strategies for community development which have minimal adverse impact on great apes and their environment, reduce human/ape conflicts, and increase awareness and support for the conservation of great apes and their environment.

OBJECTIVE 5

Monitoring and research

By 2017, the size of great ape populations in at least one protected area within each priority landscape is estimated, the main threats affecting them are known, data are regularly collected to assess population trends and results are available for informed conservation decision-making; results from at least four research projects in topics critical to great ape conservation, such as disease management, tourism impact, bio-monitoring, population dynamics and monitoring illegal killing and trade, are integrated into conservation strategic planning.

OBJECTIVE 6

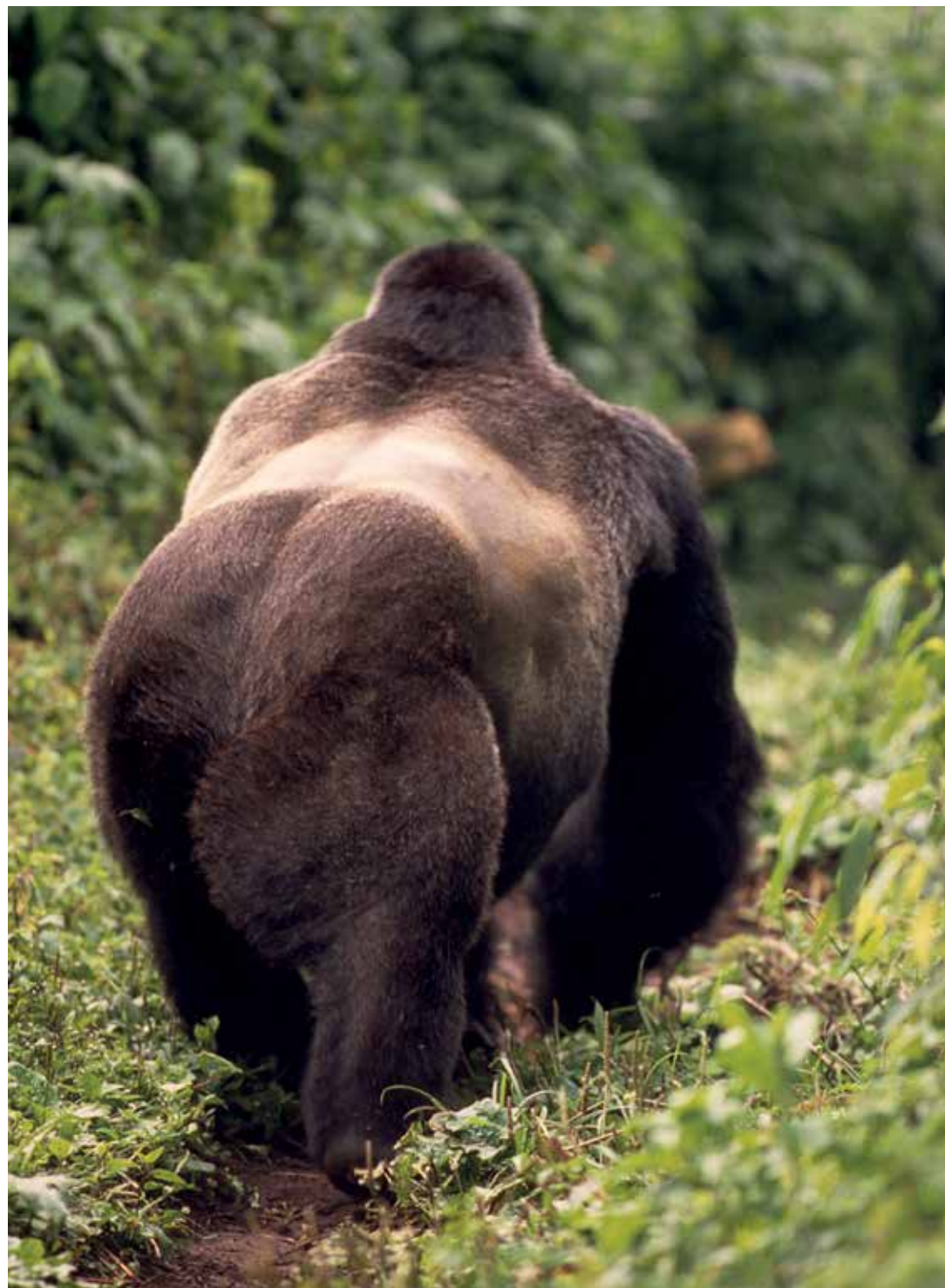
Habitat preservation

By 2017, at least one population of each great ape species will benefit from an increase in habitat range under protection through the creation of new protected areas and/or through improved management and protection of critical corridor areas around and between priority sites, including high conservation value forests (HCVFs), certified logging concessions and conservation of areas of unique biological interest to great apes.

AfGAP will work closely with the field projects to develop site-specific conservation strategies, including managing and protecting priority areas, improving community livelihoods, raising awareness and support to great ape conservation, improving extractive industry practices (logging, mining and oil extraction), and effectively and efficiently monitoring great apes populations.

Additionally, recognizing that any conservation initiative will have a durable impact only when the problem of weak law enforcement (and judiciary ineffectiveness) is duly tackled, AfGAP will promote and engage in national and regional efforts to ensure more effective law enforcement. Addressing this problem will allow the creation of a much-needed deterrent mechanism affecting both the poacher (or the illegal forester/miner etc.) and the higher placed “white collar” dealers and traders who perpetrate and profit from the commerce of illegal forest products including great apes. Similarly, there is a growing need to monitor and ensure accountability to ratified international treaties and conventions, as well as to ensure that private extractive industries adopt and effectively enforce stringent regulations (including voluntary certification schemes) to minimize their impact on forest biodiversity. With the enforcement of the current national laws, international treaties, conventions, agreements and regulations, great apes and their environment will actually stand a chance at long-term survival.

**2017
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LEAST ONE
POPULATION
OF EACH GREAT
APE SPECIES
WILL BENEFIT
FROM AN
INCREASE IN
HABITAT
RANGE**



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Mountain gorilla (*Gorilla beringei beringei*); Virunga National Park, The Democratic Republic of the Congo

1. INTRODUCTION

All four species of African great apes (chimpanzees, bonobos, western and eastern gorillas), as well as the Asian great apes, the orangutans, are today endangered. Their

populations have experienced significant reductions over the past 20-30 years. For most, this decline is suspected to continue in the future (IUCN 2010), unless the scale of conservation efforts improves significantly.

“We must acknowledge that despite commendable efforts from talented conservationists throughout Africa, we are collectively losing the battle to save the last remaining great apes... consequently, more than ever before, we must aggressively pursue strategies and policies which will reverse this trend – if our closest living relatives are to have a chance at long-term survival”

The most significant threats to the survival of great apes have long been identified as illegal hunting, habitat loss and fragmentation, and the spread of infectious diseases. But concerted action is needed to tackle the conditions enabling these threats to persevere despite over 40 years of conservation efforts. Support to great ape conservation and activities such as protecting and managing priority areas, monitoring population trends, improving community livelihoods and raising awareness will have a durable impact only with the effective enforcement of existing national and international legislation and with stronger transparency, monitoring and accountability from all parties.

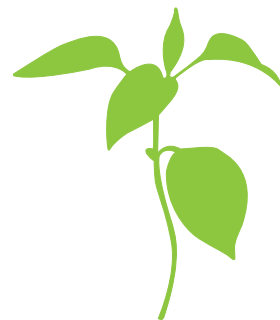
Since it was founded in 1961, WWF has been active in great ape conservation, carrying out population surveys, supporting the establishment, management and protection of new protected areas and promoting behavioural and ecological research, education campaigns, and a more sustainable use of natural resources (Kemf & Wilson 1997). In 2002 it launched the African Great Apes Programme (AfGAP) with the long term goal (over 25 years) to conserve viable populations of all species and subspecies of African great apes. The programme's action plan is intended to guide and harmonize WWF actions in close collaboration with range-state governments, local stakeholders, partner agencies and the international community, to complement each other's efforts and ensure the conservation of chimpanzees, gorillas and bonobos in their natural environment. The current action plan builds on the lessons learned and the results achieved during the programme's first implementing phase (2002-2007). It reviews and integrates recommendations issued from regional and national action plans as well as transboundary strategic plans, resulting from a consensus of regional experts including protected areas managers, range-state government officials, research institutions, and local and international conservation NGOs (including WWF). Priority areas for intervention are selected to define where WWF can make specific contributions, based on the conservation strategy of relevant Global Initiatives and programmes, and their capacity to deliver effective conservation outcomes.

1.1 THE AFRICAN GREAT APES

African great apes have long elicited a deep fascination among their human relatives. Because of their close physical and behavioural resemblance to our own species, local traditional beliefs portray great apes as distant relatives, often prohibiting their killing and consumption. Researchers from all over the world have been drawn to Africa by the opportunity to study great apes, providing insight into how our own species evolved under similar environmental conditions.

Great apes display many of the same behaviours and emotions as humans. They are charismatic, intelligent beings and avid tool-makers. They express enthusiasm with audible laughter, and exhibit what is arguably sadness through prolonged lethargy and signs of distress. Long-term behavioural studies at different locations throughout

**34
RESEARCHERS
HAVE
DOCUMENTED
OVER 34 PLANT
SPECIES THAT
CHIMPANZEES
ARE THOUGHT
TO USE FOR
MEDICINAL
PURPOSES**



chimpanzee range have confirmed local traditions and cultural variations in a range of behaviours including communication, food processing and tool use (McGrew 1992a; Whiten & Boesch 2001). Across 14 sites, researchers have documented over 34 plant species that chimpanzees are thought to use for medicinal purposes (Fowler et al. 2007; Huffman 1997, 2001), a behaviour also studied in the attempt to shed a light on the evolution of self-medication in early hominids.

Great apes play a critical role in the maintenance and regeneration of their forest ecosystem, most notably through the facilitation of seed dispersal and germination (Lambert & Garber 1998; Voysey et al. 1999; Wrangham et al. 1994). They also have a significant effect on shaping the structure of their environment (Plumptre 1995), trampling, bending and breaking vegetation as they gain access to food, travel or build their nests (Rogers et al. 1998), creating light gaps which facilitate the germination and subsequent emergence of non-shade-tolerant plant species.

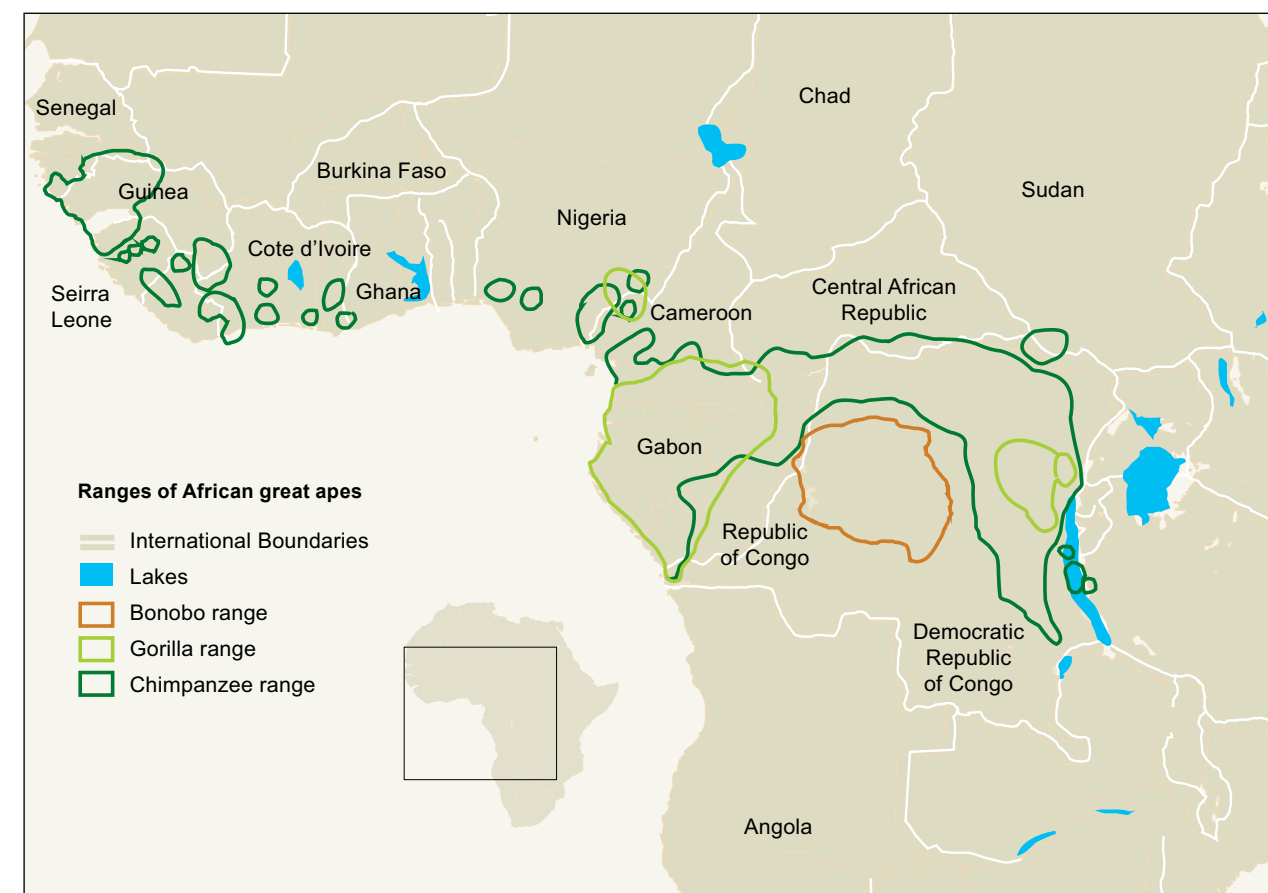
The slow reproductive rate of all great apes makes them particularly vulnerable to population declines. Females, who generally give birth to only one offspring at a time, have long inter-birth intervals: several years elapse between births as they attend to their youngest infants' needs for food, transport and protection. Mountain gorilla females generally give birth for the first time around 10 years of age (Harcourt et al. 1981; Watts 1991) and have an average interval of four years between births (Robbins et al. 2006). Wild chimpanzees have an even lower reproductive rate, with females reaching sexual maturity at 10-13 years and providing care to their infants over 4-6 years (Boesch & Boesch-Achermann 2000; Goodall 1986). Although variations of lifetime reproductive success may occur within species across their range, overall great ape reproductive patterns imply that very long recovery periods would be required to compensate for population declines.

Great apes make ideal flagship species: they provide a focus for raising awareness, stimulating action and generating resources for broader conservation efforts. Focusing efforts on these “umbrella” species will also help conserve the many other species which share their habitats and/or are vulnerable to the same threats. At the same time, protecting great ape habitats will also benefit the human populations who traditionally depend on the same environment as a source of water, food, medicine and other forest products.

The taxonomy used in this action plan to describe the African great apes follows the one most commonly referred to, and endorsed by the IUCN-Primate Specialist Group. This lists two species of chimpanzees (the bonobos and the common chimpanzee, with four subspecies) and two species and four subspecies of gorillas (IUCN 2010). A general overview of the principal issues in great ape taxonomy is presented in Annex I, as ongoing research may affect species and/or subspecies classifications.

For each species and subspecies, we present the conservation status and threats identified in the 2008 assessment by the IUCN Red List of Threatened Species (IUCN 2010). The distribution and the current knowledge on the abundance of all the species and subspecies of African great apes are summarized in Table 1 and Fig. 1.

Fig. 1. Ranges of African great apes (GRASP 2005)



Orphaned Western
Lowland Gorilla
(*Gorilla gorilla gorilla*)
reintroduced
into the wild



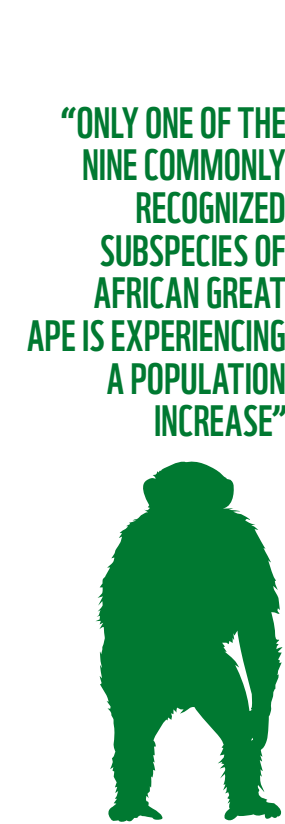
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Table 1. Great ape distribution, population estimates and trends

Species/ subspecies	Country	Population estimates	Sources and notes (Trends from IUCN Red List of Threatened Species)
Eastern chimpanzee (<i>P. t. schweinfurthii</i>)	Sudan	?	Status Survey and Conservation Action Plan for the Eastern Chimpanzee (Plumptre et al. 2010) • Due to the large unsurveyed areas in DRC and CAR and other gaps in population estimates, only the minimum number of chimpanzees known to occur in recently surveyed areas is given.
	Uganda	5,000 -	
	Rwanda	275 -	
	Burundi	450 -	
	Tanzania	2750 -	
	DRC	33,580 –	
	CAR	?	
Total estimate	42,055 -		Trend: Decreasing ↘
Western chimpanzee (<i>P. t. verus</i>)	Senegal	200 – 400	Regional Action Plan for the Conservation of Chimpanzees in West Africa (Kormos & Boesch 2002) * Preliminary findings from nationwide census (TCS 2010) ** Although no new country estimates are available for Côte d’Ivoire, Campbell et al. (2008) found a 90% decline of nest detection compared to the 1989-90 study which led to the population estimate of 8,000-12,000.
	Mali	1,600 - 5,200	
	Guinea-Bissau	600 - 1,000	
	Guinea	8,100 - 29,000	
	Sierra Leone	~ 4,000*	
	Liberia	1,000 – 5,000	
	Côte d’Ivoire	8,00 – 12,000**	
	Ghana	300 – 500	
Total estimate	21,300 – 55,600		Trend: Decreasing ↘
Nigeria Cameroon chimpanzee (<i>P. t. ellioti</i>)	Nigeria	2,000 – 3,000	Regional Action Plan for the Conservation of Chimpanzees in West Africa (Kormos & Boesch 2002) *IUCN Red List (Oates et al. 2008)
	Cameroon	3,000 – 5,000	
	< 6,500*		Trend: Decreasing ↘
Central chimpanzee (<i>P. t. troglo- dytes</i>) and western lowland gorilla (<i>G. g. gorilla</i>)	Cameroon	*	Regional Action Plan for the Conservation of Chimpanzees and Gorillas in Western Equatorial Africa: **”Due to the differences in methodologies used, the timing of the surveys and the difficulty of reliably distinguishing chimpanzee and gorilla nests, country estimates for central chimpanzees and western lowland gorillas were considered too inaccurate and thus they were omitted during the formulation of the regional action plan” (Tutin et al. 2005). ** > 100,000 (Stokes et al. 2008)
	CAR	*	
	Rep. Congo**	*	
	Gabon	*	
	Eq. Guinea	*	
	Angola	*	
	(Kabinda)	*	
Total estimate	???*		Trend: Decreasing ↘
Cross River gorilla (<i>G. g. diehli</i>)	Nigeria	75 – 110	Regional Action Plan for the Conservation of the Cross River Gorillas (Oates et al. 2007)
	Cameroon	125 – 185	
Total estimate	200 – 295		Trend: Decreasing ↘
Eastern lowland gorilla (<i>G. b. graueri</i>)	DRC	Unknown	IUCN Red List (Robbins et al. 2008)
	Uganda		
	Rwanda		
	DRC		

Table 1. Great ape distribution, population estimates and trends. Continued

Species/ subspecies	Country	Population estimates	Sources and notes (Trends from IUCN Red List of Threatened Species)
Mountain gorilla (<i>G. b. beringei</i>)	DRC	400* 480**	Mountain gorillas are separated in two populations, the Bwindi population in Uganda (Gushanski et al. 2009)* and the Virunga population (Virunga Gorilla Census 2010)**, with gorillas rang- ing between Volcanoes NP, Rwanda, Mgahinga NP, Uganda and Virunga NP, DRC.
Total estimate	880		Trend: Increasing ↗
Bonobos (<i>P. paniscus</i>)	DRC	30,000 - 50,000??	IUCN Red List: “There is no substantive data concerning total numbers, although speculative estimates give numbers for a total population size between 29,500 (Myers Thompson 1997) and 50,000 (Dupain and Van Elsacker 2001). Recent surveys indicate that these numbers may still be underestimates. In any case, any number indicating total population size should be considered with the highest caution (Fruth et al. 2008)”. Trend: Decreasing ↘



CHIMPANZEES

(*Pan troglodytes*)

Common chimpanzees (historically also referred to as the “robust” chimpanzees, to distinguish them from the “gracile” chimpanzees, or bonobos) are found in tropical moist forests, grassland-forest mosaics and savannah woodland habitats from sea level to about 3,000m elevation. Chimpanzees are widely distributed in 21 countries across Equatorial Africa, between 13°N and 7°S (Angola, Burundi, Cameroon, Central African Republic (CAR), Republic of Congo, Democratic Republic of Congo (DRC), Côte d’Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Nigeria, Rwanda, Senegal, Sierra Leone, Sudan, Tanzania and Uganda). In 2003, the total chimpanzee population was estimated between 172,700 and 299,700 individuals (Butynski 2003). These estimates were largely obtained by extrapolating results from small surveyed areas to large areas of potential great ape habitat, which is likely to result in overestimates. The scarcity of recent survey work over much of the chimpanzee’s range makes it impossible today to provide a reliable population estimate across the chimpanzee’s full range.

Chimpanzees are omnivorous, largely selecting ripe fruit whenever it is available. Their diet, which has high seasonal and regional variations, also includes leaves, seeds, stems, pith, bark and a small but important animal component including insects, birds, birds’ eggs, and small to medium-sized mammals (reviewed by Inskipp 2005). Chimpanzee hunting behaviour on red colobus monkeys, their most frequent prey, is particularly complex (Boesch et al. 2002). At Taï, Côte d’Ivoire, males frequently cooperate in group hunting, with specific division of roles, leading to higher rates of successful catches compared to when isolated individuals (adult males or females) hunt alone (Boesch and Boesch 1989). Group hunting is also characterized by meat sharing among the hunters, together with the occasional sharing with other group members, such as sexually receptive females (Boesch and Boesch-Achermann 2000). At Gombe, Tanzania, male chimpanzees seem to hunt in “binges”, with periods in which hunting may occur almost daily, resulting in exceptionally high numbers of colobus killed (Goodall 1986; Standford 2005). In large multi-male communities,

50%
THE MAXIMUM
POPULATION
REDUCTION
OVER A THREE-
GENERATION
PERIOD FROM
THE 1970S
TO 2030 IS
SUSPECTED TO
EXCEED 50%

such as Ngogo, Uganda, chimpanzees are particularly successful hunters, killing an estimated 6 to 12% of the red colobus population annually (Watts and Mitani 2002).

The social system in which chimpanzees live is referred to as fission-fusion (Milton 2000): a few to over 100 individuals live in social communities in which sub-groups emerge and dissolve often within a day. The male members of the community (sometimes joined also by females) actively defend the borders of their territory from males of neighbouring communities, occasionally engaging in war-like aggressive interactions (Boesch and Boesch-Achermann 2000; Boesch et al. 2007; Goodall 1986; Wrangham and Peterson 1997; Watts et al. 2002).

Throughout their range chimpanzees make and use a wide range of tools, mainly to gain access to food, occasionally to use in aggressive contexts against other chimpanzees or other species, for communication, to inspect the environment and for personal hygiene (Alp 1997; Bermejo and Illera 1999; Biro et al. 2003; Boesch and Boesch 1990; Goodall 1986; McGrew 1992a; Yamakoshi 1998). Veritable chimpanzee cultures and local traditions have been documented, notably in the diversity of “tool-kits” and techniques used to access specific food items, as well as in food selection, procession and in the plants used for self-medication (Boesch and Tomasello 1998; Huffman and Wrangham 1994; McGrew 1992b; Whiten et al. 1999).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Oates et al. 2008a – see also individual subspecies listings): “Although Chimpanzees are the most abundant and widespread of the apes, with many populations in protected areas, the declines that have occurred and are expected to continue to occur, satisfy the criteria for ranking as Endangered. Due to high levels of exploitation, loss of habitat and habitat quality due to expanding human activities, this species is estimated to have experienced a significant population reduction in the past 20 to 30 years (one generation is estimated to be 20 years) and it is suspected that this reduction will continue for the next 30 to 40 years. The maximum population reduction over a three-generation (i.e., 60 year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future continuation of the population reduction is a precautionary approach based on the rapidly increasing human population density in the region, the spread of diseases such as Ebola, and the degree of political instability in some range states.”

Four chimpanzee subspecies with non-overlapping distribution across Equatorial Africa are commonly described (though see Annex I for more information on chimpanzee taxonomy): the west African chimpanzee (*Pan troglodytes verus*), the Nigeria-Cameroon chimpanzee (*P. t. ellioti*), the central chimpanzee (*P. t. troglodytes*), and the eastern chimpanzee (*P. t. schweinfurthii*). All four subspecies of chimpanzee are threatened, to varying degrees in different regions, by illegal hunting, habitat destruction and degradation, and disease.

WESTERN CHIMPANZEE

(*Pan troglodytes verus*)

The current range of the western chimpanzee covers eight countries from south-east Senegal eastwards (Senegal, Mali, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Cote d’Ivoire, Ghana), possibly extending to the Niger River in Nigeria. Chimpanzee distribution in West Africa is extremely patchy, reflecting the large-scale forest reduction and fragmentation undergone intensively until the mid-1980s. In 2007-2008, when researchers embarked on a national survey in Côte d’Ivoire to compare the status of the chimpanzee population with the previous 1989-90 nationwide survey

(Marchesi et al. 1995), they encountered 90% fewer nests (Campbell et al. 2008). They suggested the situation could be similar in other countries within the western chimpanzee range. Surprisingly, recent preliminary data from a nationwide census in Sierra Leone found a chimpanzee population almost twice the size previously estimated (approximately 4,000 individuals versus the 1,500-2,500 estimated in 2001: Butynski 2001, TCS 2010), and recent results from censuses within Haut Niger National Park, Guinea, indicate that the chimpanzee population with the highest density recorded in any West Africa protected area has remained stable over the last 10 years (Fleury-Brugiere and Brugiere 2010).

West African chimpanzees are particularly famous for their extensive repertoire of tool use, including sophisticated nut-cracking techniques using wooden clubs or stones as hammers and roots or rocks as anvils (Boesch and Boesch 1990; Boesch et al. 1994). Since nut-bearing tree species and potential tool materials are available also throughout central and east Africa, the diffusion of this behaviour to the east via social transmission was thought to have been prevented by major geographic barriers such as the N’Zo-Sassandra River. However, it was recently recorded among the Nigeria-Cameroon chimpanzees in the Ebo Forest, Cameroon (Morgan and Abwe 2006), more than 1,700km east of the supposed barrier. This seems to suggest either that nut-cracking might have been invented on more than one occasion in widely separated populations or that the original “culture zone” was larger, and nut-cracking behaviour has died out between the N’Zo-Sassandra and Ebo (Morgan and Abwe 2006).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Humle et al. 2008): “Due to high levels of exploitation, loss of habitat and habitat quality as a result of human activities, this subspecies is estimated to have experienced a significant population reduction in the past 20 to 30 years (one generation is estimated to be 20 years) and it is suspected that this reduction will continue for the next 20 to 30 years. The maximum population reduction over a three-generation (i.e., 60 year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. *P. t. verus* still occurs in eight African countries. Nevertheless, it is very rare or close to extinction in four, including Burkina Faso, Ghana, Guinea-Bissau, and Senegal. It has already disappeared in the wild from Togo and the Gambia. The subspecies is also possibly now extinct in Benin. *P. t. verus*, therefore, survives mainly in Côte d’Ivoire, Guinea, Liberia, Sierra Leone and Mali. Unfortunately, no recent data are available to allow for an estimation of rates of decline. However, it is unlikely that *P. t. verus* meets the threshold of an 80% population reduction over three generations to qualify as Critically Endangered. The suspected future continuation of population reduction is, therefore, a precautionary approach based on the rapidly increasing human population density, human activities across many protected and non-protected areas, and the high degree of political instability in some range states. *P. t. verus*, together with *P. t. ellioti*, still remains one of the most threatened subspecies.”

NIGERIA-CAMEROON CHIMPANZEE

(*P. t. ellioti*)

The Nigeria-Cameroon chimpanzee has the most restricted range (approximately 20,000km2) of all the chimpanzee subspecies. It is found only north of the Sanaga River in Cameroon and in forest fragments in the Niger Delta and southwestern Nigeria, where it ranges in both moist and dry forests and forest galleries that extend into savannah woodlands (Morgan et al. 2011; Oates et al. 2008). Its population is currently estimated between 3,500 and 9,000 individuals (Morgan et al. 2011).

“Surprisingly, recent preliminary data from a nationwide census in Sierra Leone found a chimpanzee population almost twice the size previously estimated.”

TCS, 2010

6,500
P. T. ELLIOTI
IS THE MOST
THREATENED
CHIMPANZEE
SUBSPECIES,
WITH AN
ESTIMATED
TOTAL
POPULATION
LESS THAN
6,500



Over the last 10 years, two long-term research studies (the Gashaka Primate Project in Nigeria and the Ebo Forest Research Project in Cameroon) have greatly contributed to our knowledge on *P. t. ellioti*. Of particular interest is the range and peculiarity of tool use between the two sites. The Gashaka chimpanzees do not appear to fish for termites, although they do use tools for procuring and consuming honey and ants (Fowler and Sommer 2007). At the other end, the Ebo chimpanzees not only fish for termites but also use stone and wooden tools to access nuts from coula (*Coula edulis*) trees (Morgan and Abwe 2006), a behaviour previously only observed in *P. t. verus* populations west of the N'Zo-Sassandra River in Côte d'Ivoire (Boesch et al. 1994).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Oates et al. 2008b): “Due to high levels of exploitation, loss of habitat and habitat quality due to expanding human activities, this subspecies is estimated to have experienced a significant population reduction in the past 20 to 30 years (one generation is estimated to be 20 years) and it is suspected that this reduction will continue for the next 30 to 40 years. The maximum population reduction over a three-generation (i.e., 60 year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future continuation of the population reduction is a precautionary approach based on the rapidly increasing human population density in the region and the high degree of political instability in the range states. *P. t. ellioti* is the most threatened chimpanzee subspecies, with the smallest distribution and smallest population (estimated total population less than 6,500) and has suffered high rates of decline due to habitat loss. There are no specific conservation measures directed at this subspecies. Although it exists in a number of protected areas, poaching for bushmeat occurs in all of these areas with the exception of Nigeria's Gashaka-Gumti National Park, where primates are not heavily hunted.”

CENTRAL CHIMPANZEE

(*P. t. troglodytes*)

The central subspecies has a range of approximately 270,000km² across seven countries, in the region between the Sanaga, Ubangi and Congo rivers. The largest populations occur in Gabon, Cameroon and the Republic of Congo, with smaller populations in CAR, Equatorial Guinea, Angola (Cabinda enclave) and possibly in DRC (coastal extension). Estimates of the total population – 70,000 to 116,500 individuals (Butinsky, 2001) – are considered too approximate to be reliable, due to the lack of good survey data over much of their range (Tutin et al. 2005).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Tutin et al. 2008): “Due to high levels of exploitation, loss of habitat and habitat quality as a result of expanding human activities, and disease (Ebola), this subspecies is estimated to have experienced a significant population reduction in the past 20 to 30 years (one generation is estimated to be 20 years) and it is suspected that this reduction will continue for the next 30 to 40 years. The maximum population reduction over a three-generation (i.e., 60 year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future continuation of the population reduction is a precautionary approach based on the rapidly increasing human population density in the region and the high degree of political instability in the range states. There is evidence that Ebola will continue to spread and it is too early to judge whether or not chimpanzee populations will recover from the extremely high levels of Ebola-induced mortality. Recovery will take a very long time even in ideal conditions of complete protection from hunting.”



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EASTERN CHIMPANZEE

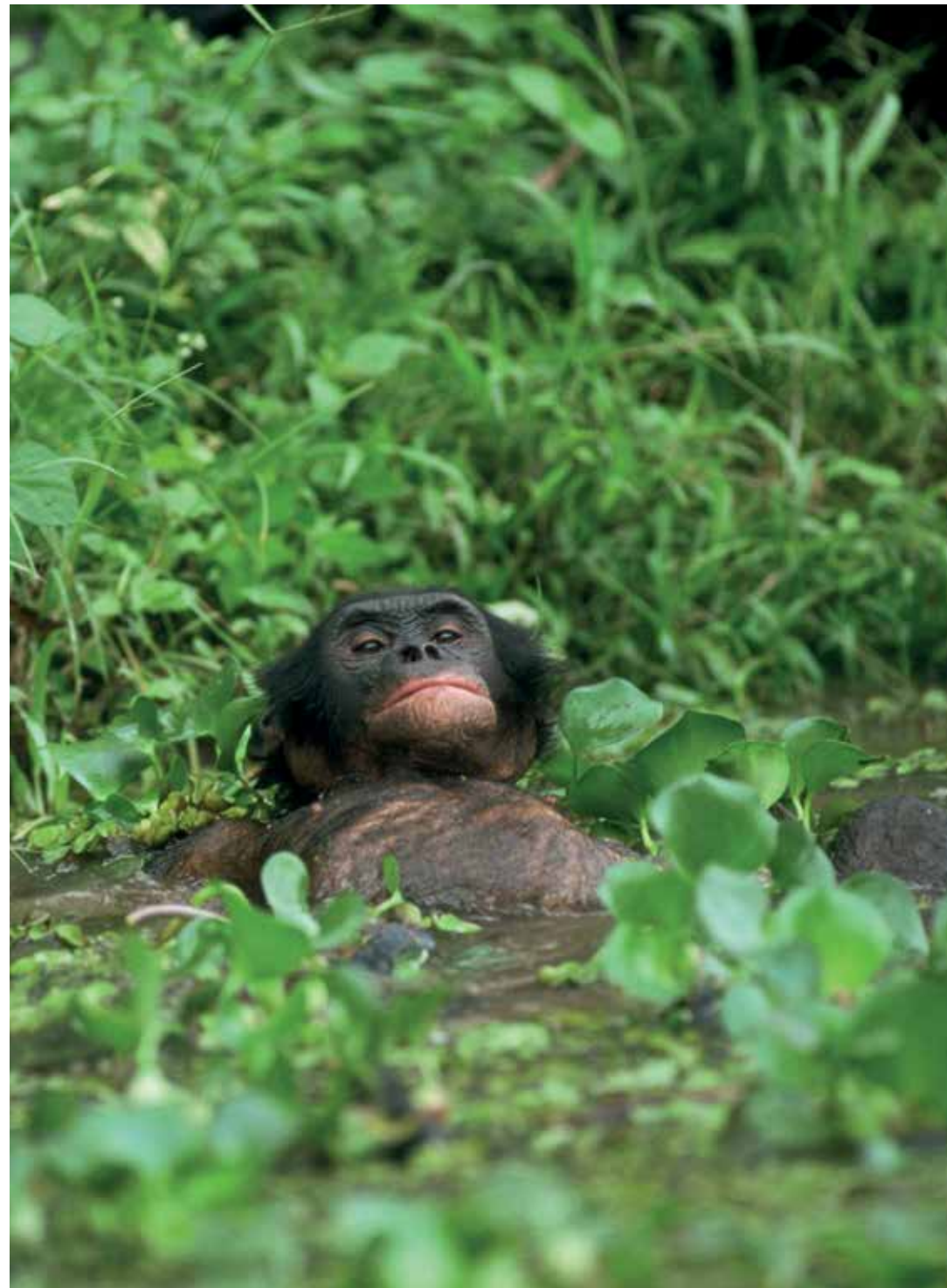
(*P. t. schweinfurthii*)

Chimpanzee
 (*Pan troglodytes*) group
 grooming, Tanzania

The eastern chimpanzee has the largest range of the four subspecies, occurring from southeastern CAR, through northern and eastern DRC, north of the Congo River, and from the southwest Sudan to the west of Uganda, Rwanda and Burundi and the southern end of Lake Tanganyika in Tanzania. A minimum population of 42,000 eastern chimpanzees was recently estimated (Plumptre et al. 2010), recognizing the limitation of total population estimates, given the need to survey vast areas of prime chimpanzee habitat (notably in DRC).

With four long-term research sites (Gombe and Mahale in Tanzania, Kibale and Budongo in Uganda), the social behaviour, ecology, demography, genetics and health of the eastern chimpanzee have been thoroughly studied. At Gombe, as has been the case elsewhere, the long-term research presence also directly contributed to the conservation of chimpanzees, notably drawing support for upgrading the game reserve into a national park, providing increased monitoring and protection to the target community and their area, and increasing local, national and international support for the conservation of this species (Pusey et al. 2007).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Wilson et al. 2008): “Due to high levels of exploitation, loss of habitat and habitat quality as a result of expanding human activities, this subspecies is estimated to have experienced a significant population reduction in the past 20 to 30 years (one generation is estimated to be 20 years) and it is suspected that this reduction will continue for the next 30 to 40 years. The maximum population reduction over a three-generation (i.e., 60 year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future continuation of the population reduction is a precautionary approach based on the rapidly increasing human population density in the region and the degree of political instability in some range states. Some populations of this subspecies appear to be stable, particularly east of the Albertine Rift, and in well-managed protected areas. However, even in these areas, human population growth, construction of new roads, and conversion of forest and woodland to agriculture are all expected to adversely affect chimpanzee populations.”



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Bonobo chimpanzee (*Pan paniscus*)

THE BONOBOBOS HAVE EXPERIENCED A SIGNIFICANT POPULATION REDUCTION IN THE PAST 20 TO 30 YEARS



BONOBO

(*Pan paniscus*)

Bonobos only occur in central DRC, south of the Congo River, in grassland-forest mosaics, lowland forests and swamp forest habitats. Distribution within the range is very patchy, and considering the scarcity of recent surveys in most of its range the estimates for a total population size between 29,500 (Myers Thompson 1997) and 50,000 (Dupain and Van Elsacker 2001) should be considered with the highest caution (Fruth et al. 2008).

The last great ape species to be “scientifically discovered”, bonobos differ in many ways from their chimpanzee cousins. Physically they are leaner and darker. Although generally considered smaller than chimpanzees, bonobos are in fact similar in body weight to the eastern chimpanzees and lighter than the central chimpanzees (Jungers and Susman 1984). Bonobos are more arboreal than chimpanzees (Doran 1993) and able to walk on two legs more easily and for longer periods of time than the common chimpanzee (Susman et al. 1980). Their society is often described as peaceful, matriarchal and more egalitarian than the more competitive, male-dominated and aggressive common chimpanzee society (Kano 1982). Perhaps the most intriguing characteristic is their frequent use of sex (real or simulated) in a wide variety of social contexts, clearly transcending reproduction (Furuichi 1987 and 1989). In bonobo society, sex has an important function to establish and maintain relationships (between all age/sex classes) and is used as a widespread tool in conflict resolution, allowing for the peaceful coexistence of individuals within large groups (de Waal 1995).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Fruth et al. 2008): “Due to high levels of exploitation and loss of habitat and habitat quality due to expanding human activities, this species is estimated to have experienced a significant population reduction in the past 20 to 30 years (one generation is estimated to be 25 years) and it is thought that this reduction will continue for the next 45 to 55 years. The maximum population decline over a three-generation (i.e., 75 year) period from the 1970s to 2045 is thought to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future survival of bonobos will be determined by the rapidly increasing human population density in the region and the high degree of political instability in the range states.”

EASTERN GORILLAS

(*Gorilla beringei*)

Status (IUCN 2010): **ENDANGERED**. Listing justification (Robbins and Williamson 2008 – *see also individual subspecies listings*): “Eastern Gorillas have been and are still severely affected by human activity. They are hunted, more now than before in war-torn eastern DRC; and their habitat is being destroyed and degraded by mining and agriculture. They are estimated to have experienced a significant population reduction in the past 20-30 years (one generation is ~ 20 years) and it is suspected that this reduction will continue for the next 30-40 years. The maximum population reduction over a three-generation (i.e. 60 year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this species for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future continuation of the population reduction is based on a precautionary approach taking into account the rapidly increasing human population density in the region and the high degree of political instability in the range states.”

Separated from western gorillas by about 900km of Congo Basin forest, the two sub-species of eastern gorillas inhabit the sub-montane and montane forests in eastern Central Africa.



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MOUNTAIN GORILLA

(G. b. beringei)

Mountain gorilla Adult
playing with youngster.
Distributed throughout
Uganda, Rwanda
and Congo

Mountain gorillas are restricted to two isolated populations living almost entirely within national parks, separated by 25km of farmland. The Bwindi population numbers some 400 individuals (Robbins et al. 2011), mainly restricted to the 330km² Bwindi National Park in Uganda. The Virunga population ranges across the Virunga volcanoes region, 440km² of protected areas across the borders of Rwanda (Volcanoes National Park), Uganda (Mgahinga National Park) and DRC (Virunga National Park). A recent census (April 2010) of this population counted a total of 480 individuals, which compared to the 380 estimated in 2003 (Gray et al. 2006) represents a 26.3% increase in seven years (Virunga gorilla census, 2010). With four orphaned mountain gorillas in a sanctuary in DRC, the total world population of mountain gorillas in 2011 is 884 individuals.

Due to the extensive habitat conversion surrounding the national parks, mountain gorillas are confined to high altitudes (1,500m up to perhaps 4,000m in the Virunga volcanoes and 1,100-2,400m in Bwindi). Their diet is predominantly herbaceous, although significant differences exist between the Virunga and the Bwindi populations. The Bwindi population also incorporates considerable amounts of fruit in its diet according to seasonal availability (Ganas et al. 2004; McNeilage 2001; Watts 1984). Mountain gorilla groups generally comprise 10-11 individuals, but larger group sizes are not uncommon (up to a maximum of 53 individuals recorded in a group). There is a high prevalence of “multi-male” groups – groups containing several mature males, a phenomenon much more rare among the eastern lowland gorillas and almost absent among the western gorillas (Kalpers et al. 2003; Parnell 2002; Robbins 1995; Yamagiwa 1999).

The intensive conservation efforts which have been put in place to protect mountain gorillas have played a crucial role in ensuring their survival. Nevertheless such an extremely small and isolated population is particularly fragile and any loss of animals can have a serious impact on the future of this subspecies.

Status (IUCN 2010): **CRITICALLY ENDANGERED**. Listing justification (Robbins et al. 2008): “This assessment includes both the Virunga and the Bwindi subpopulations. There are only about 300 mature individuals of this subspecies in both subpopulations combined, closely approximating the threshold for criterion C under Critically Endangered. Given the loss of 1-2% of the subspecies in 2007 due to renewed poaching and illegal killings, the continuing political instability of the DRC region of the Virunga Volcanoes, and the risk of disease transmission by humans or unregulated incursions into the gorillas’ habitat, there is a distinct possibility that the subspecies could experience a 25% reduction in the next generation of ~20 years. However, as conservation efforts are re-established and political stability returns to the region, it is also possible that this subspecies would warrant down-listing to Endangered.”

GRAUER’S GORILLA

(G. b. graueri)



© Johannes Reifsch

Adult male Grauer’s gorilla
(Gorilla beringei graueri)
Kahuzi Biega
National Park, DRC

Grauer’s gorilla, or eastern lowland gorilla, is found exclusively in eastern DRC. Its distribution is discontinuous over an area of approximately 15,000-20,000km² of lowland tropical rainforest, covering transitional forests to Afro-montane habitat (500–2,800m) from Lake Edward south to Lake Tanganyika. In 1994-95, the Grauer’s population was estimated at 16,900 individuals (Hall et al. 1998). Due to the high political instability in this area, surveys have been very limited and it is not possible to estimate the current population. However, the war and instability which has affected this region in the last 15 years is believed to have taken a dramatic toll on the gorillas (Robbins and Williamson 2008).

The Grauer’s gorilla is the largest of the gorilla subspecies, the adult male reaching almost 200kg. The majority of the Grauer’s gorillas inhabit lowland forests, where they exploit a wide variety of foods, including many fruit species, seeds, barks and insects. Although still predominantly herbaceous, their diet is subject to great seasonal and annual variation reflecting the environmental availability of preferred foods (Yamagiwa et al. 2002).

Status (IUCN 2010): **ENDANGERED**. Listing justification (Robbins et al. 2008b): “Due to high levels of exploitation, and loss of habitat and habitat quality as a result of political unrest and expanding human activities, this subspecies is estimated to have experienced a significant population reduction in the past 20-30 years (one generation is estimated to be 20 years), and it is suspected that this reduction will continue for the next 30-40 years. The maximum population reduction over a three-generation (60-year) period from the 1970s to 2030 is suspected to exceed 50%, hence qualifying this taxon for Endangered under criterion A4. The causes of the reduction, although largely understood, have certainly not ceased and are not easily reversible. The suspected future continuation of the population reduction is based on a precautionary approach taking into account the rapidly increasing human population density in the region and the high degree of political instability in the range states.”



Western gorilla

WESTERN GORILLAS

(*Gorilla gorilla*)

The western gorilla is found in seven countries in western Central Africa where it occurs in lowland forest, swamp forest and montane forest from sea level to 1,600m. It is found in Cameroon, CAR, mainland Equatorial Guinea, Gabon, Nigeria, Republic of Congo, Cabinda (Angola), and possibly in DRC. The two subspecies commonly described include the most abundant and widespread of all gorilla subspecies, the western lowland gorilla (*Gorilla gorilla gorilla*), and the rarest and most endangered, the Cross River gorilla (*Gorilla gorilla diehli*).

Status (IUCN 2010): **CRITICALLY ENDANGERED**. Listing justification (Walsh et al. 2008 - see also individual subspecies listings): “This taxon is classified as Critically Endangered under criterion A4, a population reduction of more than 80% over three generations (where a generation is estimated as 22 years,). The listing is based on exceptionally high levels of hunting and disease-induced mortality (over 90% in some large remote areas, including the second largest protected population at Minkébé), which combined are estimated to have caused its abundance to decline by more than 60% alone over the last 20 to 25 years. Most protected areas have serious poaching problems and almost half of the habitat under protected status has been hard hit by Ebola. Commercial hunting and Ebola-induced mortality are both continuing (even accelerating), threats that are not readily mitigated. If the current Ebola epizootic continues at the same rate and trajectory, then the decline in Western Gorilla abundance in all protected areas is projected to be on the order of 45% just for the 20-year period spanning 1992 to 2011 (not accounting for other threat factors such as hunting). Furthermore, gorilla reproductive rates are extremely low (maximum intrinsic rate of increase about 3%). Therefore, even an immediate cessation of Ebola mortality and a drastic reduction in the rate of hunting (neither of which seem likely) would not result in rapid population recovery. Rather, under the most optimistic scenarios, population recovery would require on the order of 75 years. Much sooner, perhaps 20 to 30 years into the future, habitat loss and degradation from agriculture, timber extraction, mining, and possibly climate change will become a major threat. Thus, a population reduction of more than 80% over three generations (i.e., 66 years, 1980 to 2046) is likely.”

WESTERN LOWLAND GORILLA

(*G. g. gorilla*)

The most numerous and widespread gorilla, the western lowland gorilla is distributed throughout approximately 700,000km² of lowland and swamp forest up to 1,600m of altitude. Sharing the same range as the central chimpanzee, these gorillas are found in Cameroon, CAR, Gabon, Equatorial Guinea and the Republic of Congo, with outlier populations in Angola (Cabinda) and possibly in western DRC. Due to the lack of recent and accurate surveys throughout most of their range, population estimates are generally not considered reliable (Tutin et al. 2005). It is however known that western lowland gorillas can occur at surprisingly high densities in specific habitats, such as marantaceae forests and swamp forests (Bermejo 1997; Fay et al. 1989; Stokes et al. 2008).

Western lowland gorillas exploit a high variety of food types, showing a marked seasonality in their food choice which reflects the environmental availability of preferred foods (Rogers et al. 2004). Throughout the year, the pith, leaves and shoots of herbaceous vegetation form the staple of their diet (Rogers et al. 2004). Whenever available, they exhibit high preference for ripe, fleshy fruits, in search of which they can travel considerable distances (Goldsmith 1999; Tutin 1996). It is common to observe lowland gorillas feeding high in a tree in order to access fruits or leaves directly. Despite their heavy weight, adult males can climb as high as 25-30m, although females and youngsters are more often observed in trees and on higher branches (Remis 1994).



Western lowland gorilla

75 YRS
UNDER THE
MOST
OPTIMISTIC
SCENARIOS,
POPULATION
RECOVERY
WOULD REQUIRE
ON THE ORDER
OF 75 YEARS

Status (IUCN 2010): **CRITICALLY ENDANGERED**. Listing justification (Walsh et al. 2008b): “This taxon is classified as Critically Endangered under criterion A4, a population reduction of more than 80% over three generations (where a generation is estimated as 22 years). The listing is based on exceptionally high levels of hunting and disease-induced mortality (over 90% in some large remote areas, including the second largest protected population at Minkébé), which combined are estimated to have caused its abundance to decline by more than 60% alone over the last 20 to 25 years. Most protected areas have serious poaching problems and almost half of the habitat under protected status has been hard hit by Ebola. Commercial hunting and Ebola-induced mortality are both continuing (even accelerating), threats that are not readily mitigated. If the current Ebola epizootic continues at the same rate and trajectory, then the decline in Western Gorilla abundance in all protected areas is projected to be on the order of 45% for the 20-year period spanning 1992 to 2011 (not accounting for other threat factors such as hunting). Furthermore, gorilla reproductive rates are extremely low (maximum intrinsic rate of increase about 3%). Therefore, even an immediate cessation of Ebola mortality and a drastic reduction in the rate of hunting (neither of which seem likely) would not result in rapid population recovery. Rather, under the most optimistic scenarios, population recovery would require on the order of 75 years. Much sooner, perhaps 20 to 30 years into the future, habitat loss and degradation from agriculture, timber extraction, mining, and possibly climate change will become a major threat. Thus, a population reduction of more than 80% over three generations (i.e., 66 years, 1980 to 2046) is likely.”

CROSS RIVER GORILLA

(*G. g. diehli*)

Cross River gorillas inhabit the hilly rainforest region situated in the mountainous headwaters of the Cross River, an area straddling the border between Cross River state, Nigeria and the South-West region of Cameroon. It is estimated that fewer than 300 Cross River gorillas may remain, spread across about 8,000km² of more or less continuous forest (Oates et al. 2007). The population is fragmented in eight areas: isolation of these sites, together with the extremely small size of the overall population, is the main concern for the future of this subspecies for which loss of genetic diversity is a serious risk. New genetic evidence suggests that, despite the high levels of human activities in the forest and the ongoing fragmentation of the gorillas’ habitat, there has been recent migration between the subpopulations across most of the Cross River gorilla range (from Afi to Kagwene), which may thus be considered as one population (Bergl 2006; Bergl and Vigilant 2007).

Cross River gorillas have been particularly difficult to study due to the rugged nature of the terrain they inhabit and to their extreme wariness towards humans, a consequence of the high hunting pressure they have been subject to over the past 100-200 years (Nicholas et al. 2009). Much progress on the knowledge on this subspecies has been achieved over the last 10 years, with studies carried out at Afi Mountain in Nigeria (led by K. McFarland) and at Kagwene Mountain in Cameroon (led by J. Sunderland-Groves). Focusing on indirect signs (such as feeding remains, nest sites and faecal samples), researchers have documented marked seasonality in dietary habits and flexible grouping patterns, with group size ranging from 2 to 20 which may temporary split into smaller subgroups or unite in larger “supergroups” (McFarland 2007). These unique behaviours may result from a combination of factors, including restriction of their former habitat, feeding competition related to fruit consumption, high hunting pressure, and limited opportunities for male migration between the different groups (McFarland 2007).

The Cross River gorilla population is very small (Oates et al. 2007), and as such has an increased risk of inbreeding and subsequent loss of genetic diversity (Keller and Waller



6,500
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IS THE MOST
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LESS THAN
6,500

2002). Habitat loss and degradation threatens the future of the surviving Cross River populations and contributes to increasing isolation between the current subpopulations (Oates et al. 2007). Commercial hunting for the large bushmeat trade in the region poses a serious threat to the Cross River gorillas (Oates et al. 2007): even if hunting of Cross River gorillas is rare, given the small size of the population, any level of hunting has a significant negative effect on population size. No evidence of Ebola or other epidemics has been recorded among Cross River gorillas, although considering the high level of proximity with humans and domesticated animals, there is a serious risk of a variety of pathogens and parasites spreading. The small size of the subpopulations makes them extremely vulnerable to the effects of introduced diseases and groups could be effectively eliminated by virulent infections.

Status (IUCN 2010): **CRITICALLY ENDANGERED**. Listing justification (Oates et al. 2008c): “Listed as Critically Endangered since the total number of mature individuals is probably less than 200. There is the strong probability of continuing decline based on continuing loss, degradation and fragmentation of habitat from farming and road construction, and at least a low level of hunting. Also, there are fewer than 50 mature individuals in each of the subpopulations. The remaining total number of Cross River gorillas is estimated at 250 to 300 individuals spread between 9 to 11 localities including the recently-discovered population isolate in the Bechati area. Genetic data suggest that gorillas in many of the Cross River localities are still in tenuous reproductive contact through the exchange of occasional migrants.”

1.2 MAIN THREATS TO AFRICAN GREAT APES

The three main threats to African great apes are commercial bushmeat hunting and related trade of great ape meat; habitat loss and degradation; and the spread of infectious diseases (Fruth et al. 2008; Kormos & Boesch 2002; Oates et al. 2007; Plumptre et al. 2010; Robbins et al. 2008; Tutin et al. 2005). Together, these threats have been the main catalysts driving the population decline experienced by all great ape species in Africa during the past 40 years (IUCN 2010). The level and intensity of each threat to the different great ape species and subspecies varies – see section 1.1 for more species-specific information.

Objective assessment of the nature of the threats to each great ape population will enable the development of appropriate, site-specific conservation strategies. However, their effectiveness rests on the application of laws, treaties and best practices, which are not sufficiently enforced. The problem of weak law enforcement (and judiciary ineffectiveness) is one of the most serious underlying causes perpetuating the increase in illegal hunting for bushmeat and unsustainable, illegal exploitation practices such as uncontrolled logging and mining. Addressing this problem will allow the creation of a much needed deterrent mechanism affecting both the poacher (or the illegal forester/miner etc.) and the higher-placed “white collar” dealers and traffickers who perpetrate and profit from the commerce of illegal forest products. Similarly, there is a growing need to allocate national and international funding toward implementing duties and priorities under international treaties and conventions, and to monitor progress and ensure accountability. Private extractive industries must also effectively adhere to the appropriate regulations. More international pressure needs to focus on financial institutions lending to companies which do not comply with environmental regulations, do not respect their management plans or, in the case of certified companies, do not adhere to the guidelines of their chosen certification scheme. In addition, more international companies should strive to support governments that effectively enforce their national laws and commitments under international treaties.

African great apes live in some of the world’s poorest countries, where biodiversity conservation is certainly not a socio-political priority. Throughout much of African



Rwindi river, Virunga National Park, showing recent deforestation, Democratic Republic of Congo,

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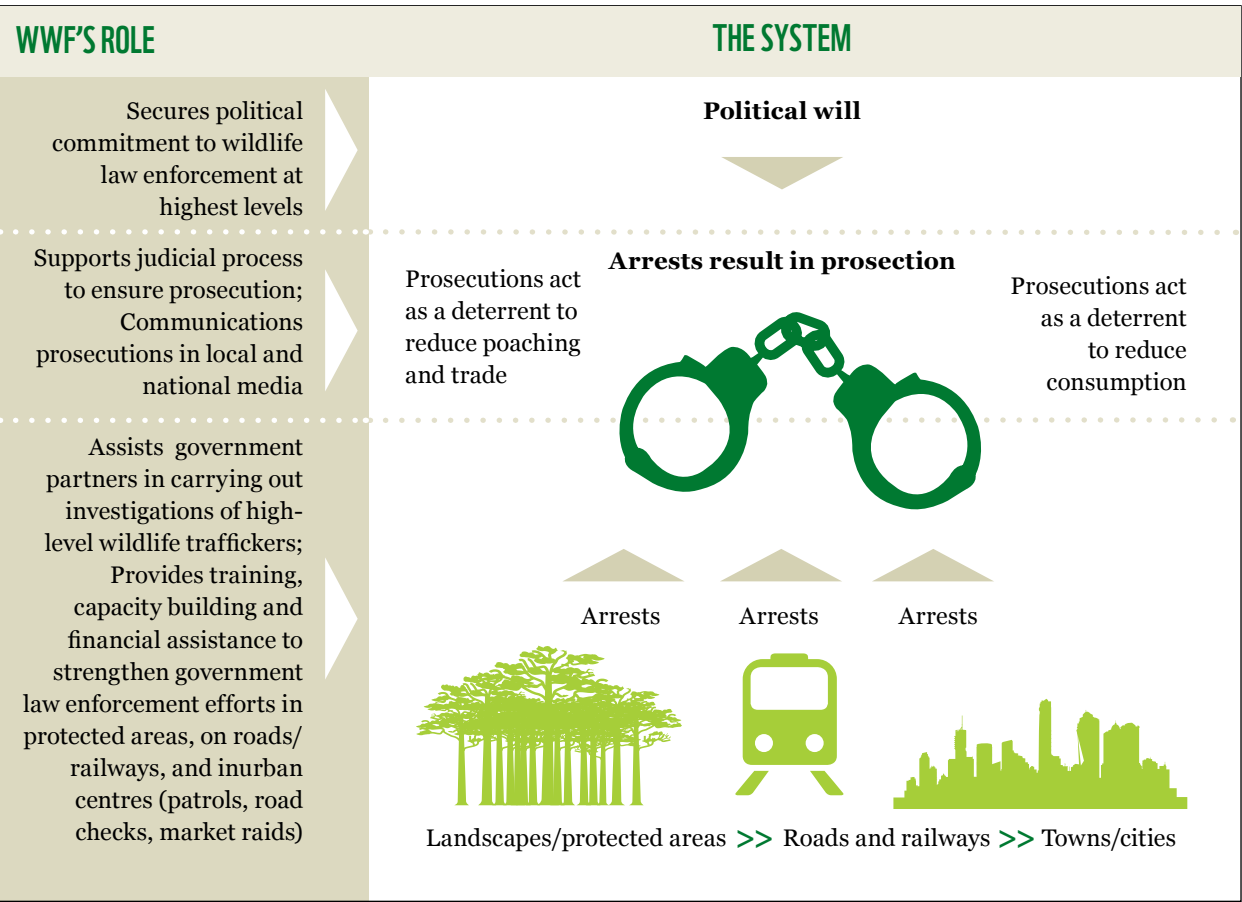


Figure 2: WWF's approach to tackling the threat of commercial bushmeat hunting to African great apes

great ape range, poverty can be considered a driving factor for many threats to great apes, from bushmeat hunting and its subsequent commerce, to habitat destruction and widespread corruption at various levels of society. It is important for conservation projects to play a role in local efforts to alleviate poverty, both to address the underlying driver of many of the threats to great ape populations, and to ensure increased local support for conservation. However, these efforts alone will not eradicate poverty. Indeed, the widespread occurrence of poor health systems, low levels of education and lack of economic opportunities witnessed across rural forested areas in Central Africa can only be fully addressed by the devoted commitment of national governments; international development efforts should support this, but do not provide the whole solutions.

Commercial bushmeat hunting

African great apes are protected throughout their range by national legislation which prohibits the killing and trade of all great ape species; however, the resources and will to enforce the law are lacking in most countries. In many previously remote areas, traditional taboos preventing local populations from killing apes or eating their flesh have been erased by widespread immigration as people are attracted into new regions by employment opportunities from logging or mining companies, or have been forced to flee areas of civil unrest.

Although great ape body parts may be used in traditional medicine or eaten for their perceived healing or magical properties, the majority of great ape killings throughout

Central Africa are a by-product of a widespread, uncontrolled commercial bushmeat trade (Fa et al. 2002; Tutin et al. 2005; Wilkie 2001). Today the traditional consumption of great apes in rural areas is being rapidly replaced by commercial poaching to supply wealthy and often high status consumers in urban centres. This large-scale activity has all too often been facilitated by commercial resource extraction enterprises (such as logging, but also mining, oil and gas exploitation) which pose two major problems:

New networks of roads and regular transport (trucks etc.) facilitate the trafficking of great ape products out of the forest towards large city markets.

As large numbers of migrants seek employment in previously sparsely populated areas (often leading to the creation of new towns), a growing pool of salaried employees have the means to purchase firearms, ammunition, snares and bushmeat.

As these enterprises move their operations to different areas, their former employees often turn to poaching; in most areas there are few or no land tenure regulations that might exclude newcomers from access to hunting grounds.

Considering the dramatic declining trend of most great ape populations, even low, opportunistic hunting of great apes poses a threat to their survival. Given their extremely low reproductive rate and extended period of infant dependence, population recovery times for great apes are very long, making them vulnerable to even low levels of mortality.

Assessing the economic drivers of hunting, and distinguishing between subsistence and commercial hunting, is important for developing appropriate and effective measures to counteract these threats (Kuel et al. 2009). For instance, while the regular control of forests by anti-poaching units and programmes to improve community livelihoods might provide a deterrent for subsistence hunting, control points along transport routes (roads, rivers, railroads, airports), inspections in city markets, and investigating dealers and traders might be more effective at reducing commercial hunting.

In all cases, creating a deterrent is fundamental to reducing poaching in the long term. If poachers apprehended in the forest, or traders caught transporting illegal bushmeat to a city market, are not prosecuted (or are able to bribe their way out of an arrest), none of the above methods will be effective.

The threat of bushmeat hunting is addressed throughout this SAP through a number of strategies: Objective 1 (Protection and law enforcement), Objective 2 (Protected area management), Objective 3 (Policy), Objective 4 (Community support and awareness) and Objective 5 (Monitoring and research.) The work under these objectives aims to tackle the threat of bushmeat hunting at a variety of entry points and levels – thus providing the comprehensive approach which is necessary to tackle such a systemic problem (see Box 1 for an illustration of some key aspects of this approach).

Habitat loss and degradation

Mechanized logging and agricultural expansion are responsible for most of the severe loss of forest cover which has affected much of West and East Africa and still threatens residual forest blocks in these regions. The potential of this happening to the Central African forests is a real concern, given the rapidly growing human population and the fact that more than 40% of these forests have already been allocated to logging concessions (Minemeyer 2002). It has been estimated that over 50% of the range of chimpanzees and gorillas in Central Africa occurs in allocated logging concessions, while only 17% of their populations live in protected areas (Morgan & Sanz 2007).



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A logging worker cutting an African Teak. Samatex is a company that participates in WWF's Global Forest Trade Network (GFTN) programme which promotes credible certification of commercial forestry in natural forests. Western Ghana

LOGGING GENERALLY HAS A NEGATIVE IMPACT ON APE DENSITY BY DEGRADING, REDUCING AND FRAGMENTING HABITAT



Logging generally has a negative impact on ape density by degrading, reducing and fragmenting habitat. Additionally, all too often logging encourages illegal wildlife commerce, by creating access to the forests and facilitating transport of large quantities of meat to distant urban markets (see section above). Finally, the improved access to forested areas is often followed by agricultural expansion and additional habitat loss.

Several sets of technical recommendations have been developed to minimize the impact of logging activities on wildlife and on the forest ecosystem in general. These include technical recommendations to promote sustainable forest management (IUCN/ITTO 2009), certification schemes (such as those promoted by the Forest Stewardship Council (FSC)) and guidelines specifically tailored to reduce the impact of logging on great ape populations, covering aspects such as financing anti-poaching patrols and supporting ape surveys within concession areas (Morgan and Sanz 2007).

For the long-term survival of great apes, commercial logging companies must implement management strategies and regulations which reduce forest degradation and the often associated commercial hunting. It is thus crucial to encourage companies to adopt appropriate regulations, and to support independent, reliable evaluations to assess their implementation. It is also important to assess the impact of these regulations on great ape populations in concession areas (current open questions include: are all the regulations effectively being implemented in certified concessions? Are great ape populations more protected in certified concessions?).

While large-scale intensive agriculture is not considered to be compatible with biodiversity preservation, farming and great apes are not inherently incompatible (Duvall 2003). Indeed, some agricultural practices can help great apes in the surrounding area. These include promoting increased plant diversity within farmed fields, maintaining a degree of tree cover within plantations, and protecting corridors of forested habitat to enable animals to travel safely within an agricultural mosaic. More research is needed to better understand the effect of different agricultural practices on great ape populations.

The problem of unsustainable forestry or agriculture is exacerbated by widespread illegal practices and legal code violations, both in terms of the areas which are exploited (as in the case of illegal land-clearings in national parks) and the felling techniques practised. Many logging operations lack basic safeguards to minimize their impact on the forest ecosystem, such as management plans and controls on wildlife hunting.

In addition to farming and logging, widespread uncontrolled (and often illegal) mining and oil extraction is seriously degrading many forest ecosystems. This is particularly the case in eastern DRC, where illegal mining activities (to extract coltan, tin, gold and diamonds) have had a significant impact in fuelling the civil crisis in the region.

The threat of habitat degradation and loss is addressed in several objectives of this SAP, primarily Objective 2 (Protected area management), Objective 6 (Habitat preservation, focused on securing new habitats for protection or sustainable management) and Objective 3 (Policy and industry engagement),

Disease spread

The spread of infectious diseases among wild great ape populations is a growing cause of concern. In particular, the spread of the Ebola virus during the last 10-15 years has been estimated as the leading factor causing the massive decline in chimpanzee and gorilla populations in Gabon and the Republic of Congo, where great ape populations decreased by up to 90% in some areas (Bermejo et al. 2006; Huijbregts et al. 2003; Leroy et al. 2004; Walsh et al. 2003).

Despite the difficulty of obtaining precise pre-post Ebola numbers and differentiating the impact of the epidemics from that of other threats, Walsh et al. (2003) estimated that the Ebola virus was responsible for a decline of about one-third of the world population of gorillas living in national parks and other protected areas. While large populations may suffer great losses from epidemics quickly spreading from one individual to the other, small, isolated populations are particularly fragile and susceptible to disease risks, as they have limited means to recover once an epidemic has struck.

Addressing and preventing the spread of infectious diseases like Ebola is not only a conservation issue. Outbreaks of Ebola haemorrhagic fever are among the most virulent epidemics known to humankind, causing the death of 50-90% of all infected cases (Khan et al. 1999). Most of the Ebola epidemics in human populations have been traced back to the handling and butchering of infected chimpanzees or gorillas (Huijbregts et al. 2003), proving the significant public health risks associated with the illegal trade and consumption of great apes.

Because African great apes are so similar to humans, they are susceptible to many of the same diseases that afflict humans. As more people encroach upon gorilla and chimpanzee habitat, great apes are increasingly exposed to a variety of human ailments. This is a problem of great concern, especially for tourism and research programmes, where humans and habituated great apes are in close contact on a daily basis. Human diseases, transmitted through bacteria, parasites and viruses, can have a severe impact on wild great apes; in particular, respiratory diseases are the most frequent cause of morbidity and mortality among wild great apes habituated to human presence for research and tourism (Homsy 1999; Kondgen et al. 2008; Woodford et al. 2002).

All sites with great ape tourism have developed guidelines and codes of conduct to minimize the risk of disease transmission, which may include regulations on issues such as vaccination, regular screening of all staff members, visitor vaccinations and use of surgical masks during the visit. However, there is substantial variation between the codes of conduct used in different areas, and growing concern regarding adherence to regulations (Sandbrook and Semple 2006).

This problem is addressed in this SAP in Objective 2 (Protected area management). In addition, Objective 5 (Monitoring and research) includes important work to assess dynamics of human-great ape disease spread, in order to ensure WWF and our partners are more effectively able to plan for and respond to this threat.

Climate change

Due to a lack of detailed regional and sub-regional climate models (Boko et al. 2007), predictions regarding African great apes are generalized expectations and, in most cases, are not a product of climate studies focused on the individual species or subspecies. Nevertheless, climate change has the potential to exacerbate current threats, particularly on small and fragmented populations.

Throughout Central Africa, climate change is expected to have an impact on food security, water availability, ecosystem range and species distribution (Boko et al. 2007). Because most of the human population in this region relies on rain-fed agriculture (Desanker 2002), predicted changes in rainfall patterns suggest food and water security issues may become a major problem, leading to potential mass movement of people and additional reliance on other natural resource sources (such as increased demand for bushmeat following crop failure and increased farming pressure near forested areas – both of which could severely impact African great apes).

Overall, changes in temperature and rainfall pattern are expected to have more severe impact in fragmented forest strips (Foster 2001). Similarly, the ability of a species to

withstand potential effects of climate change (as with the ability to recover from population declines generally) is greatly compromised in fragmented and reduced populations (IPCC 2002, Chapman et al. 2006, Schneider et al. 2007). Typical examples of great apes surviving in small populations and residing in highly fragmented habitat are the Cross River and the mountain gorillas, though many populations of eastern, western and Nigerian-Cameroon chimpanzees are in a similar condition (see chapter 1.1).

Climate change will likely play a role in the spread and persistence of diseases (Patz et al. 2000, IPCC 2002, Altizer et al. 2006), through direct effects such as variations in temperature, rainfall and resource availability and indirect effects such as development of water control projects and deforestation. Additionally, increased contact with humans will influence disease spread to and by non-human primates.

Through the implementation of the 2011-2017 SAP, most efforts will work towards reducing current pressing threats to great apes, such as large-scale commercial hunting and habitat degradation. This will in turn increase the resilience of great apes populations to additional potential effects of climate change. However, for the AfGAP priority great ape populations which are considered to be particularly vulnerable to the impacts of climate change (small populations surviving in fragmented habitats, where climate change is likely to have a significant impact), we will conduct vulnerability assessments and develop appropriate climate change adaptation strategies. This work will be done in collaboration with the WWF Network Climate Adaptation Team (NCAT). Some progress has already been made for mountain gorillas, under the management of the International Gorilla Conservation Programme (IGCP) (for example, see Basabose and Gray 2011).

1.3 INSTITUTIONAL AND GOVERNANCE CHALLENGES

Illegal hunting, habitat loss and degradation, and the spread of infectious diseases are the most imminent, direct threats to the survival of great apes. Tackling many of these issues is rendered complex, if not impossible, by the weak enforcement of existing national legislation and international treaties in many range states. The killing of great apes is unequivocally illegal throughout their range; however, the law is only rarely applied when a poacher, a dealer or a trafficker is apprehended. Consequently, the general belief is that one can kill, sell, possess or consume great apes with total impunity. Proper law enforcement is hampered by inadequate financial resources and a lack of technical capacity, but mostly by weak political will among the judicial and enforcement sectors in most countries. The widespread illegal killing of protected species will not be addressed only by providing more funding to train and equip anti-poaching teams and judiciary units. Similarly, guidelines and recommendations on how to limit the impact of logging on great apes will not be effective when many companies are allowed to operate without management plans and appropriate control on felling rates and procedures, and when logging trucks are regularly transporting illegal bushmeat out of their concessions.

To improve the protection of great apes, elephants and other declining species, this SAP will strive to achieve a stronger commitment from the highest political level to ensure the law is enforced and offenders are brought to justice. This must include stopping the largely tolerated impunity which protects the high-placed “white-collar” dealers, traders and exploiters who are important players in driving great apes towards extinction. While corruption and the all-too-often-mentioned “lack of political will” certainly hamper the process, this must not become a justification for lack of accountability and limited results. WWF and its partners will increase efforts to hold partner governments accountable in enforcing national laws and in

adhering to international treaties and conventions. This will include committing to implement measures to prevent and mitigate corruption, which, when appropriate, may include “naming and shaming” high-placed players (individuals, institutions and/or organizations) involved in corruption and illegal practices. The same must hold true for all WWF staff members, who must be relied upon to set an unequivocal example and ensure full transparency in all activities and operations.

Many great ape populations inhabit areas afflicted by war or widespread civil unrest, where local and regional authorities may have little influence and where firearms are ubiquitous. This often results in military-sanctioned hunting and in the widespread availability of modern weaponry, posing increasingly complex challenges to conservation efforts. Establishing new projects in these areas may be virtually impossible or worse, irrelevant under such circumstances. However, previous project staff known for their integrity may be able to provide minimal but fundamental protection and monitoring of great ape populations in affected areas. Finally, especially in areas affected by armed conflicts and humanitarian crises, WWF will work to increase collaboration between NGOs working in conservation, development and humanitarian/relief sectors, which will be crucial to enable programmes to remain operational and achieve some strategic conservation objectives (Lanjouw 2002).

WWF has played and continues to play an important role in influencing and shaping national, regional and global environment-related policies. Limited success, however, has been achieved in monitoring accountability towards the enforcement of the ratified laws, treaties and/or conventions. Although insufficient capacity and funding certainly limit governments’ ability to enforce the law and implement sound environmental policies, all too often this is also the result of insufficient political will, corruption within implementing ministries and their partners, and the overall lack of transparency in programme budgets and operations.

While they are certainly not the sole victims of this situation, African great apes are directly affected by the perpetuation of illegal practices. Supporting governments to enforce wildlife legislation and adhere to pertinent international conventions is therefore a major priority of this SAP, especially throughout Central Africa, one of the main sources of illegal wildlife products in Africa. An innovative model which greatly complements the activities carried out by WWF and partners in the field is provided by the work of LAGA (the Last Great Ape Organization) with the government of Cameroon, which has been replicated in the region (CAR, Republic of Congo and Gabon). With the objective of getting wildlife legislation enforced, these projects work simultaneously with the wildlife, interior and justice departments to ensure judicial follow-up of wildlife-related cases. Media and communications also play a key role, both in showing that the law is being enforced and in deterring potential poachers, traders, dealers and consumers.

1.4 OPPORTUNITIES FOR AFRICAN GREAT APES CONSERVATION

Despite the pressing and severe threats to the African great apes and their environment, there are several promising opportunities which can greatly facilitate great ape conservation throughout their range. The present action plan intends to leverage existing opportunities in order to generate critical political support for important initiatives, garner the funds necessary to implement the plan and, ultimately, adopt progressive field-level conservation interventions which will ensure that African great ape populations are permanently stabilized.

Habitat and populations

With over 180 million hectares, the forests of the Congo Basin constitute the world’s second largest area of contiguous moist tropical forest, harbouring most populations of



central and eastern chimpanzees and western and eastern lowland gorillas, as well as the total bonobo population. The current network of protected areas across western equatorial Africa covers approximately 17% of African great apes’ range (Morgan & Sanz 2007). The protection of many of these areas is made more effective through the implementation of ongoing conservation projects. Many neighbouring countries with adjacent protected areas have developed (or are developing) transboundary agreements harmonizing wildlife laws and aiming to create an environment to implement concerted conservation strategies.

Although much of the eastern and western range of African great apes has been under high human pressure, the surviving populations in most existing protected areas could still prove viable over the long term, especially with strengthened in situ protection and with the creation and proper management of much-needed corridors enabling population movements and gene flow.

This opportunity is capitalized on through Objective 2 (Protected area management) and Objective 6 (Habitat preservation), as well as Objective 3 (Policy).

Legal instruments

Formally, great apes enjoy a wide range of protection from national legislation, regional agreements and international conventions. This range of legal instruments represents a valuable opportunity for great ape conservation, when it is coupled with the appropriate political will. In all range states great apes are protected by national law and are listed under “full protection” Class A of the African Convention on the Conservation of Natural Resources (ACC), a binding agreement which covers the vast majority of African great ape range states (Table 2). Most countries have subscribed to many international conventions that address different aspects of biodiversity conservation, some of which are of particular relevance to great ape conservation (Table 2), including the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the World Heritage Convention (WHC) and the Convention on the Conservation of Migratory Species (CMS). The governments of Central Africa have committed to cooperate to safeguard their forest resources, by signing the Yaoundé Declaration in 1999, which led to the creation of the Central Africa Forest Commission (COMIFAC), the adoption of a “Plan de Convergence” (a priority action plan) and the launch of the Congo Basin Forest Partnership (CBFP). In 2008, under the auspices of the CMS, several range countries signed the “Gorilla Agreement”, a legally binding agreement which includes action plans for each of the four gorilla species. Additionally, the majority of range countries have also signed regional agreements and action plans specifically targeting the conservation of great apes, while a few Central African countries have adopted National Great Ape Survival Plans (NGASPs) under the UNEP-Great Ape Survival Partnership (GRASP) (Table 2).

Table 2. Great ape range states party to international conventions, agreements and action plans.

Range state	CBD Includes specific targets on bushmeat, PAs and governance	CITES All great apes on Appendix 1	CMS Includes specific agreement on gorillas, obliging enforcement monitoring and reporting	WHC Includes key gorilla landscapes; Virunga, TNS, Kahuzi Biega, etc.	ACC Requires adherence to safeguarding Class A species such as great apes	RAP Targeted action plans supporting great ape conservation objectives)	NGASP National level great ape action plans
Angola	yes	no	yes	yes	no	✓	
Burundi	yes	yes	no	yes	signed	✓	
Cameroon	yes	yes	yes	yes	yes	✓	✓
Central African Republic	yes	yes	signed	yes	yes	✓	
Congo (Republic of)	yes	yes	yes*	yes	yes	✓	✓
Côte d'Ivoire	yes	yes	yes	yes	yes	✓	
Democratic Republic of Congo	yes	yes	yes*	yes	yes	✓	✓
Equatorial Guinea	yes	yes	no	no	yes	✓	
Gabon	yes	yes	yes*	yes	yes	✓	
Ghana	yes	yes	yes	yes	yes	✓	
Guinea	yes	yes	yes	yes	signed	✓	✓
Guinea-Bissau	yes	yes	yes	yes	yes	✓	
Liberia	yes	yes	yes	yes	yes	✓	
Mali	yes	yes	yes	yes	yes	✓	
Nigeria	yes	yes	yes*	yes	yes	✓	
Rwanda	yes	yes	yes*	yes	yes	✓	✓
Senegal	yes	yes	yes	yes	yes	✓	
Sierra Leone	yes	yes	no	yes	signed	✓	
Sudan	yes	yes	no	yes	yes	✓	
Tanzania	yes	yes	yes	yes	yes	✓	
Uganda	yes	yes	yes	yes	yes	✓	

yes = the country is part of the convention or action plan; **signed** = the country has signed but is not yet a full party; **no** = the country has not signed. **CBD** (Convention on Biological Diversity); **CITES** (Convention on International Trade in Endangered Species of Wild Fauna and Flora); **CMS** (Convention on the Conservation of Migratory Species; * = countries that signed the “Gorilla Agreement”); **WHC** (World Heritage Convention); **ACC** (African Convention on the Conservation of Nature and Natural Resources). **RAP** (Regional Action Plan): **X** = range country represented in regional action plan for the conservation of great apes. **NGASP** (National Great Ape Survival Plan): **X** = range country with a National Great Ape Survival Plan (GRASP). Adapted from Varty et al. 2005.

This growing body of legislation and agreements is intended to create the enabling conditions necessary for effective conservation actions, to regulate trade, to promote transboundary cooperation in the management of protected areas and overall to enable the long-term conservation of natural resources, including great apes and their environment. In Burundi and Uganda, for instance, authorities have clamped down on the once-flourishing traffic in chimpanzees, and in Rwanda there have been no recorded killings of mountain gorillas since 2002. The government of Cameroon, working with LAGA, brought wildlife offenders to court for the first time in 2002, and has been continuing ever since. Following their example, similar government-NGO collaborations have been established in the Republic of Congo by the John Aspinall Foundation, in CAR by AfGAP/WWF, and in Gabon by Conservation Justice, with the objective of ensuring the proper law enforcement and judicial follow-up of wildlife-related crimes.

While some countries have taken effective actions against specific threats, improved efforts must go into promoting the enforcement of existing legislation and in creating a system which demands accountability and compliance with ratified agreements by many range states.

The opportunities offered by legal instruments are capitalized on through Objective 3 (Policy).

International support

Throughout the last 40 years, much effort has been made by the international community to support in situ great ape conservation. It has been estimated that the NGO community has raised and spent several tens of millions of US dollars on great ape projects (Varty et al. 2005). Since 1992, the European Commission has committed some US\$50 million to protect and promote the rational use of the forest ecosystem in Central Africa through the ECOFAC programme, while in the last 10 years alone the US government has committed almost US\$100 million in support of great apes and forest conservation programmes throughout Central Africa (Varty et al. 2005). Nevertheless, when compared to the vast private investments in logging, mining and large-scale infrastructure development and the scale of the direct and indirect threats to great apes and their environment, there is still much more support needed.

However, it is not only at the fundraising level that the international community can play an important role for great ape conservation. International political pressure (including from conservation organizations) on range states to comply with international agreements can provide much-needed leverage to ensure effective law enforcement. International pressure on logging companies to become certified (as verified by stringent, transparent and regular audits), as well as consumer-oriented campaigns to raise awareness and promote the market for certified forest products, may well constitute the future hope for the survival of great apes, considering that most populations are found in forestry concessions (Morgan and Sanz 2007). Additionally, large-scale development programmes generally involve international donors, such as the US Agency for International Development (USAID) and the World Bank. Through agencies such as these the international community has the leverage to ensure that development projects pass rigorous, transparent and independently reviewed environmental impact assessments.

AfGAP will continue to catalyse support for great ape conservation efforts by sharing key components of the SAP with international donors and political and private bodies, generating important strategic buy-in and subsequent capital investment for SAP implementation. It is also important to develop synergies with other WWF initiatives including the Global Forest & Trade Network (GFTN) and the Market Transformation Initiative (MTI), in an effort to pool expertise to tackle historical and emerging issues in areas such as FSC accreditation, international purchase and trade, and consumer awareness.



Tourism

There is substantial international demand to view great apes in their natural environment, and range state governments and conservation groups have a growing interest in the development of great ape tourism. Great ape tourism, particularly gorilla tourism, has the potential to generate significant revenues and is an excellent tool to promote the conservation of these species. However, the risks associated with great ape tourism are also significant and should be adequately addressed before beginning any tourism programme (equally, the same holds true for research programmes involving great ape habituation). For more details on how great ape tourism can positively or negatively impact great ape conservation, see Macfie and Williamson (2010).

For great ape tourism programmes to actually become conservation tools, benefits must outweigh the risks. Most notably they must minimize their impact (e.g., disease transmission, social behaviour changes, dietary intake impacts, etc.) on the animals and their habitat, generate sufficient income to support effective conservation activities, and increase local support to conservation by providing significant benefits to the resident communities (Greer and Cipolletta 2005; Macfie and Williamson 2010).

Even when all precautions are respected, it may not always be possible to replicate the models of successful programmes such as those developed in Rwanda and Uganda with mountain gorillas. In fact, a multitude of factors may limit the chances of success of a great ape tourism programme. These include difficulty in habituation, limited visibility in dense lowland forests, high poaching pressure, poor infrastructure, difficult access to remote areas and security issues.

Careful site-specific impact assessment analysis must be executed before deciding whether it is appropriate to develop a great ape tourism programme in a given area. If such a tourism programme is established, it is critical to undertake regular monitoring to ensure appropriate guidelines are being fully implemented, and to evaluate the impact of the tourism programme on the apes and their habitats (Fawcett 2004; Macfie 2007; Muyambi 2005; Sandbrook & Semple 2006). It is particularly important not to raise unrealistic expectations among stakeholders, to ensure revenues are fairly distributed (favouring funding of conservation costs and benefit-sharing programmes with the local communities) and, most importantly, to take all measures to avoid negative impacts on the very animals these programmes seek to protect.

While this opportunity is capitalized on through Objective 4 (Community support and awareness), the mitigation of its potential impacts is addressed through Objective 5 (Monitoring and research).

Great apes as flagship species

WWF (2012) is focusing efforts on species that are of special importance – either for their ecosystem (e.g., species forming a key element of the food chain, species which help the stability or regeneration of habitats, or species that demonstrate broader conservation needs) or for people (e.g., species important for the health and livelihoods of local communities, species exploited commercially, or species that are important cultural icons). WWF has identified 36 such priority species or species clusters, which fall into two groups: flagship species and footprint-impacted species. They include:

- Species which help ensure the long-term survival and health of many threatened habitats and their associated biodiversity: e.g., elephants, reef-building corals;
- Top predators: e.g., Asian big cats, polar bears, sharks, tunas, dolphins, porpoises;

- Species that symbolize key global threats to biodiversity: e.g., marine turtles, dolphins, porpoises, sharks and albatrosses (bycatch); polar bears (climate change); tigers, elephants, rhinos, marine turtles (illegal wildlife trade);
- Some of the world's most threatened large mammals: e.g., mountain gorillas, Cross River gorillas, snow leopards, Amur leopards, Javan rhinos, Sumatran rhinos, vaquitas, North Atlantic right whales;
- National emblems and global icons: e.g., tigers, giant pandas, elephants, gorillas, orang-utans, whales, marine turtles, kangaroos;
- Humankind's closest relatives: the great apes;
- Species that are critical for the health, livelihoods and economic security of local communities: e.g., ginseng, Korean cedar pine, humphead wrasse;
- Species that form the basis of, and are threatened by, significant commercial activity and inadequately regulated or unsustainable global trade: e.g., threatened fish species like cod, tuna, salmon, and sturgeon; threatened hardwood timber species like bigleaf mahogany and ramin.

As highly charismatic species, great apes make ideal flagship species: they provide a focus for raising awareness, stimulating action and generating resources for broader conservation efforts, cascading protection of other species and habitats. As the majority of African great apes (both in terms of populations and species/subspecies diversity) are found within the Congo Basin, any conservation success for great apes – securing a protected area, improving wildlife law application, promoting responsible logging, mining, and other extractive activities, as well as promoting development alternatives with low impact on the natural environment – is a conservation success for many other species. The Congo Basin is exceptionally rich in biodiversity, with over 500 species of mammals, roughly 10% of which are endemic (de Wasseige et al. 2012). The Congo Basin is the focus of WWF's Green Heart of Africa (GHOA) Global Initiative while the WWF African Elephant Programme targets another of the region's flagship species, so there is great potential for synergies to deliver conservation results at a large scale.

By securing coordinated actions among programmes in different countries, as well as by promoting transboundary collaboration between countries bordering through protected or largely pristine areas, AfGAP has a key role to play.

2. ROLE OF AfGAP IN GREAT APES CONSERVATION

2.1 HISTORY

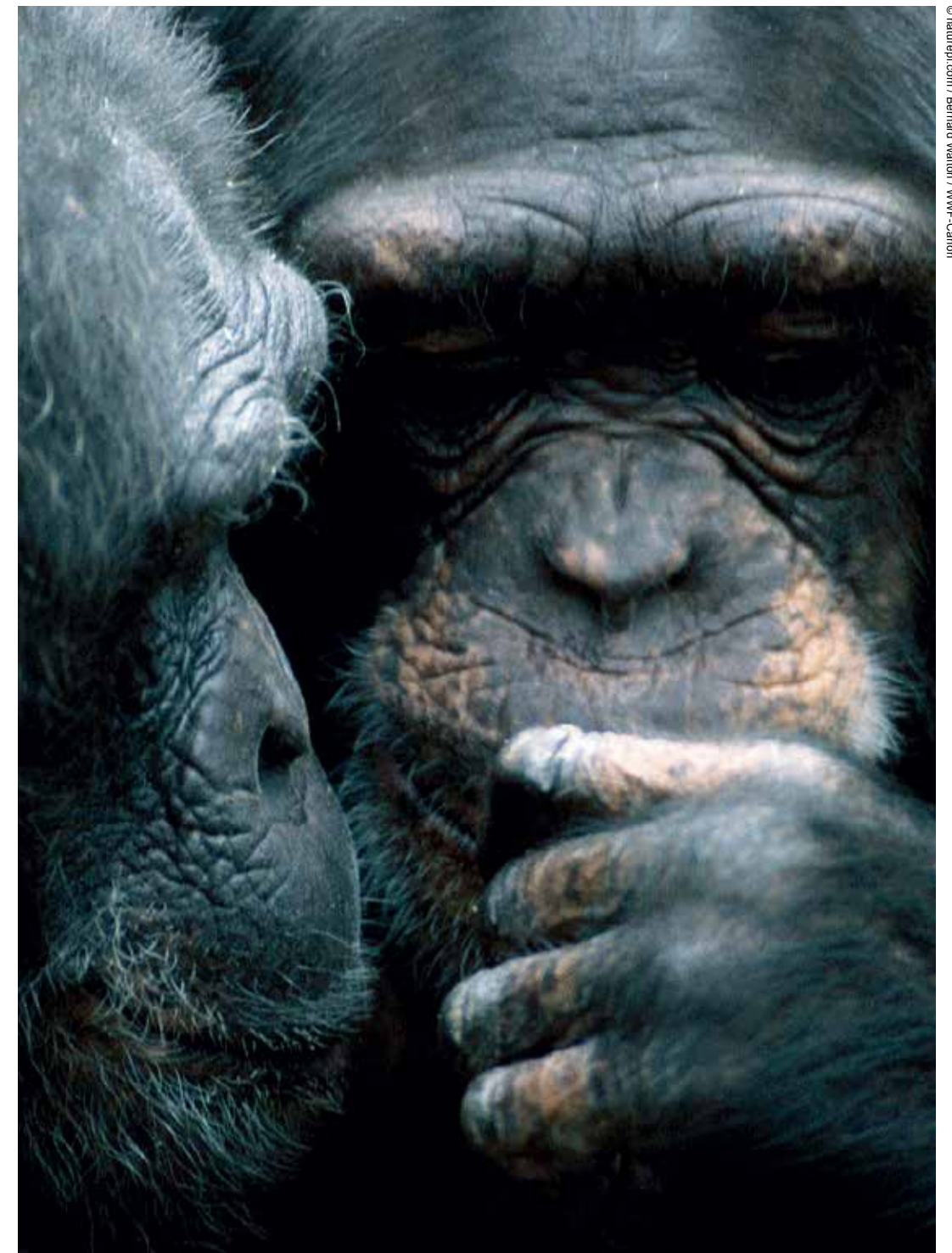
AfGAP was launched in 2002, representing the WWF strategic framework for action on great ape conservation in Africa. Building on 40 years of experience in great apes conservation, AfGAP was set up to develop a specific continent-wide programme for great ape conservation, identifying a strategic mix of conservation actions designed to have the best possible impact for African great apes throughout their range. The first AfGAP SAP, which was operational from 2003-2007 (Stephenson 2002), was developed to follow the programmatic approach of, and lessons learned from, WWF's continent-wide African Rhino Programme, which has been

running since the 1990s, and the African Elephant Programme. The plan was structured around objectives on protection and management, community support, policy, capacity building, trade and awareness (see Annex II for an outline the objectives and targets of the previous AfGAP SAP).

2.2 ACHIEVEMENTS IN IMPLEMENTING THE FIRST AFGAP ACTION PLAN

During the period of implementation of AfGAP's first action plan, considerable effort was put into making the programme operational, working closely with project leaders to develop proposals and securing the funding to implement conservation initiatives affecting all African great apes. Progress towards reaching the programme's objectives was attained through support to programmes and activities, which included:

- Great ape monitoring (central chimpanzees and western lowland gorillas) and the development of ecotourism in Gamba Protected Areas Complex, Gabon. Key actions: Survey techniques tested; monitoring systems developed; guides and guards trained in monitoring methodologies; factors affecting ape distributions and abundance assessed; populations and sites for further development of ape-viewing tourism identified; guided walking safaris established.
- Great ape (central chimpanzees and western lowland gorillas) conservation strategies in southeast Cameroon and TRIDOM Interzone. Key actions: monitoring of great apes and large mammals; human health education initiatives developed and implemented; indigenous peoples participated in mapping of traditional forest resources for sustainable livelihoods and great ape conservation.
- Conservation of central chimpanzees and western lowland gorillas in Campo Ma'an National Park, Cameroon. Key actions: monitoring of great apes and large mammals; potential and feasibility to develop gorilla-based tourism assessed.
- Conservation of Cross River gorillas and Nigeria-Cameroon chimpanzees in Cameroon and Nigeria. Key actions: Transboundary protected area process facilitated (legislative reviews, meetings, agreements, boundary assessments, etc.); contributed to the regional action plan for the conservation of Cross River gorillas; support given to protected area development within the Cross River gorilla range in Cameroon for the gazettment of Takamanda National Park, Kagwene Mountain Gorilla Sanctuary and the Takamanda-Mone-Mbulu Technical Operations Unit; training and equipment of protected area staff; ranger posts and other essential anti-poaching infrastructure established; education and awareness programme implemented and community conservation projects established; ape population monitoring carried out.
- Conservation of western lowland gorillas and central chimpanzees in and around Odzala National Park, Republic of Congo. Key actions: Socio-economic and biological surveys carried out, with focus on the potential for wildlife conservation in logging concessions; awareness raising campaigns on the management of natural resources



Two chimpanzees communicating (*Pan troglodytes*)

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and on Ebola prevention conducted in local villages and logging concessions; anti-poaching operations to protect apes and other wildlife supported.

- Improved conservation for bonobos within the Salonga-Lukenie-Sankuru Landscape. Key actions: Equipment and field supplies for anti-poaching units in Salonga National Park provided; training, equipment and field supplies for ICCN and NGOs conducting surveys of bonobo populations provided; monitoring and assessment of potential of a new protected area in bonobo range carried out, including surveys in Lac Tumba, which led to the first scientific description of a new bonobo population.
- Eastern lowland gorilla and eastern chimpanzee conservation in Kahuzi-Biega National Park and Itombwe Reserve, DRC. Key actions: Equipment and patrol ratios for anti-poaching teams provided; ICCN staff provided with training in modern methods of anti-poaching and gorilla monitoring.

Other WWF conservation efforts directly linked to the conservation of great apes in this period included:

- Conservation of western chimpanzees in Tai National Park, Côte d'Ivoire. Key actions: Support provided for the training and equipment of bio-monitoring and park staff teams; education and awareness campaigns carried out with partner organizations, in surrounding communities (including theatre performances, radio events, community meetings, awareness days, etc.); support provided to the tourism development programme focusing of habituated chimpanzees.
- Development of a controlled tourism programme based on tracking and viewing western lowland gorillas at Bai Hokou, in the Dzanga-Ndoki National Park, CAR. Key actions: gorilla habituation protocols developed and implemented; trackers, guides, national researchers and international students trained; health monitoring programme developed (in collaboration with the Wildlife Conservation Society (WCS) Field Veterinarian Programme).
- Continued partnership of WWF with Fauna and Flora International (FFI) and the African Wildlife Foundation (AWF) in the International Gorilla Conservation Programme (IGCP) to ensure long-term conservation of mountain gorillas. Key actions: information base established to allow decision-makers to understand the dynamic between the human population and the natural habitat/wildlife; regional collaboration for transboundary natural resource management strengthened; threats to gorillas reduced (local support increased) by developing and supporting livelihood strategies complementary with conservation objectives.
- Through a partnership with the Great Ape Film Initiative, 65 sets of 7 videos (totalling 455 videos) were secured for distribution to WWF field projects in priority great ape conservation areas, with education activities targeting government officials, partner agencies and community members. Received in Cote d'Ivoire, Cameroon, Gabon (and for Republic of Congo), DRC, Tanzania, Rwanda, Uganda and Kenya, and used in education and awareness events.
- In 2008, establishment of a Central African Programme Office of TRAFFIC, the international wildlife trade monitoring network (a joint programme of WWF and IUCN). TRAFFIC aims for "Improved implementation, enforcement and adherence to trade controls for great apes in at least two range states in Central Africa" (TRAFFIC, 2008).

Due to the absence of a Programme Coordinator from 2007 until late 2008, the current AfGAP SAP was developed in 2010 and runs from July 2011 through June 2017 (FY 2012 to FY 2017).

2.3 LESSONS LEARNED AND RECOMMENDATIONS

The ability to use adaptive management based on the challenges encountered while executing field programmes or other activities is crucial to ensure the greatest possible effectiveness of conservation interventions. As such, the constraints, lessons learned and recommendations identified during the first phase of AfGAP provide the basis for the programme's development in this second phase. The key lessons learned and the suggested recommendations from that period include:

1. The traditional approach of maintaining distance from government proceedings aimed at enforcing national wildlife laws (e.g., in the national tribunal/court system) and international treaties has limited effectiveness. Despite significant financial and human investment into traditional law enforcement efforts (e.g., funding eco-guard patrols in protected areas), poachers and wildlife traders continue to have widespread impunity from prosecution. Therefore, while continued investment into traditional enforcement effort is critical, this must be complemented with work to improve other aspects of law enforcement, such as law enforcement in urban areas, and improvements to the judicial system. In addition, WWF and its partners should increase efforts to ensure higher accountability among its partner governments in upholding national laws and in adhering to international agreements.
2. Strategic approaches to policy initiatives must be pursued with active support from the highest levels of the WWF administration. While regional field managers are the most critical component for guiding sound conservation policy initiatives, lobbying must be driven from above; country-level staff often carry limited influence with government partners.
3. Monitoring remains a major challenge for many species-focused programmes. There is limited availability of reliable indicators and baseline data to assess the impact of supported conservation activities: this is a serious constraint which has limited the level of accuracy in developing the present SAP objectives and targets. The collection of initial baseline data and subsequent population trend analysis, as well as the monitoring of threats, needs to be more rigorous and systematic; results must be used both to evaluate progress towards conservation goals and to effectively guide conservation efforts (such as patrols, awareness campaigns, etc.).
4. Species conservation needs to be better integrated into broader national and regional field programmes, and policy work. This can be accomplished through better strategic alignment with regional action plans, country conservation strategies and field projects.
5. Many species action plans have tended to tackle only immediate threats to the target species. In future we need to take more account of root causes and drivers of species loss in our programme planning.
6. Targeted interventions clustered in the same geographical area are more effective than work towards the same objectives in geographically, socially and administratively different places.
7. WWF's policy of working closely with partner programmes and organizations possessing specialist expertise in key areas of ape conservation should be continued and strengthened, as this will achieve greater results than would be possible acting in isolation. Many of the objectives of the first AfGAP SAP would not have been addressed without major involvement of partners, some of which were better placed than WWF to work on certain species or subspecies.

**SPECIES
CONSERVATION
NEEDS TO
BE BETTER
INTEGRATED
INTO BROADER
NATIONAL AND
REGIONAL FIELD
PROGRAMMES,
AND POLICY
WORK**

3. THE AfGAP SPECIES ACTION PLAN (2011-2017)

BY 2017, AT LEAST ONE PROTECTED AREA WITHIN EACH PRIORITY LANDSCAPE BENEFITS FROM IMPROVED PROTECTION

3.1 PLANNING PROCESS

The current AfGAP SAP builds on the lessons learned and the results achieved during the programme's first implementing phase (2002-2007). It also reviews and integrates recommendations issued from regional and national African great ape action plans (such as IUCN action plans) as well as transboundary strategic plans, which have been derived from a consensus of regional experts including protected areas managers, range-state government officials, research institutions, and local and international conservation NGOs (including WWF). Priority areas for intervention are selected to define where WWF can make specific contributions, based on the conservation strategy of relevant Global Initiatives and programmes, and their capacity to deliver effective conservation outcomes.

The first step in developing this SAP involved defining the Vision – a general statement of the desired state that the SAP is working towards in the long term, and the Goal – a more precise and measurable statement detailing the specific desired outcome of the SAP.

The next step was the development of conceptual models, which outline the threats to great apes, the contributing factors to these threats and their root causes. To this effect, in early 2009 WWF's Species Programme gathered landscape leaders, project managers and partners working with field projects in Cameroon, CAR, Gabon, DRC, Nigeria and Republic of Congo, together with donor WWF offices and colleagues from WCS, IUCN, the UN Great Ape Survival Partnership (GRASP) and TRAFFIC to discuss critical species conservation issues and determine the most immediate priorities to secure the Congo Basin's unique biodiversity. A model of root cause analysis to the threats facing African great apes was produced (Fig 3), following draft models elaborated during the workshop.

Based on these conceptual models, objectives were developed which address the most important threats and contributing factors, and thus have the greatest chance of improving the conservation status of great ape populations.

Priority areas for intervention were then defined, resulting in a set of AfGAP priority landscapes, which will be the places in which WWF will focus its great ape conservation effort.

Finally, key activities required to achieve each objective were defined, and indicators to measure the progress towards achieving each objective were developed.



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Bageni family in the gorilla sector of Virunga National Park, Bukima, Democratic Republic of Congo

CONCEPTUAL MODEL OUTLINING THREATS TO GREAT APES

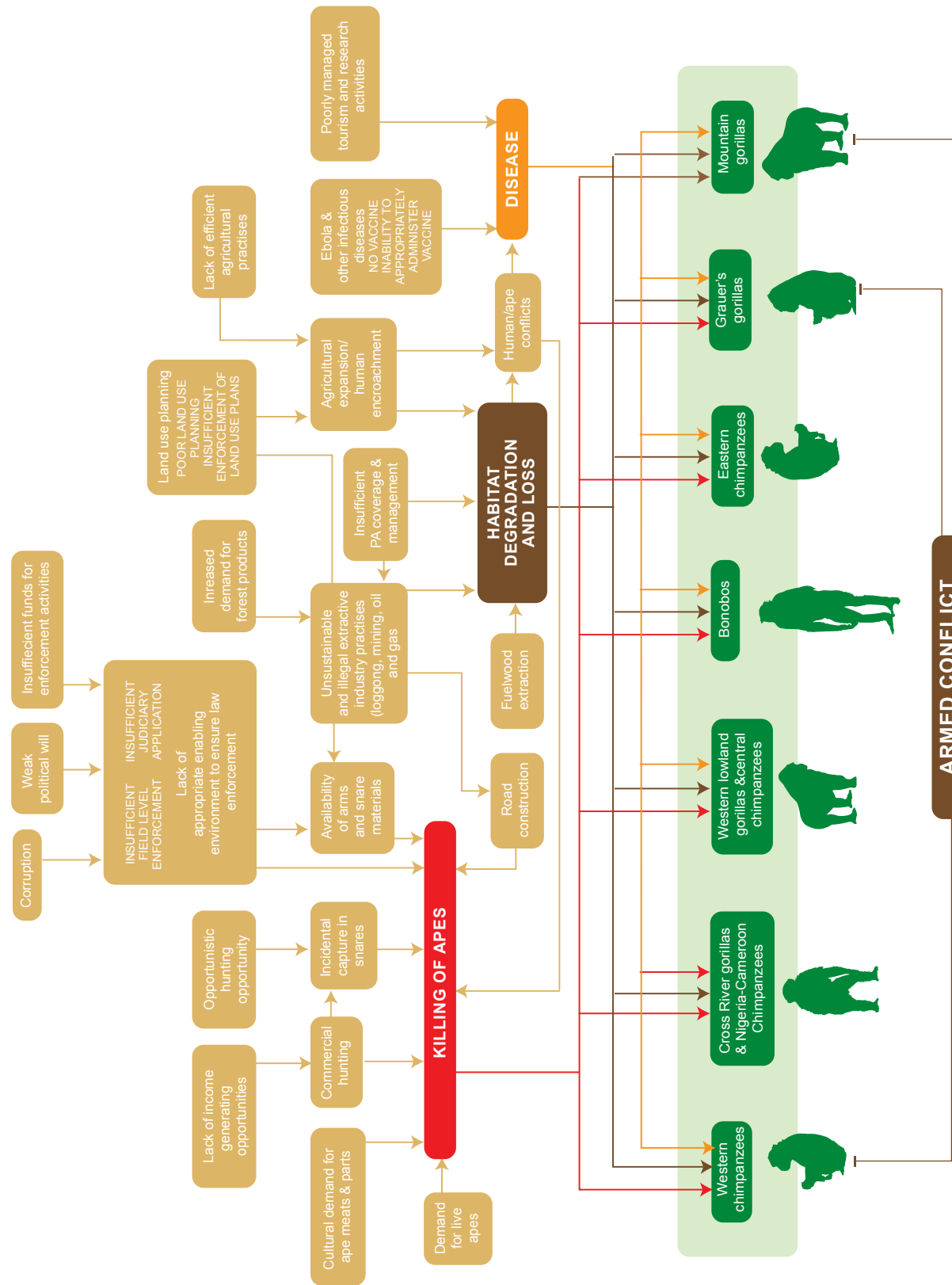


Figure 3: Armed conflict is included as a direct threat due to its unique nature and severity of threat it poses. However in reality it is a factor which leads to the direct threat of poaching and habitat loss.

3.2 VISION, GOALS AND OBJECTIVES

Vision

By 2050 viable populations of all species and subspecies of African great apes are conserved in their natural habitat.

Goal

By 2020, the populations of African great apes living in the AfGAP priority landscapes¹ will be stable or rising, relative to 2007-2014 baseline survey data².

Objectives

- Objective 1.** (Protection and law enforcement): By 2017, at least one protected area within each priority landscape benefits from improved protection, as evidenced by at least one the following: a 25% decrease of illegal activities within the protected area; a 25% increase in the apprehension of illegal traffickers (such as hunters, dealers, traders, but also illegal miners, loggers etc.); a 30% increase in appropriate follow-up of judiciary processes for great ape and other wildlife-related infractions.
- Objective 2.** (Management): By 2017, the management of at least one protected area within each priority landscape is improved by the adoption and implementation of locally developed, updated management plans and/or other land-use planning tools.
- Objective 3.** (Policy and industry engagement): By 2017, African great ape conservation is improved in at least six range countries by the effective enforcement of wildlife legislation and other related policies (including those relating to international conventions such as CITES, CBD, CMS); the revision and (when appropriate) strengthening of relevant legislation; and an increase of at least 30% in the proportion of exploitation operators (logging and mineral extraction companies) which are adhering to and implementing best practices and WWF-supported certification schemes.
- Objective 4.** (Community support and awareness): By 2017, communities within at least six priority landscapes receive support to promote economically sustainable management strategies for community development which have minimal adverse impact on great apes and their environment, reduce human/ape conflicts and increase awareness and support for the conservation of great apes and their environment.
- Objective 5.** (Monitoring and research): By 2017, the size of great ape populations in at least one protected area within each priority landscape is estimated, the main threats affecting them are known, data are regularly collected to assess population trends and results are available for informed conservation decision-making; results from at least four research projects in topics critical to great ape conservation, such as disease management, tourism impact, bio-monitoring, population dynamics and monitoring of illegal killing and trade, are integrated into conservation strategic planning.
- Objective 6.** (Habitat preservation): By 2017, at least one population of each great ape species will benefit from an increase in habitat range under protection through the creation of new protected areas and/or through improved management and protection of critical corridor areas around and between priority sites, including high conservation value forests (HCVFs), certified logging concessions and conservation of areas of unique biological interest to great apes.

¹ AfGAP priority landscapes cover two populations of western lowland gorilla, bonobo and eastern and central chimpanzee, and one population of Cross River gorilla, eastern lowland gorilla, mountain gorilla, west African chimpanzee and Nigeria/Cameroon chimpanzee. Each landscape includes at least one protected area.
² Full baseline data, as projected in the GHoA Strategic Plan (2013-2015) will be used to monitor this SAP as it becomes available.

3.3 AFGAP PRIORITY LANDSCAPES

Three main criteria were used to select the AfGAP priority landscapes:

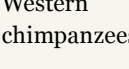
- 1. The identification of the landscape as a priority area within existing regional great ape action plans (such as IUCN action plans);
- 2. The potential and capacity of WWF to deliver conservation outcomes in the selected landscape (either through existing WWF projects or partnerships);
- 3. The selection of the area as a priority landscape in other regional and sub-regional WWF programmes and initiatives (CARPO/GHoA, African Elephant Programme, ESARPO, etc.).

In addition to the above criteria, the selection process ensured that the AfGAP priority landscapes were areas of largest recorded great ape population size and largest undisturbed habitat (which offer the best chance of securing long-term viability of the relevant ape population), and that the portfolio of AfGAP priority landscapes covered all four species and nine subspecies of African great apes (Table 3 and Fig.4). The list of AfGAP priority landscapes remains subject to regular review to integrate new information and adapt to changing circumstances. Other sites may receive attention through priority activities such as surveys in poorly known areas or through increased support to law enforcement within range states.

Chimpanzee (*Pan troglodytes*) walking in forest, Mahale National Park, Tanzania



Table 3. WWF priority landscapes for the conservation of African

Family	Priority landscape	Rationale
 Eastern chimpanzees	1. Maiko-Tanya – Kahuzi-Biega Forest Landscape (DRC)	Priority Chimpanzee Conservation Unit ¹ WWF AEP priority landscape ² , GHoA priority landscape ³ Area size: 105,736km ² Main threats: Hu, HbL&D, PLE(1)
	2. Itombwe Reserve (DRC)	Priority Chimpanzee Conservation Unit ¹ WWF ESARPO – African Rift Lakes Region Area size: 16,000km ² Main threats: Hu, HbL&D, PLE ¹
 Western chimpanzees	3. Taï-Grebo-Sapo-Cestos (Cote d’Ivoire, Liberia)	Exceptionally Important Priority Area ³ WWF AEP priority landscape Area size: 10,000km ² ³ Main threats: Hu, HbL&D ³
 Nigeria–Cameroon chimpanzees	4. Ebo/Ndokbou Landscape (Cameroon)	Very Important Priority Area ⁴ WWF Coastal Forests Programme Area size: 2,500km ² Main threats: Hu ⁴
	5. Dja-Minkebe-Odzala Trinational Forest Landscape (Cameroon, Rep. Congo, Gabon)	Exceptional Priority Area (Odzala/Lossi/Pikounda/Ngombe/Ntokou complex;Dja conservation complex; Boumba-Bek/Nki complex) (5)WWF GHoA; AEP priority landscape Area size: 191,541km ² Main threats: Hu, Di, HbL&D ⁵
 Central chimpanzees and western lowland gorillas	6. Gamba-Conkouati Forest Landscape (Gabon, Rep. Congo)	Exceptional Priority Area ⁵ WWF GHoA; AEP priority landscape Area size: 35,073km ² Main threats: Hu, HbL&D ⁵
	7. Sangha Tri-National Forest Landscape (CAR, Cameroon, Rep. Congo)	Exceptional Priority Area ⁵ WWF GHoA; AEP priority landscape Area size: 43,936km ² Main threats: Hu, HbL&D ⁵
 Cross River gorillas	8. Rio Campo-Campo Ma’an Complex (Eq. Guinea, Cameroon)	Important Priority Area ⁵ WWF GHoA Area size: 7,000km ² Main threats: Hu, HbL&D ⁵
	9. Cross River Gorilla Landscape (Nigeria, Cameroon)	Priority Sites ⁶ WWF Coastal Forests Programme Area size: 8,000km ² Main threats: Hu, HbL&D, Di ⁶

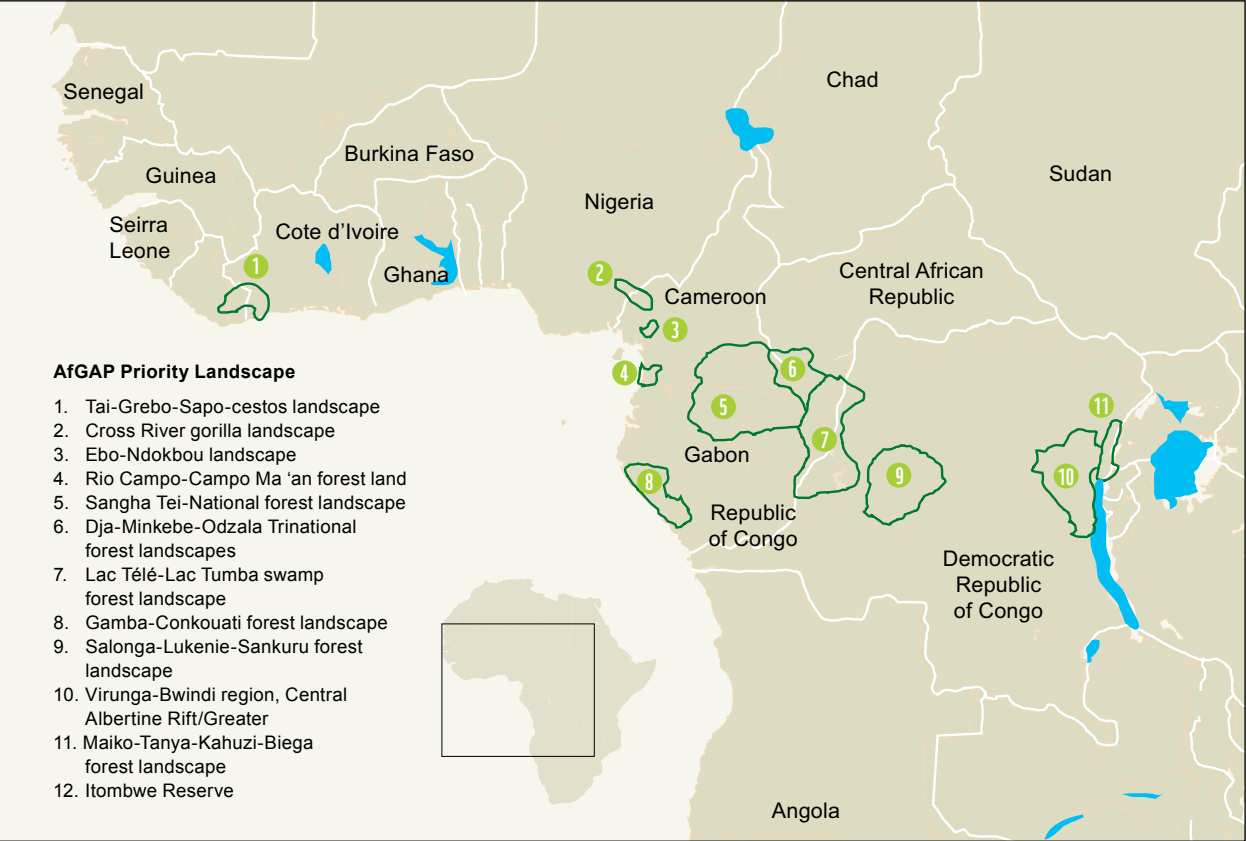
Main threats: Hu (Hunting); HbL&D (Habitat Loss & Degradation); PLE (Poor Law Enforcement); CC (Civil Conflicts); Di (Disease). (1) Status Survey and Conservation Action Plan for the Eastern Chimpanzee (Plumptre et al., 2010); (2) WWF Species Action Plan: African Elephant, 2007-2011 (Stephenson 2007); WWF Central African Regional Programme Office, Green Hearth of Africa Initiative (WWF 2010); (3) Regional Action Plan for the Conservation of Chimpanzees in West Africa (Kormos and Boesch, 2002); (4) Regional Action Plan for the Conservation of the Nigeria-Cameroon Chimpanzee (Morgan et al. in prep.); (5) Regional Action Plan for the Conservation of Chimpanzees and Gorillas in Western Equatorial Africa (Tutin et al. 2005); (6) Regional Action Plan for the Conservation of the Cross River Gorillas (Oates et al. 2007);

Table 3. WWF priority landscapes for the conservation of African continued

Family	Priority landscape	Rationale
Eastern Lowland gorillas	10. Maiko – Tanya – Kahuzi-Biega Landscape (DRC)	WWF AEP priority landscape (2) WWF GHoA Area size: 105,736km ² Main threats: HbL&D, CC, Hu (7)
Mountains gorillas	11. Virunga-Bwindi Region, Central Albertine Rift/ Greater Virunga Landscape (Rwanda, Uganda, DRC)	Priority Area(8) IGCP-WWF ESARPO Area size: 15,000km ² Main threats: HbL&D, Di, CC
	12. Lac Tele-Lac Tumba Swamp Forest Landscape (DRC, Rep Congo)	WWF GHOA Area size: 130,710km ² Main threats: Hu (5+8)
	13. Salonga-Lukenie-Sankuru Forest Landscape (DRC)	WWF AEP priority landscape (2) WWF GHoA Area size: 104,205km ² Main threats: Hu (9)

(2) WWF Species Action Plan: African Elephant, 2007-2011 (Stephenson 2007); WWF Central African Regional Programme Office, Green Hearth of Africa Initiative (WWF 2010); (7) IUCN Red List of Threatened Species (Robbins et al. 2008); (8) Strategy Document Virunga. Five year strategy: 2006-2010 (IGCP 2008); (9) IUCN Red List of Threatened Species (Fruth et al. 2008).

Fig. 4 African Great Ape Programme Priority Landscapes



3.4 KEY ACTIVITIES AND INDICATORS

Goal

By 2020, the populations of African great apes living in the AfGAP priority landscapes will be stable or rising, relative to 2007-2012 baseline survey data.

Indicator	Great ape population trends
Objective 1	(Protection and law enforcement): By 2017, at least one protected area within each priority landscape benefits from improved protection, as evidenced by at least one of the following: a 25% decrease of illegal activities within the protected area; a 25% increase in the apprehension of illegal traffickers (such as hunters, dealers, traders, but also illegal miners, loggers etc.); a 30% increase in appropriate follow-up of judiciary processes for great ape and other wildlife-related infractions.
Key activities	• Continue to support law enforcement at the local (landscape/protected area), national and regional level. • Provide additional support to address large-scale bushmeat commerce by focusing on traders and dealers in big cities and on the main transport axes. • Provide technical and financial assistance for training and equipment needs. • Review the curricula of the forestry and judiciary training schools with focus on great apes and other wildlife-related crimes. • Link anti-poaching efforts in the field and the judicial follow-up of each case entering the court system. • Promote local awareness on protected areas regulations, limits and national wildlife legislation. • Create a deterrent factor by promoting awareness of the consequences of not complying with wildlife legislation (e.g. generating media coverage of arrests and prosecutions). • Monitor great ape populations and human activities in selected areas. • Curb large-scale commercial hunting by supporting law enforcement investigations and operations targeting dealers, traders and “white collar” criminals in cities. • Establish an intelligence database (possibly through TRAFFIC) to gather information to enable targeted large-scale enforcement operations (at the national, regional and international level). • Develop a monitoring system for assessing law enforcement effectiveness.
Indicators	Data on great apes population trends; trends on wildlife-related illegal activities; number of offenders apprehended, prosecuted and serving their sentence; trends in penalties imposed; number of people reached by information dissemination campaigns; number of media pieces reporting apprehension of and sentences handed down to wildlife law offenders; number of successful investigations undertaken; establishment of the intelligence database.
Objective 2	(Management): By 2017, the management of at least one protected area within each priority landscape is improved by the adoption and implementation of locally developed, updated management plans and/or other land-use planning tools.
Key activities	• Support strategic planning involving all relevant stakeholders to develop specific management plans aiming at preserving existing protected areas and their great ape populations. • Support implementation of activities identified in approved management plans and the monitoring of selected indicators. • Collaborate with management teams of logging and mining concessions in zones adjacent to selected protected areas to promote best practices and credible certification schemes which effectively limit the impact of extractive practices on great apes and their environment.



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Adult male ‘silverback’ western lowland gorilla at Dzanga-Sangha Protected Areas, Central African Republic

	• Support regional initiatives to facilitate transboundary management of protected areas and their wildlife.
Indicators	Great ape population trends; existence of relevant updated documents (management plans and land-use planning tools); progress reports and monitoring of the indicators identified in the management plans; number of extractive companies engaged in and complying with low-impact practices (such as credible certification schemes); number of transboundary protected area management initiatives operational.
Objective 3	(Policy and industry engagement): By 2017, African great ape conservation is improved in at least six range countries by the effective enforcement of wildlife legislation and other related policies (including those relating to international conventions such as CITES, CBD, CMS); the revision and (when appropriate) strengthening of relevant legislation; and an increase of at least 30% in the proportion of exploitation operators (logging and mineral extraction companies) which are adhering to and implementing best practices and WWF-supported certification schemes.
Key activities	• Support the drafting, validation, adoption and implementation of a COMIFAC Wildlife Trade Law Enforcement Action Plan (PAPECALF) for Central Africa. • During COMIFAC regional meetings, advocate for a stronger commitment of all COMIFAC countries to effectively enforce wildlife legislation. • Following the CMS Gorilla Agreement resolution on law enforcement and seeking adoption by COMIFAC, promote a system of law enforcement monitoring to render accountable all signatory members; promote circulation of monitoring system reports. • Analyse existing legislation and when pertinent provide data and arguments to state policy-makers in support of any legislative changes that are required. • Promote the inclusion of great apes-specific recommendations in the FSC guidelines for the Congo Basin, adapted from the IUCN Guidelines for Reducing the Impact of Commercial Logging on Great Apes in Western Equatorial Africa. • Use the information gathered from law enforcement efforts to name and shame key players (individuals, institutions and organizations) in the illegal bushmeat trade. • Partner with relevant organizations working on law enforcement (including but not limited to range states ministries, COMIFAC, TRAFFIC, IUCN-SGA, UNEP, GRASP, WCS, LAGA, RALF, PALF, etc.) to increase value and effectiveness of law enforcement efforts across a full range of stakeholders. • Partner with the WWF GFTN, the Congo Basin FSC and the WWF Regional Extractive Industries Advisor to engage with responsible operators in elaborating specific great ape impact-reduction guidelines • Gather data from the field to supply relevant international stakeholders (e.g., WWF NOs, external donors, partner NGOs, CITES, CMS, IUCN, etc.) with strategic information to apply pressure on foreign-based investors active in great ape range states which are non-compliant with international agreements and legally binding treaties pertaining to the protection of great apes and their habitats.
Indicators	Number of legislative changes secured; law enforcement monitoring system in place; wildlife law enforcement plan adopted; volume of media coverage highlighting compliance (or lack of) with wildlife-related laws and exposing illegal practices of highly placed personalities (and the institutions they work for); number of arrests / prosecutions resulting from intelligence system; number of operators, and size of exploitation area, adhering to and implementing best practices and WWF-supported certification schemes.

Objective 4	(Community support and awareness): By 2017, communities within at least six priority landscapes receive support to promote economically sustainable management strategies for community development which have minimal adverse impact on great apes and their environment, reduce human/ape conflicts and increase awareness and support for the conservation of great apes and their environment.
Key activities	- Assess root causes of local threats to great apes and local attitudes towards great ape conservation. - Promote awareness campaigns around protected areas aiming to increase the support for great ape conservation by addressing specific knowledge gaps and local conflicts pertinent to the given area. - Promote participation and involvement of local communities in all aspects of protected area management, including priority for employment and benefit-sharing schemes. - Collaborate with local partners in the elaboration of targeted awareness-raising material providing accurate information on great apes conservation. - Promote the development of financially sustainable resource management initiatives, such as great apes tourism, with limited to non-existent impact on great apes and their habitat. - Support development of innovative, small-scale enterprises which are financially sustainable and beneficial to local communities, and which clearly show direct link to increased support for conservation efforts (as in attitudes and changes of behaviour) for great apes and their habitat. - Develop locally adapted management strategies to prevent and mitigate human/great apes conflicts (following the IUCN Best Practices Guidelines for the Prevention and Mitigation of Conflict between Humans and Great Apes). - Monitor changes in awareness, knowledge and behaviour following livelihood programmes and awareness campaigns. - Promote environmental education in schools, both in rural and urban areas. - Support media diffusion (through radio, newspaper and TV) of great ape conservation-related topics, including legal aspects of hunting and trading protected species. - With health and disease specialists, conduct targeted local, national or regional campaigns focusing on the pathogen transfer risks present while handling and consuming great ape bushmeat (e.g., Ebola, anthrax, etc.). - With GFTN, promote responsible stewardship among targeted timber companies that apply extraction methods which reduce impacts on great apes in logging concessions; meanwhile, conduct targeted consumer awareness campaigns promoting credible timber companies.
Indicators	Completed analysis of the local threats to great apes; attitudinal and awareness surveys (and trend assessment); level of benefits from resource management initiatives (number of people employed, household incomes, revenue-sharing benefits, number of villages benefiting from services provided by the protected area management, etc.); trends of human-great apes conflicts; number of people reached by awareness campaigns; number of media pieces; number of schools and students involved in environmental education programmes; evidence of attitudinal and behavioural changes (e.g. consumer choice, market availability, restaurant menus etc.).
Objective 5	(Monitoring and research): By 2017, the size of great ape populations in at least one protected area within each priority landscape is estimated, the main threats affecting them are known, data are regularly collected to assess population trends and results are

	available for informed conservation decision-making; results from at least four research projects in topics critical to great ape conservation, such as disease management, tourism impact, bio-monitoring, population dynamics and monitoring illegal killing and trade, are integrated into conservation strategic planning.
Key activities	- Support research focusing on great ape conservation and management issues, including (but not limited to): human-great apes disease spread; natural spread of viral infections (focus on Ebola); disease prevention methods; tourism impact assessment; monitoring of great ape populations; baseline data collection on population demography, behaviour, habitat condition and life histories. - Support integration of researchers into protected area management planning and disseminate research findings through circulating reports and publications, through contributing data to the APES database and the Central African Bushmeat Monitoring System (SYNAC), and, when needed, through targeted seminars. - Support education of national researchers, training of technicians and analysts and studies from national institutions. - Promote the development of linkages between research institutions and partners to collaborate towards common goals benefiting great ape conservation. - Support comparable biomonitoring programmes providing initial population estimates and periodic (≥ 5 year) trends (using IUCN Guidelines for Monitoring Great Apes as reference).
Indicators	Number of scientific publications; participation of researchers in planning and/or other management meetings; number of national researchers addressing great ape conservation-relevant topics; estimates of great ape populations, densities, distributions and trends; estimates of habitat condition, distribution and trends of human activities in great ape range; number of WWF projects in great ape areas contributing data to the APES database.
Objectives 6	(Habitat preservation): By 2017, at least one population of each great ape species will benefit from an increase in habitat range under protection through the creation of new protected areas and/or through improved management and protection of critical corridor areas around and between priority sites, including high conservation value forests (HCVFs), certified logging concessions and conservation of areas of unique biological interest to great apes.
Key activities	- Support governments to delineate and gazette new protected areas. - Promote the creation of new national and transboundary areas. - Support the identification, protection and management of critical corridor areas between priority sites. - Monitor the implementation of best practices and certification schemes in logging concessions. - Promote the rehabilitation of potentially suitable habitat for species living in critically fragmented habitat (notably Cross River gorillas and mountain gorillas). - Support national land-use planning initiatives favouring the maintenance of corridors for great ape conservation between existing protected areas.
Indicators	Size of the protected area benefiting from improved protection; size of critical corridor areas around and between priority sites benefiting from improved management and protection; change in status of protection; number of concessions adhering to certification schemes; number and surface area of corridors secured; distribution and trends of great ape populations in corridors and forestry concessions.

4. PROGRAMME IMPLEMENTATION (2011-2017)

“The strength of the AfGAP SAP lies in the passionate and courageous efforts of WWF field staff, as well as its strategic external partners operating in great ape range states.”



4.1 PROGRAMME MANAGEMENT AND DEVELOPMENT

The African Great Apes Programme is overseen by the AfGAP Leader. The AfGAP Leader provides strategic leadership to the SAP, implements regional efforts and facilitates the selection, development, fundraising, communication and monitoring of AfGAP projects. The Leader works within the Species Programme team at WWF International, the sub-regional field programmes, WWF regional programmes, TRAFFIC and national offices, as well as with external partners.

The following criteria are used to prioritize great ape conservation projects for the allocation of WWF-AfGAP capacity and support (adapted from Stephenson 2002)

Category A Criteria

- Contribution to AfGAP objectives. Interventions will be prioritized if they make a demonstrable contribution to AfGAP objectives including populations in identified priority landscapes.
- Synergy with WWF Global Initiatives (GIs) and regional and sub-regional plans. Interventions demonstrating the flagship value of great apes and which contribute to WWF GIs and regional and sub-regional objectives and targets will be preferred.
- Population viability. Support will only be provided to interventions on great ape populations considered to be viable. In most cases this will depend on population size, but other factors such as degree of immediate threat will also be taken into consideration.
- Feasibility, efficiency and techniques. Interventions will not be supported if they are deemed unfeasible, inefficient (cost/benefit ratio), technically inappropriate or unsustainable, or where the political or social climate means conservation action is unlikely to be successful. The techniques, tools, logistical arrangements and budgets need to be appropriate.
- WWF policy and procedures. The intervention must support at least one of the AfGAP objectives, must not contradict any published WWF policies and operating procedures, and must follow adopted technical guidelines.

Category B Criteria

- Population size. For a given subspecies, sub-region, ecoregion or landscape, larger great ape populations will be given priority over smaller populations.
- Multi-species benefit. For a given sub-region or landscape, interventions in sites that benefit another species of the Global Species Programme (e.g., elephants) will be given priority.
- Conservation impact. Interventions must have a high likelihood of producing a concrete conservation impact on the ground. Factors used to determine potential impact are sustainability, demonstrated political will of the relevant government(s), and capacity of WWF on the ground to deliver.
- Synergy with national and sub-regional great ape conservation strategies and action plans. Preference will be given to interventions that help range states develop or implement new national and sub-regional strategies and conservation action plans.
- Innovation and catalytic role. AfGAP encourages innovative programmes that test new approaches to great ape conservation and can act as models that provide lessons



Virunga National Park Intensive agriculture encroaching on the park boundary. Democratic Republic of Congo

© Martin Harvey / WWF-Canon

Better coordination is required between the different bio-monitoring programmes to select the most appropriate methodology for each site and ensure higher comparability of the recorded data

- for other programmes. They should produce a multiplier effect wherever possible, leveraging further support from other agencies. This can be demonstrated through the intervention's role in generating action, policy and partnerships at all levels.
- Flagships. Interventions will be favoured where they maximize the great apes' potential as flagship species in terms of opportunities for communications, education and awareness, and fundraising. Priority will be given to work that supports WWF campaigns.
- Cost-benefit assessment. The intervention must maximize the impact for the given budget and provide largest conservation value for money.
- Emergency interventions. AfGAP will support emergency interventions where populations are considered to be at risk and where rapid support can make a significant contribution to safeguarding the given population.

4.2 MONITORING GREAT APE DISTRIBUTION, POPULATION ABUNDANCE AND TRENDS

Crucial to an effective conservation strategy is knowledge of the status of a given species. This information is necessary to be able to prioritize protection activities for the most important populations, set precise management goals and monitor trends towards achieving these goals. However, despite the great deal of effort and money spent each year on monitoring programmes, our knowledge on the current distribution of African great apes has significant gaps and estimates of their populations are at best approximate, generally outdated and often non-existent.

Our ability to provide updated and accurate estimates of great ape populations is influenced by a series of factors, including:

- Accessibility of the area: areas affected by war and high levels of political insecurity generally cannot be surveyed (as is the case over a large part of the Grauer's gorilla's range), and extremely remote areas (as is the case for much of the bonobo's range) make surveys difficult and very expensive to execute.
- Methodology: survey results are often approximate or inaccurate due to numerous compounding elements, such as low sample size, lack of site-specific conversion factors for auxiliary variables (i.e. nest decay rates to extrapolate ape density from nest density), potential difficulties in distinguishing chimpanzee and gorilla nests where the two species overlap and reliability of data collection (due to the tedious nature of most survey field work, data collecting personnel may be prone to low accuracy when not motivated by the scientific relevance of the information recorded).
- Funding: to carry out accurate censuses, systematic surveys and population trend assessments is very costly.
- Finally, areas with low population density or overall small population size and sites outside protected areas might receive limited survey effort, since they are seldom considered as priority areas. In addition, greater effort may be required in these areas to produce samples large enough to provide reliable estimates.

In the light of the above, future efforts in surveying wild populations, including those supported by WWF under this SAP, should consider the following recommendations:

- Better coordination is required between the different bio-monitoring programmes to select the most appropriate methodology for each site and ensure higher comparability of the recorded data. Although there is no single best great ape survey technique for all scenarios, detailed guidelines have been developed (Kühl et al. 2008) to assist in the choice of the right survey/monitoring methodology, depending

on the objectives set, the size of the area, the variance of the encounter rate, the available budget, etc.

- Ideally, research institutions should be involved in designing the survey, ensuring proper training and monitoring of data collection and analysis. Results should be promptly shared and used to orient conservation efforts. Additionally, projects should contribute their survey results to the APES database (Ape Populations, Environments and Surveys: <http://apes.eva.mpg.de>), a web-based database that centralizes all great ape survey data to allow for the collective and transparent monitoring of changes in great ape distributions and numbers. A broader contribution of data to the APES database will increase its utility as a tool to the global conservation community.
- Partnerships should be established between NGOs, research institutions and government wildlife authorities when conducting surveys in remote areas to maximize the sampled area, make best use of logistical costs and build local capacity to survey and monitor great apes.
- Although new projects should not be established in conflict-torn areas, if presence was already established before the conflict and key personnel are able to conduct minimum monitoring and surveillance, financial and political efforts should be made to support this, when feasible and if all safety measures are considered.

Handler with an orphaned Western Lowland Gorilla (*Gorilla gorilla gorilla*) reintroduced into the wild



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THERE IS AN URGENT NEED TO HARMONIZE METHODS OF DATA COLLECTION, ANALYSIS AND REPORTING, TO ENSURE HIGHER COMPARABILITY WITHIN AND BETWEEN SITES AND TO CAPITALIZE ON ALL THE INFORMATION BEING RECORDED

4.3 MONITORING SAP PROGRESS AND PERFORMANCE

The programme's progress towards delivering on the objectives will be assessed through the monitoring plan (Table 4). While each project will be designed with its own objectives (showing clear links to the SAP objectives) and with its own specific indicators, the SAP monitoring plan will allow for an evaluation of the combined impact of projects and activities towards ensuring great ape conservation and the SAP goal. Regular monitoring and information gathering will also allow for adaptive, information-based management of projects and activities, enhancing their capacity to deliver while increasing accountability and credibility.

Throughout the great ape range, there is a vast amount of valuable data being recorded, including population surveys, analysis of habitat status and cover, bushmeat market studies, anti-poaching data (confiscations, arrests, sentences applied to wildlife offenders, etc.), socio-economic studies, surveys on local attitudes towards great ape conservation and so forth. There is an urgent need to harmonize methods of data collection, analysis and reporting, to ensure higher comparability within and between sites and to capitalize on all the information being recorded. Sound baseline data must be available at the onset of any given project, to allow for regular trend analysis and impact assessment. Monitoring must be an integral part of any project, with a clearly specified budget, implementing personnel and regular timeframe of execution. Results must be used both to orient conservation strategies and to assess their effectiveness.

4.4 CONTRIBUTION TO THE GLOBAL PROGRAMME FRAMEWORK

The AfGAP SAP is a priority delivery mechanism for the WWF Global Programme Framework (GPF), both the biodiversity metagoal and the footprint metagoal:

1) 2050 WWF biodiversity metagoal

By 2050, the integrity of the most outstanding natural places on Earth is conserved, contributing to a more secure and sustainable future for all.

2) 2050 WWF footprint metagoal

By 2050, humanity's global footprint stays within the Earth's capacity to sustain life and the natural resources of our planet are shared equitably.

The African great apes are among the 13 priority flagship species (and species clusters) selected for the focus of WWF conservation efforts under the biodiversity metagoal, as defined in the GPF 2008-2020 (WWF 2008). By protecting these selected species and their habitat, a significant proportion of the other species sharing the planet will also be conserved. In particular, African great apes are recognized as national emblems and global icons; their appeal can be instrumental to provide a focus for raising awareness and stimulating action and funding for broader conservation efforts within their range.

Contributing to the biodiversity metagoal is inherent in AfGAP's efforts to enhance protected area complexes. In addition, AfGAP will contribute to the footprint metagoal by collaborating closely with national and international industries working outside of PAs (e.g., logging and mining companies), encouraging increased commitment to best practice standards which aim to minimize the negative impacts of natural resource extraction on the environment and overall biodiversity.

By collaborating closely with the broader WWF network, AfGAP will seek and strengthen conscientious commercial partners. As the international community increasingly holds commercial stakeholders accountable, WWF and AfGAP will need to play a key role in ensuring that exploitation operations are carried out in a sustainable manner, and that the profiting businesses absorb the costs of doing so.

Additionally, conservation efforts for most African great apes and their range overlaps with the protection of the Congo Basin and the African Rift Lakes Region, two of the 35 WWF priority places identified in the GPF. The successful long-term preservation of African great apes will be the result of the concerted integration of habitat- and species-focused conservation measures. However, the protection of some key great ape populations may require stepping outside current WWF priority places. This is necessary in the case of the west African chimpanzee; an undetermined subspecies of gorilla in Ebo Forest, Cameroon; the Nigeria-Cameroon chimpanzee; and the most endangered of all African great ape subspecies, the Cross River gorilla in Cameroon and Nigeria.

The Congo Basin priority place is the site of a WWF Global Initiative – the Green Heart of Africa (GHOA) Initiative. The Congo Basin components of the AfGAP SAP are closely mirrored in the GHOA strategic plan, and the two programmes support each other synergistically.

TRAFFIC has an essential role to play in ensuring the effective delivery of the GPF, and thus AfGAP, by helping to mitigate the increasing threats posed to endangered African great apes from poaching and illegal trade. Recently, AfGAP and TRAFFIC have been working together with COMIFAC to increase the political support for law enforcement at the highest regional levels by encouraging range state governments to adopt the Central African Wildlife Law Enforcement Action Plan (PAPECALF), which focuses on curbing the illegal trade in wildlife.

Finally, the AfGAP SAP operates synergistically with the WWF African Elephant Programme SAP, with common goals for several strands of work such as policy and governance. Several AfGAP priority landscapes are also priority landscapes for the African elephant SAP.

See Annex III for a more comprehensive picture of overlaps between AfGAP, the African elephant SAP and GHOA.

4.5 PARTNERSHIPS

No one organization has the ability, resources or capacity to save great apes alone. The future of this unique group of animals will be dependent more than ever before on the ability of institutions and organizations to work together. Establishing and maintaining successful partnerships will therefore be a major component of this SAP.

The basis of long-term conservation of great apes and their environment is built through a close and honest collaboration with the national authorities responsible for natural resource management and the decentralized government branches in the priority areas for great ape conservation, from district authorities down to the community structures at the smallest administrative unit. Equally important is working with and empowering civil society, represented by local NGOs and community-based organizations.

WWF will work to strengthen our partnerships with other NGOs involved in promoting great ape conservation. Success in this effort will be essential to increase conservation impact and to make the best use of complementary competences and resources. Examples of complementary approaches include the support WWF has provided to the Wild Chimpanzees Foundation (WCF) in Côte d'Ivoire to carry out extensive surveys and innovative environmental education approaches, the collaboration with LAGA on judicial follow-up of wildlife crimes, and work with the WCS Field Veterinarian Programme during the setting-up of a health-monitoring programme in a WWF-supported gorilla tourism programme.

One example of a pragmatic approach to great ape conservation is the partnership between WWF, FFI and AWF in supporting the International Gorilla Conservation

Programme (IGCP). In the face of great odds, IGCP and its partners (e.g., national parks agencies of Rwanda, Uganda and DRC, the Karisoke Research Centre, the Mountain Gorilla Veterinary Centre, etc.) have been key players in securing mountain gorilla conservation efforts for almost 20 years.

Similarly, WWF will work to strengthen partnerships with scientific institutions, universities and researchers studying great ape-related issues to ensure that WWF’s conservation strategies are guided by scientific knowledge.

WWF will work through partnerships with government aid agencies (e.g. USAID, USFWS, AFD, etc.), international finance institutions and banks, to influence investment policies and lending practices by strengthening environmental conditions. Similarly, we will work with governments and the private sector in the extractive industry (logging, mining and commercial agriculture) and in the infrastructural sector (construction of roads, railways, ports, dams) to influence the choice of best practices and to promote relevant changes in policies regulating natural resource management. Lobbying at the international level will be needed to make sure governments and businesses apply these practices and policies.

During the implementation of the present SAP, AfGAP will strengthen important existing relationships with traditional partners (e.g., WWF NOs, private donors) and other relevant GPF programmes (e.g. Forest Programme, GHoA, MTI, TRAFFIC, ESARPO, CARPO). Meanwhile, we will pursue new, innovative partnerships aimed at expanding AfGAP’s approach to tackling complex conservation issues facing great apes today. Although highly committed and supportive, NOs in general prioritize their support to meet the needs of field programmes; meanwhile, government aid agencies often allocate support to meet a specific political priority. This means that occasionally adaptive strategic planning is needed to meet the requirements of funding sources and capitalize on the opportunities they offer.

4.6 FUNDRAISING

To implement the AfGAP SAP and support project activities throughout the African great apes’ range, a significant effort will be required both to raise funds and to maximize linkages and alignment with other relevant initiatives, notably, but not exclusively, the WWF various programmes mentioned above.

A full fundraising strategy for the AfGAP SAP will be developed as part of the three-year work plans of the SAP, in collaboration with the WWF Network and the field projects. The strategy will include fundraising campaigns aimed at private donors, private companies and major foundations. The budget estimates for the implementation of the AfGAP SAP are in the three-year work plan.

While funding from governments and aid agencies does not traditionally focus solely on species conservation efforts, AfGAP will be involved in developing (and monitoring the implementation of) large-scale environmental and sustainable development projects in great ape range. This will maximize the benefits derived from a given funding source and ensure the effectiveness of the conservation actions specifically targeting great apes.

Finally, there is an urgent need to identify and develop long-term financing mechanisms for more effective, large-scale and long-term funding of the conservation of great apes and their habitat. Pilot schemes, such as trust funds, are being developed for transboundary conservation areas in Central and East Africa. The AfGAP fundraising strategy will consider these models, and develop proposals for their replication elsewhere.

A stronger effort will be undertaken to engage with extractive companies and infrastructure projects to promote adoption of improved operating standards and commitment to funding for “biodiversity offsets”. These are conservation activities

intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects and commercial activities (ten Kate et al. 2004).

We will also monitor various payments for ecosystem services (PES) projects for their potential as a sustainable financing mechanism for the long-term management of natural ecosystems. However, PES is still in its infancy, and we must take due care not to raise unrealistic expectations at the local level.

4.7 MULTIPLICATION BY DESIGN

An important lesson learned from decades of WWF experience in carrying out field projects in African developing nations is that it is extremely difficult to elaborate and implement successful conservation strategies under tremendously challenging socio-economic and political conditions. In equatorial Africa, great apes are under increasing threats in frequently unstable areas. This instability presents huge and varied social, economic and political challenges, threatening to disrupt conservation strategies that might normally yield successful outcomes.

Building strategic partnerships with pertinent stakeholders from various fields of influence and expertise (see 4.5 Partnerships, above) is thus imperative. Multiplying these partnerships will be key to delivering projects effectively.

At the national level, various government ministries play a role in supporting our conservation efforts; indeed the ultimate goal is to ensure that governments can fully take over great ape protection and management (although this is some way into the future for most African great ape range states). While our projects normally function under a country’s environment or forestry ministry, communication with many other ministries is also essential for achieving success. We will continue to strengthen relationships with ministries of justice, defence, interior and tourism, among others, to support our collective efforts. At the field level, government representatives also play a significant role in enlisting broader support from one of our primary partners, the local communities who live in and around our field project sites.

In addition to working with national partners, AfGAP will enlist various international partners to provide support and expertise where needed. We will strategically engage with national and international scientific bodies, judiciary experts, NGO partners, communications outlets, sustainable development organizations and businesses to enhance the effectiveness of our work. The ultimate aim is to multiply our efforts as these external partners take leadership of successful aspects of AfGAP SAP priorities (e.g., businesses conducting effective anti-poaching work in concessions, etc.).

4.8 THE SOCIAL DIMENSION

- This SAP’s implementation is aligned with WWF’s four guiding social policies regarding:
- Indigenous Peoples: WWF respects indigenous and traditional peoples’ human and development rights and recognizes the importance of conserving their cultures.
- Poverty and Conservation: Find equitable solutions for people and the environment, making special efforts to enable local people to play a key part in crafting solutions for sustainable development.
- Human Rights Framework: Respect human rights and implement measures contained in the framework and their application within the scope of our conservation initiatives.
- Gender: Commitment to equity and integrating a gender perspective in its policies, programmes and projects, as well as in its own institutional structure.

5. OUTLOOK

Despite rapidly decreasing populations, great apes and their habitat stand a chance at long-term survival. But this requires the enforcement of current national laws, international treaties, conventions, agreements and regulations, and the close collaboration of a full range of stakeholders, including governments, industry, civil society and local communities,

Addressing the lack of adequate law enforcement efforts and a genuine deterrent towards committing wildlife crimes needs to be vigorously addressed during the present SAP phase. AfGAP expects to make a significant contribution towards promoting effective law enforcement during the following 5-7 years. This will pave the way for a stronger and more effective approach to other longer-term threats (such as climate change, spread of infectious diseases, and large-scale development and resource extraction projects), which are expected to be the main focus of the next SAP phase.

Western lowland gorilla, Dzanga-Sangha Protected Areas, Central African Republic



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6. BIBLIOGRAPHY

- Alp, R. 1997. “Stepping-sticks” and “seat-sticks”: new types of tools used by wild chimpanzees (*Pan troglodytes*) in Sierra Leone. *American Journal of Primatology* 41(1): 45–52.
- Altizer, S., Dobson, A., Hosseini, P., Hudson, P., Pascual M. and P. Rohani. 2006. Seasonality and the dynamics of infectious disease. *Ecology Letters* 9(4):467-484.
- Basabose, A. and Gray, M. 2011. Mountain Gorilla Conservation and Climate Change. In: ‘The Implications of Global Climate Change for Mountain Gorilla Conservation.’ A White Paper prepared by the African Wildlife Foundation, the International Gorilla Conservation Programme, and EcoAdapt. Available at: www.igcp.org/wp-content/themes/igcp/docs/pdf/The-Implications-of-Global-Climate-Change-for-Mountain-Gorilla-Conservation-in-Albertine-Rift.pdf [accessed 19 August 2013].
- Bergl, R.A. 2006. Conservation Biology of the Cross River Gorilla (*Gorilla gorilla diehli*). Ph.D. thesis, City University of New York, USA.
- Bergl, R.A. and Vigilant, L. 2007. Genetic analysis reveals population structure and recent migration within the highly fragmented range of the Cross River gorilla (*Gorilla gorilla diehli*). *Molecular Ecology* 16:501-516.
- Bermejo, M. 1997. Study of western lowland gorillas in the Lossi Forest of north Congo and a pilot gorilla tourism plan. *Gorilla Conservation News* 11:6–7.
- Bermejo, M. and Illera, G. 1999. Tool-set for termite-fishing and honey extraction by wild chimpanzees in the Lossi forest, Congo. *Primates* 40: 619–627.
- Bermejo, M., Rodríguez-Tejreiro, J.D., Illera, G., Barroso, A., Vilà, C. and P.D. Walsh. 2006. Ebola outbreak kills 5000 gorillas. *Science* 314 (5805): 1564.
- Biro, D., Inoue-Nakamura, N. and R. Tonooka. 2003. Cultural innovation and transmission of tool use in wild chimpanzees: evidence from field experiments. *Animal Cognition* 6: 213–223.
- Boesch, C. and Boesch, H. 1989. Hunting behaviour of wild chimpanzees in the Tai National Park. *American Journal of Physical Anthropology* 78: 547–573.
- Boesch, C. and Tomasello, M. 1998. Chimpanzee and human cultures. *Current Anthropology* 39: 591–694.
- Boesch, C. and Boesch, H. 1990. Tool use and tool making in wild chimpanzees. *Folia Primatologica* 54 (1–2): 86–99.
- Boesch, C. and Boesch-Achermann, H. 2000. *The Chimpanzees of the Tai Forest: Behavioural Ecology and Evolution*. Oxford University Press, Oxford, UK.
- Boesch, C., Marchesi, P., Marchesi, N., Fruth, B., and F. Joulain. 1994. Is nut cracking in wild chimpanzees a cultural behaviour? *J. Hum. Evol.* 26: 325–338.
- Boesch, C., Uehara, S. and H. Ihobe. 2002. Variations in chimpanzees-red colobus interactions. In: C. Boesch, G. Hohmann and L. Marchant (eds.) *Behavioural Diversity in Chimpanzees and Bonobos*, pp.221-230. Cambridge University Press, Cambridge, UK.
- Boesch, C., Head, J., Tagg, N., Arandjelovic, M., Vigilant, L. and M. Robbins. 2007. Fatal Chimpanzee Attack in Loango National Park, Gabon. *Int J Primatol* 28:1025–1034.
- Boko, M., Niang, I., Nyong, A., Vogel, C., Githeko, A., Medany, M., Osman-Elasha, B., Tabo R. and P. Yanda. 2007. Africa. In: Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. and C.E. Hanson (eds.). *Climate change: impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK. pp. 433-467.

Butynski, T.M. 2001. Africa's Great Apes. In: Beck, B., Stoinski, T.S., Hutchins, M., Maple, T.L., Norton, B., Rowan, A., Stevens, E.F. and A. Arluke (eds.) *Great Apes and Humans: The Ethics of Coexistence*. Smithsonian Institution Press, Washington DC, USA. pp. 3–56.

Butynski, T. M. 2003. The chimpanzee *Pan troglodytes*: taxonomy, distribution, abundance, and conservation status. In: Kormos, R., Boesch, C., Bakarr, M. and T. Butynski (eds.) *West African Chimpanzees: Status Survey and Conservation Action Plan*. IUCN/SSC Primate Specialist Group. IUCN, Gland, Switzerland. pp.5–12.

Campbell, G., Kuehl, H., N’Goran Kouamé, P. and C. Boesch. 2008. Alarming decline of West African chimpanzees in Côte d’Ivoire. *Current Biology* 18(19).

Chapman, C.A., Lawes, M.J. and H.A.C. Eeley. 2006. What hope for African primate diversity? *African Journal of Ecology* 44(2):116-133.

Desanker, P.V. 2002. Impact of Climate Change on Life in Africa. WWF-UK, Godalming, UK. Available at www.wwf.org.uk/filelibrary/pdf/africa_climate.pdf [accessed 19 August 2013].

de Waal, F. 1995. Bonobo Sex and Society. *Scientific American* 272(3): 82–88.

de Wasseige, C. et al. 2012. The Forests of the Congo Basin – State of the Forest (2010). Publications Office of the European Union, Luxembourg. ISBN: 978-92-79-22716-5. DOI: 10.2788/47210

Doran, D. 1993. Comparative Locomotor Behaviour of Chimpanzees and Bonobos: The Influence of Morphology on Locomotion. *Am. J. Phys. Anthropol.* 91:83–98.

Dupain, J. and van Elsacker, L. 2001. The status of the bonobo (*Pan paniscus*) in the Democratic Republic of Congo. In: Galdikas, B.M.F., Briggs, N.E., Sheeran, L.K. et al. (eds.) *All Apes Great and Small, Vol. 1: African Apes*. Kluwer Academic, Plenum Publishers, New York, Boston, Dordrecht, London, Moscow. pp. 57–74.

Duvall, C. 2003. Agriculture and Chimpanzee Survival in West Africa. In: Kormos, R., Boesch, C., Bakarr, M.I. and T. Butynski (eds.). *West African Chimpanzees. Status Survey and Conservation Action Plan*. IUCN/SSC Primate Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. pp143-146.

Ellis, C. 2008. *Investment Strategy for the Conservation of African and Asian Great Apes: WWF-Netherlands, 2008-2012*. Report to WWF-Netherlands. Zeist, The Netherlands.

Fa, J.E., Peres, C.A. and J. Meeuwig. 2002. Bushmeat exploitation in tropical forests: an intercontinental comparison. *Conservation Biology* 16: 232–237.

Fay, J.M., Agnagna, M., Moore, J. and R. Oko. 1989. Gorillas (*Gorilla gorilla gorilla*) in the Likouala swamp forests of north central Congo – preliminary data on populations and ecology. *International Journal of Primatology* 10 (5).

Fawcett, K. 2004. *The Impact of Tourism on Gorilla Behaviour – Preliminary Results from Rwanda*. Unpublished report, Karisoke Research Centre, Ruhengeri, Rwanda.

Fleury-Brugiere, M.C. and Brugiere, D. 2010. High Population Density of *Pan troglodytes verus* in the Haut Niger National Park, Republic of Guinea: Implications for Local and Regional Conservation. *International Journal of Primatology* 31:383–392.

Foster, P. 2001. The potential negative impacts of global climate change on tropical montane cloud forests. *Earth Science Reviews* 55:73-106.

Fowler, A. Koutsioni, Y. and V. Sommer. 2007. Leaf-swallowing in Nigerian chimpanzees: evidence for assumed self-medication. *Primates* 48:73–76

Fruth, B., Benishay, J.M., Bila-Isia, I., Coxe, S., Dupain, J., Furuichi, T., Hart, J., Hart, T., Hashimoto, C., Hohmann, G., Hurley, M., Ilambu, O., Mulavwa, M., Ndunda, M., Omasombo, V., Reinartz, G., Scherlis, J., Steel, L. and J. Thompson. 2008. *Pan paniscus*. In: IUCN. 2010. IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Furuichi, T. 1987. Sexual swelling, receptivity and grouping of wild pygmy chimpanzee females at Wamba, Zaire. *Primates* 28:309–318.

Furuichi, T. 1989. Social interactions and the life history of female *Pan paniscus* in Wamba, Zaire. *International Journal of Primatology* 10(3):173–197.

Ganas, J., Robbins, M.M., Nkurunungi, J.B., Kaplin, B.A. and A. McNeilage. 2004. Dietary variability of mountain gorillas in Bwindi Impenetrable National Park, Uganda. *International Journal of Primatology* 25:1043–1072.

Goldsmith, M.L. 1999. Ecological constraints on the foraging effort of western gorillas (*Gorilla gorilla gorilla*) at Bai Hokou, Central African Republic. *International Journal of Primatology* 20:1–23.

Goodall, J. 1986. *The Chimpanzees of Gombe: Patterns of Behaviour*. Harvard University Press, Cambridge, Massachusetts, USA.

GRASP. 2005. Ranges of African great apes. Map prepared by UNEP/DEWA. Available at: www.unep.org/grasp/images/grasp-physical_map-A4.jpg [accessed 19 August 2013].

Gray, M., McNeilage, A., Fawcett, K., Robbins, M. M., Ssebide, B., Mbula, D. and P. Uwingeli. 2006. *Virunga Volcanoes Range Mountain Gorilla Census*, 2003. Joint organizers’ report. UWA/ORTPN/ICCN.

Greer, D. and Cipolletta, C. 2006. Western Gorilla Tourism: Lessons Learned from Dzanga-Sangha. *Gorilla Journal* 33:16-19.

Guschanski, K., Vigilant, L., McNeilage, A., Gray, M., Kagoda, E. and M.M. Robbins. 2009. Counting elusive animals: comparing field and genetic census of the entire mountain gorilla population of Bwindi Impenetrable National Park, Uganda. *Biological Conservation* 142:290-300.

Hall, J.S., Saltonstall, K., Inogwabini, B.I. and I. Omari. 1998. Distribution, abundance and conservation status of Grauer’s gorilla. *Oryx* 32(2):122–130.

Harcourt, A.H., Fossey, D. and J. Sabater-Pi. 1981. Demography of *Gorilla gorilla*. *Journal of Zoology*. 195:215-233.

Homsy, J. 1999. *Ape Tourism and Human Diseases: How Close Should We Get? A critical review of the rules and regulations governing park management and tourism for the wild mountain gorilla, Gorilla gorilla beringei*. International Gorilla Conservation Programme. Available at: www.igcp.org/files/ourwork/Homsy_rev.pdf [accessed 19 August 2013].

Humle, T., Boesch, C., Duvall, C., Ellis, C.M., Farmer, K.H., Herbingier, I., Blom, A. and J.F. Oates. 2008. *Pan troglodytes ssp. verus*. In: IUCN. 2010. IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011].

Huffman M.A. 1997. Current evidence for self-medication in primates: a multidisciplinary perspective. *Yearbook of Physical Anthropology* 40:171–200.

Huffman, M.A. 2001. Self-medicative behaviour in the African great apes: an evolutionary perspective into the origins of human traditional medicine. *Bioscience* 51:651–661.

Huffman, M.A. and Wrangham, R.W. 1994. Diversity of medicinal plant use by chimpanzees in the wild. In: Wrangham, R.W., McGrew, W.C., de Waal, F.B.M., et al. (eds.) *Chimpanzee Cultures*. Harvard University Press, Cambridge, Massachusetts, USA. pp. 129–148.

Huijbregts, B., De Wachter, P., Ndong Obiang, L.S. and M.E. Akou. 2003. Ebola and the decline of Gorilla (*Gorilla gorilla*) and Chimpanzee (*Pan troglodytes*) populations in Minkebe Forest, North-Eastern Gabon. *Oryx* 37:437–443.

IGCP. 2008. Strategy Document Virunga. Five year strategy (2006-2010). International Gorilla Conservation Programme.

Inskipp, T. 2005. Chimpanzee (*Pan troglodytes*). In Caldecott, J. and Miles, L. (eds.) *World Atlas of Great Apes and their Conservation*. University of California Press, Berkley, USA. pp 53- 81.

IPCC (Gitay, V., Suárez, H.A., Watson, R.T. and D.J. Dokken (eds.)) 2002. Climate change and biodiversity. Technical paper. Geneva, Switzerland. Available at: www.ipcc.ch/publications_and_data/publications_and_data_technical_papers.htm [accessed 19 August 2013].

IUCN. 2010. Red List of Threatened Species version 2010.4. Available at: .

IUCN/ITTO. 2009. Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests. IUCN, Gland, Switzerland, and International Tropical Timber Organization (ITTO), Yokohama, Japan.

Jungers, W.L. and Susman, R.L. 1984. Body size and skeletal allometry in African apes. In Susman, R.L. (ed.) *The Pygmy Chimpanzee*. Plenum Press, New York, USA.

Kalpers, J., Williamson, E.A., Robbins, M.M., McNeilage, A., Nzamurambaho, A., Lola, N. and G. Mugiri. 2003. Gorillas in the crossfire: population dynamics of the Virunga mountain gorillas over the past three decades. *Oryx* 37(3):326–337.

Kano, T. 1982. The social group of pygmy chimpanzees of Wamba. *Primates* 23(2): 171–188.

Keller, L.F. and Waller, D.M. 2002. Inbreeding effects in wild populations. *Trends in Ecology & Evolution* 17: 230–241.

Khan, A.S., Kweteminga Tshioko, F., Heymann, D.L., Le Guenno, B., Nabeth, P., Kerstie`ns, B., Fleerackers, Y., Kilmarx, P.H., Rodier, G.R., Nkuku, O., Rollin, P.E., Sanchez, A., Zaki, S.Z., Swanepoel, R., Tomori, O., Nichol, S.T., Peters, C.J., Muyembe-Tamfum, J.J. and T.G. Ksiazek. 1999. The Reemergence of Ebola Hemorrhagic Fever, Democratic Republic of the Congo. *Journal of Infectious Diseases* 179(suppl. 1):76-86.

Kemf, E. and Wilson, A.C. 1997. *Wanted Alive! Great Apes in the Wild. A 1997 WWF Species Status Report*. WWF International, Gland, Switzerland.

Köndgen, S., Köhl, H., N’Goran, P.K., Walsh, P.D., Schenk, S., Ernst, N., Biek, R., Formenty, P., Mätz-Rensing, K., Schweiger, B., Junglen, S., Ellerbrok, H., Nitsche, A., Brieese, T., Lipkin, W.I., Pauli, G., Boesch, C. and F.H. Leendertz. 2008. Pandemic human viruses cause decline of endangered great apes. *Current Biology* 18:1-5.

Kormos, R. and Boesch, C. 2002. Regional Action Plan for the Conservation of Chimpanzees in West Africa. Center for Applied Biodiversity Science, Conservation International, Washington DC.

Kuehl, H., Maisels, F., Ancrenaz, M. and E.A. Williamson. 2008. Best Practice Guidelines for Surveys and Monitoring of Great Ape Populations. IUCN-SSC Primate Specialist Group, Gland, Switzerland.

Kuehl, H.S., Nzeingui, C., Le Duc Yeno, S., Huijbregts, B., Boesch, C. and P.D. Walsh. 2009. Discriminating between village and commercial hunting of apes. *Biological Conservation* 149:1500-1506.

Lambert, J.E. and Garber, P.A. 1998. Evolutionary and ecological implications of primate seed dispersal. *American Journal of Primatology* 45(1):9–28.

Lanjouw, A. 2002. Building Partnerships in the Face of Political and Armed Crisis. IGCP report. Available at: www.igcp.org/wp-content/themes/igcp/docs/pdf/conflict_paper.pdf [accessed 19 August 2013].

Leroy, E.M., Rouquet, P., Formenty, P., Souquiere, S., Kilbourne, A., Froment, J.M., Bermejo, M., Smit, S., Karesh, W., Swanepoel, R., Zaki, S.R. and P.E. Rollin. 2004. Multiple Ebola Virus Transmission Events and Rapid Decline of Central African Wildlife. *Science* 303:387-390.

Macfie, E.J. 2007. Habituation Impact Assessment. A tool for the analysis of costs and benefits related to the potential habituation of a gorilla group for either tourism or research. Report for the International Gorilla Conservation Programme. Available at: www.igcp.org

Macfie, E.J. and Williamson, E. A. 2010. Best Practice Guidelines for Great Ape Tourism. IUCN/SSC Primate Specialist Group, Gland, Switzerland.

Marchesi, P., Marchesi, N., Fruth, B. C. and Boesch. 1995. Census and distribution of chimpanzees in Côte d’Ivoire. *Primates* 36:591–607.

McFarland, K.L. 2007. Ecology of Cross River Gorillas (*Gorilla gorilla diehli*) on Afi Mountain, Cross River State, Nigeria. Ph.D. Thesis, City University of New York, USA.

McGrew, W.C. 1992a. Tool-use by free-ranging chimpanzees: the extent of diversity. *Journal of Zoology, London* 228:689–694.

McGrew, W.C. 1992b. *Chimpanzee Material Culture*. Cambridge University Press, Cambridge, UK.

McNeilage, A. 2001. Diet and habitat use in two contrasting habitats. In: Robbins, M.M., Sicotte, P. and K.J. Stewart (eds.) *Cambridge Studies in Biological and Evolutionary Anthropology, vol. 27: Mountain Gorillas, Three Decades of Research at Karisoke*. Cambridge University Press, Cambridge, UK. pp. 1–26.

Milton, K. 2000. Quo vadis? Tactics of food search and group movement in primates and other animals. In: Boinski, S. and Garber, P.A. (eds.) *On the move: how and why animals travel in groups*. University of Chicago Press, Chicago, USA. pp. 375-417.

Minnemeyer, S. 2002. An Analysis of Access into Central Africa’s Rainforests. Global Forest Watch. K Holmes (ed.) World Resources Institute, Washington DC, USA. Available at <http://www.globalforestwatch.org/english/about/publications.htm> (12/08/03).

Morgan, B.J. and Abwe, E.E. 2006. Chimpanzees use stone hammers in Cameroon. *Current Biology* 16:16.

Morgan, D. and Sanz, C. 2007. Best Practice Guidelines for Reducing the Impact of Commercial Logging on Great Apes in Western Equatorial Africa. IUCN/SSC Primate Specialist Group, Gland, Switzerland.

Morgan, B.J., Adeleke, A., Bassey, T., Bergl, R., Dunn, A., Gonder, K., Greengrass, E., Koulagna, D.K., Mbah, G., Nicholas, A., Oates, J., Omeni, F., Saidu, Y., Sommer, V., Sunderland-Groves, J., Tiebou, J., and L. Williamson. 2011. Regional Action Plan for the Conservation of the Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*). IUCN/SSC Primate Specialist Group and Zoological Society of San Diego, CA, USA.

Muyambi, F. 2005. The impact of tourism on the behaviour of mountain gorillas. *Gorilla Journal* 30: 14-15.

Myers Thompson, J.A. 1997. The history, taxonomy and ecology of the bonobo (*Pan paniscus*) with a first description of a wild population living in a forest/savanna mosaic habitat. PhD Thesis, University of Oxford, England.

Nicholas, A., Dunn, A., Warren, Y., Bergl, R., Sunderland-Groves, J., Nkembi, L. and B. Morgan. 2009. Cross River Gorilla. In: Mittermeier et al. (eds.). *Primates in Peril: The World's 25 Most Endangered Primates 2008–2010*. IUCN/SSC Primate Specialist Group, International Primatological Society and Conservation International, Arlington, VA, USA.

Oates, J., Sunderland-Groves, J., Bergl, R., Dunn, A., Nicholas, A., Takang, E., Imong, I., Fotso, R., Nkembi, L. and E. Williamson. 2007. Regional Action Plan for the Conservation of the Cross River Gorilla (*Gorilla gorilla diehli*). IUCN/SSC Primate Specialist Group and Conservation International, Arlington, VA, USA.

Oates, J.F., Tutin, C.E.G., Humle, T., Wilson, M.L., Baillie, J.E.M., Balmforth, Z., Blom, A., Boesch, C., Cox, D., Davenport, T., Dunn, A., Dupain, J., Duvall, C., Ellis, C.M., Farmer, K.H., Gatti, S., Greengrass, E., Hart, J., Herbinger, I., Hicks, C., Hunt, K.D., Kamenya, S., Maisels, F., Mitani, J.C., Moore, J., Morgan, B.J., Morgan, D.B., Nakamura, M., Nixon, S., Plumptre, A.J., Reynolds, V., Stokes, E.J. and P.D. Walsh. 2008a. *Pan troglodytes*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Oates, J.F., Dunn, A., Greengrass, E. and B.J. Morgan. 2008b. *Pan troglodytes ssp. ellioti*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Oates, J.F., Bergl, R.A., Sunderland-Groves, J. and A. Dunn. 2008c. *Gorilla gorilla ssp. diehli*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Parnell, R.J. 2002. Group size and structure in western lowland gorillas (*Gorilla gorilla gorilla*) at Mbeli Bai, Republic of Congo. *American Journal of Primatology* 56:193–206.

Patz, J.A., Graczyk, T.K., Geller, N. and A.Y. Vittor. 2000. Effects of environmental change on emerging parasitic diseases. *International Journal for Parasitology* 30:1395-1405.

Plumptre, A.J. 1995. The effects of trampling damage by herbivores on the vegetation of the Parc National des Volcans, Rwanda. *African Journal of Ecology* 32:115–129.

Plumptre, A.J., Rose, R., Nangendo, G., Williamson, E., Didier, K., Hart, J., Mulindahabi, F., Hicks, C., Griffin, B., Ogawa, H., Nixon, S., Pintea, L., Vosper, A., McLennan, M., Amsini, F., McNeilage, A., Makana, J.R., Kanamori, M., Hernandez, A., Piel, A., Stewart, F., Moore, J., Zamma, K., Nakamura, M., Kamenya, S., Idani, G., Saka, T., Yoshikawa, M., Greer, D., Tranquilli, S., Beyers, R. and E. Bennett. 2010. Eastern Chimpanzee (*Pan troglodytes schweinfurthii*): Status Survey and Conservation Action Plan (2010-2020). IUCN, Gland, Switzerland.

Pusey, A.E., Pintea, L., Wilson, M.L., Kamenya, S. and J. Goodall. 2007. The Contribution of Long-Term Research at Gombe National Park to Chimpanzee Conservation. *Conservation Biology* 21(3):623–634.

Remis, M.J. 1994. Feeding ecology and positional behaviour of western lowland gorillas (*Gorilla gorilla gorilla*) in the Central African Republic. Ph.D. dissertation, Yale University, New Haven, Connecticut, USA.

Robbins, M.M. 1995. A demographic analysis of male life history and social structure of mountain gorillas. *Behaviour* 132(1–2):21–47.

Robbins, A.M., Robbins, M.M., Gerald-Steklis, N., and H. Dieter Steklis. 2006. Age-Related Patterns of Reproductive Success Among Female Mountain Gorillas. *American Journal of Physical Anthropology* 131:511–521.

Robbins, M. and Williamson, L. 2008. *Gorilla beringei*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Robbins, M., Gray, M., Kümpel, N., Lanjouw, A., Maisels, F., Mugisha, A., Spelman, L. and L. Williamson. 2008. *Gorilla beringei ssp. beringei*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Robbins, M., Roy, J., Wright, E., Kato, R., Kabano, P., Basabose, A., Tibenda, E., Vigilant, L., and M. Gray. 2011. Bwindi Mountain Gorilla Census 2011 – Summary of Results. Report to Uganda Wildlife Authority.

Robbins, M., Hart, J., Maisels, F., Mehlman, P., Nixon, S. and E. Williamson. 2008b. *Gorilla beringei ssp. graueri*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011]

Rogers, M.E., Voysey, B.C., McDonald, K.E., Parnell, R.J. and C.E.G. Tutin. 1998. Lowland Gorillas and Seed Dispersal: The Importance of Nest Sites. *American Journal of Primatology* 45:45–68.

Rogers, M.E., Abernethy, K., Bermejo, M., Cipolletta, C., Doran, D., McFarland, K., Nishihara, T., Remis, M. and C.E.G. Tutin. 2004. Western Gorilla Diet: A Synthesis From Six Sites. *American Journal of Primatology* 64:173–192.

Sandbrook, C. and Semple, S. 2006. The rules and the reality of mountain gorilla (*Gorilla beringei beringei*) tracking: how close do tourists get? *Oryx* 40(4):428-433.

Schneider, S.H., Semenov, S., Patwardhan, A., Burton, I., Magadza, C.H.D., Oppenheimer, M., Pittock, A.B., Rahman, A., Smith, J.B., Suárez, A. and Yamin, F. 2007. Assessing key vulnerabilities and the risk from climate change. *Climate change: impacts, adaptation and vulnerability*. In: M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.) *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK. pp.779-810.

Standford, C. 2005. Chimpanzees as Predators. In: Caldecott, J. and Miles, L. (eds.), *World Atlas of Great Apes and their Conservation*. University of California Press, Berkley, USA. pp.58-59.

Stephenson, P.J. 2002. WWF African Great Apes Programme Document. WWF, Gland, Switzerland.

Stephenson, P.J. 2007. WWF Species Action Plan: African Elephant, 2007-2011. WWF, Gland, Switzerland.

Stokes, E., Malonga, R., Rainey H. and S. Strindberg. 2008. Western lowland gorilla surveys in northern Republic of Congo, 2006-2007. Summary Scientific Report. Wildlife Conservation Society.

Susman, R.L., Badrian, N.L. and A.J. Badrian. 1980. Locomotor behaviour of *Pan paniscus* in Zaire. *American Journal of Physical Anthropology* 53:69-80.

ten Kate, K., Bishop, J., and R. Bayon. 2004. Biodiversity offsets: Views, experience, and the business case. IUCN, Gland, Switzerland and Cambridge, UK and Insight Investment, London, UK.

TCS. 2010. Press release: Wild Chimpanzee Population in Sierra Leone Found to be Double Previous Estimates. Available at: www.tacugama.com/census2010.html [accessed 19 August 2013].

TRAFFIC. 2008. Ending the trade in great apes and gibbons. In: *TRAFFIC Conservation Programme for FY09-FY12 (July 2008 – June 2012)*, p.13.

Tutin, C.E.G. 1996. Ranging and social structure of lowland gorillas in the Lope´ Reserve, Gabon. In: McGrew, W., Marchant, L and T. Nishida (eds.) *Great ape societies*. Cambridge University Press, Cambridge, UK. pp.58–70.

Tutin, C.E.G., Stokes, E., Boesch, C., Morgan, D., Sanz, C., Reed, T., Blom, A., Walsh, P., Blake, S. and R. Kormos. 2005. Regional Action Plan for the Conservation of Chimpanzees and Gorillas in Western Equatorial Africa. Conservation International, Washington DC, USA.

Tutin, C.E.G., Baillie, J.E.M., Dupain, J., Gatti, S., Maisels, F., Stokes, E.J., Morgan, D.B. and P.D. Walsh. 2008. *Pan troglodytes ssp. troglodytes*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 19 August 2013].

Varty, N., Ferriss, S., Carroll, B. and Caldecott, J. (2005). Conservation measures in play. In J. Caldecott & L. Miles (Eds.), *World Atlas of Great Apes and their Conservation*. Prepared at the UNEP World Conservation Monitoring Centre. University of California Press, Berkeley, USA. pp 242- 275.

Virunga Gorilla Census, 2010. Joint organizers report. ICCN, RDB, UWA, IGCP, MPI, DFGFI and MGVP (in prep)

Voysey, B.C., McDonald, K.E., Rogers, M.E., Tutin, C.E.G., Parnell, R.J. (1999). Gorillas and seed dispersal in the Lopé Reserve, Gabon. I: Gorilla acquisition by trees. *Journal of Tropical Ecology* 15: 39–60.

Walsh, P.D., Abernethy, K.A., Bermejo, M., Beyersk, R., De Wachter, P., Akou, M.E., Huijbregts, B., Mambounga, D.I., Toham, A.K., Kilbourn, A.M., Lahm, S.A., Latour, S., Maisels, F., Mbinak, C., Mihindouk, Y., Ndong Obiang, S., Ntsame Effa, E., Starkey, M.E., Telfer, P., Thibault, M., Tutin, C.E.G., White, L.J.T., Wilkie, D.S. (2003). Catastrophic ape decline in western equatorial Africa. *Nature* 422, 611– 614.

Walsh, P.D., Tutin, C.E.G., Oates, J.F., Baillie, J.E.M., Maisels, F., Stokes, E.J., Gatti, S., Bergl, R.A., Sunderland-Groves, J. & Dunn. A. (2008). Gorilla gorilla. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011].

Walsh, P.D., Tutin, C.E.G., Baillie, J.E.M., Maisels, F., Stokes, E.J. and S. Gatti. 2008b. Gorilla gorilla ssp. gorilla. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011].

Watts, D.P. 1984. Composition and variability of mountain gorilla diets in the central Virungas. *American Journal of Primatology* 7:323–356.

Watts, D. P. 1991. Mountain gorilla reproduction and sexual behaviour. *American Journal of Primatology* 24:211–225.

Watts, D.P. and Mitani, J.C. 2002. Hunting Behaviour of Chimpanzees at Ngogo, Kibale National Park, Uganda. *International Journal of Primatology* 23:1-28.

Watts, D.P., Mitani, J.C. and H.M. Sherrow. 2002. New cases of inter-community infanticide by male chimpanzees at Ngogo, Kibale National Park, Uganda. *Primates* 43(4):263–270.

Whiten, A. and Boesch, C. 2001. The cultures of chimpanzees. *Scientific American* 284(1):48-54.

Whiten, A., Goodall, J., McGrew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C.E.G., Wrangham, R.W. and C. Boesch. 1999. Cultures in chimpanzees. *Nature* 399:682–685.

Wilkie, D.S. 2001. Bushmeat trade in the Congo Basin. In: Beck, B., Stoinski, T.S., Hutchins, M., Maple, T.L., Norton, B., Rowan, A., Stevens, E.F., Arluke, A. (eds.) *Great Apes and Humans: The Ethics of Coexistence*. Smithsonian Institution Press, Washington DC, USA.

Wilson, M.L., Balmforth, Z., Cox, D., Davenport, T., Hart, J., Hicks, C., Hunt, K.D., Kamenya, S., Mitani, J.C., Moore, J., Nakamura, M., Nixon, S., Plumptre, A.J. and V. Reynolds. 2008. *Pan troglodytes ssp. schweinfurthii*. In: IUCN Red List of Threatened Species. Version 2010.4. Available at: www.iucnredlist.org [accessed 10 May 2011].

Woodford, M. H., Butynski, T. M., and W.B. Karesh. 2002. Habituating the great apes: the disease risks. *Oryx* 36 (2):153-160.

Wrangham, R.W., Chapman, C.A. and L.J. Chapman. 1994. Seed dispersal by forest chimpanzees in Uganda. *Journal of Tropical Ecology* 10:355–368.

Wrangham, R.W. and Peterson, D. 1997. *Demonic Males*. Bloomsbury Publishing, London, UK.

WWF. 2010. Green Hearth of Africa Initiative, Strategic Plan. Central Africa Regional Programme Office (CARPO), Yaoundé, Cameroon.

WWF. 2012. WWF Global Species Programme Strategy. WWF International, Gland, Switzerland.

Yamagiwa, J. 1999. Socioecological factors influencing population structure of gorillas and chimpanzees. *Primates* 40(1):87–104.

Yamagiwa, J., Basabose, K., Kaleme, K. and T. Yumoto. 2002. Within-group feeding competition and socioecological factors influencing social organization of gorillas in the Kahuzi-Biega National Park, Democratic Republic of Congo. In: Taylor, A.B. and Goldsmith, M. (eds.) *Cambridge Studies in Biological and Evolutionary Anthropology*, vol. 34: Gorilla Biology: a Multidisciplinary Perspective. Cambridge University Press, Cambridge, UK. pp.327–357.

Yamakoshi, G. 1998. Dietary responses to fruit scarcity of wild chimpanzees at Bossou, Guinea: possible implications for ecological importance of tool use. *American Journal of Physical Anthropology* 106(3):283–295.

ANNEX 1: CURRENT
ISSUES ON AFRICAN GREAT
APES TAXONOMY

Great apes are part of the Hominidae family, which includes four genera: gorillas (*Gorilla*), chimpanzees (*Pan*), orangutans (*Pongo*) and humans (*Homo*). As to how many species of living great apes exist, the question is still open. The controversy over great ape classification and overall changes in taxonomy is linked to the wider debate concerning species definitions, where the biological species concept (namely reproductive isolation) has been challenged by the growing body of evidence gathered by studies of evolutionary biology, investigating intraspecific diversity through DNA analysis from hairs and dung found in nest sites (Uchida, 1996).

The growing debate over the diversity within the currently defined genera and species of great apes is not the exclusive interest of the taxonomy field. In fact it also bears conservation relevance, as the identification of new subspecies and the importance of maintaining genetic variation for small and isolated populations become additional conservation challenges.

The present document refers to the classification most commonly used and endorsed by the IUCN Primate Specialist Group (Table 4). However, according to some researchers, the current definition may include distinctly different subspecies or, alternatively, may distinguish between subspecies which differ only lightly.

Table 4. African great apes taxonomy (Groves 2001)

Family	Genus	Species	Subspecies (common names)
Hominidae	Gorilla	<i>Gorilla gorilla</i>	<i>Gorilla gorilla gorilla</i> (Western lowland gorilla)
			<i>Gorilla gorilla diehli</i> (Cross River gorilla)
		<i>Gorilla beringei</i>	<i>Gorilla beringei beringei</i> (Mountain gorilla)
			<i>Gorilla beringei graueri</i> (Eastern lowland gorilla)
		<i>Pan troglodytes</i>	<i>Pan troglodytes troglodytes</i> (Central chimpanzee)
			<i>Pan troglodytes verus</i> (Western chimpanzee)
			<i>Pan troglodytes schweinfurthii</i> (Eastern chimpanzee)
			<i>Pan troglodytes ellioti</i> (Nigeria-Cameroon chimpanzee)

Below are summarized the main recent debates concerning chimpanzee and gorilla taxonomy.

Chimpanzees

Based on mitochondrial DNA work, Gonder et al. (2006) found evidence that a major phylogeographic break between chimpanzee lineages occurs near the Sanaga River in central Cameroon and suggest the need for a reclassification of chimpanzees. According to the results of this team, there are only two major lineages of chimpanzees: one in central and eastern Africa and one in western Africa. They suggest that “chimpanzees

in western equatorial Africa and eastern Africa may share a closer relationship to each other than either group does to chimpanzees from Upper Guinea” (Gonder et al. 2006). Additionally, in a more recent study, Gonder et al. (2011) found that the Nigeria-Cameroon chimpanzees (*P. t. ellioti*) of the Gulf of Guinea region are genetically significantly different from those in Upper Guinea in western Africa (*P. t. verus*) and those in equatorial Africa (*P. t. troglodytes* and *P. t. schweinfurthii*).

Fischer et al. (2006) argue that differences between chimpanzee populations are too small to warrant sub-specific designations, based on recent nuclear DNA work, as well as considerations of the overall similarity in behaviour and morphology of the proposed subspecies.

Following recent research by Oates et al. (2008), the Cameroon-Nigeria chimpanzee scientific name (*P. t. vellerosus*) was changed to *P. t. ellioti* to more accurately reflect the historical collection and identification of chimpanzee skulls of this subspecies. The name vellerosus (“the hairy chimpanzee”) came from a skull thought to have been collected in the region around Mount Cameroon; however, recent investigation found that the specimen came from Gabon and therefore it belongs to the subspecies of *P. t. troglodytes*. The Cameroon-Nigeria chimpanzee was first identified by Elliot in 1913, hence the proposed change in name.

Gorillas:

The Bwindi population of mountain gorillas has been the subject of intensive debate. Its distinct morphology, ecology and behaviour have led some researchers to suggest it should be considered a third subspecies (Sarmiento et al. 1996), distinct from the population of the Virunga volcanoes. Others argue that the evidence is not well supported (Stanford 2001) and that mitochondrial DNA studies could not distinguish the two populations of mountain gorilla (Garner and Ryder 1996).

In 2003, observation of a gorilla group in the Ebo Forest in Littoral province of Cameroon made the news (Morgan et al. 2003). The gorillas of this area are geographically intermediate between the two extant populations of western gorillas and the Cross River gorillas. While it is still not possible to assign the new gorilla population to either subspecies, measurements from a single Ebo gorilla skull indicate this may be a relict population of a previously more widespread population living north of the Sanaga River (Groves 2005). There are probably fewer than 25 Ebo gorillas surviving, their range covering about 25km² in the north west of what should soon become Ebo National Park (Morgan 2010).

The Cross River gorilla was initially described as a new species (*Gorilla diehli*; Matschie 1904); later, in 1929, it was joined to the other western gorillas in the subspecies *Gorilla gorilla gorilla* (Coolidge 1929). However, Sarmiento and Oates (2000) found significant differences in craniometric parameters, with the Cross River population exhibiting smaller dentitions, smaller palates, smaller cranial vaults and shorter skulls than the western gorilla population. This together with their distinctiveness and geographic isolation led to their classification as a distinct subspecies: *Gorilla gorilla diehli*.

Hofreiter et al. (2003) studied rumours of the existence of an additional gorilla population in Central Africa which:

have inspired recent unsuccessful field expeditions in search of the “mystery ape” termed *Gorilla gorilla uellensis*. [...] However, the sole evidence for the existence of these gorillas is three skulls and one mandible brought to the Royal Museum for Central Africa (Tervuren, Belgium) in 1898. We determined a mitochondrial DNA sequence from one of these specimens and compared it to sequences from other gorillas. Contrary to expectations, the sequence obtained did not exhibit the phylogenetic distinctiveness typical of a representative of a peripheral isolated

population. Rather, the results suggest a scenario in which the museum specimens did not originally derive from the northern Congo, but were brought from the area of current distribution of western gorillas to that location; the subsequent discovery and collection of the specimens there gave rise to the false inference of a local gorilla population.

References for Annex I

Fischer, A., Pollack, J., Thalmann, O., and B. Nickel. 2006. Demographic History and Genetic Differentiation in Apes. *Current Biology* 16:1133-1138.

Garner, K.J. and Ryder, O.A. 1996. Mitochondrial DNA diversity in gorillas. *Molecular and Phylogenetic and Evolution* 6(1):39-48.

Gonder, M.K., Disotell, T.R. and J.F. Oates. 2006. New genetic evidence on the evolution of chimpanzee populations, and implications for taxonomy. *International Journal of Primatology* 27:1103-1127.

Gonder, M.K., Locatelli, S., Ghobrial, L., Mitchell, M.W., Kujawski, J.T., Lankester, F.J., Steward, C.B. and S.D. Tishkoff. 2011. Evidence from Cameroon reveals differences in the genetic structure and histories of chimpanzee populations. Available at: www.pnas.org/cgi/doi/10.1073/pnas.1015422108 [accessed 19 August 2013]

Groves, C.P. 2001. *Primate taxonomy*. Smithsonian Institution Press, Washington DC, USA.

Groves, C.P. 2005. A Note on the Affinities of the Ebo Forest Gorilla. *Gorilla Journal* 31:19-21.

Hofreiter, M., Siedel, H., Neer, W. and L. Vigilant. 2003. Mitochondrial DNA Sequence From an Enigmatic Gorilla Population (*Gorilla gorilla uellensis*). *American Journal of Physical Anthropology* 121:361–368.

Morgan, B.J., Wild, C. and A. Ekobo. 2003. Newly discovered gorilla population in the Ebo Forest, Littoral Province, Cameroon. *International Journal of Primatology* 24: 1129–1137.

Morgan B.J. 2010. The gorillas of the Ebo forest, Cameroon: Continuing the struggle for survival of a relict population. *Gorilla Journal*, 40:16-18.

Oates, J.F., Groves, C.P. and P.D. Jenkins. 2009. The type locality of Pan troglodytes vellerosus (Gray, 1862), and implications for the nomenclature of West African chimpanzees. *Primates* 50:78-80.

Sarmiento, E.E., Butynski, T.M. and J. Kalina. 1996. Gorillas of Bwindi-Impenetrable Forest and the Virunga Volcanoes: taxonomic implications of morphological and ecological differences. *American Journal of Primatology* 40:1–21.

Sarmiento, E.E. and Oates, J.F. 2000. The Cross River gorillas: a distinct subspecies Gorilla gorilla diehli Matschie 1904. *American Museum Novitates*: 3304:1-55.

Stanford, C.R. 2001. The subspecies concept in primatology: The case of mountain gorillas. *Primates* 42(4):309- 318.

Uchida, A. 1996. What we don’t know about great ape variation. *Trends in Ecology & Evolution II:4*.

ANNEX II AFGAP
ACTION PLAN
2002-2007: OBJECTIVES
AND TARGETS

Great apes are part of the Hominidae family, which includes four genera: gorillas (Gorilla), chimpanzees (Pan), orangutans (Pongo) and humans (Homo). As to how many species of living great apes exist, the question is still open. The controversy over great ape classification and overall changes in taxonomy is linked to the wider debate concerning species definitions, where the biological species concept (namely reproductive isolation) has been challenged by the growing body of evidence gathered by studies of evolutionary biology, investigating intraspecific diversity through DNA analysis from hairs and dung found in nest sites (Uchida, 1996).

The growing debate over the diversity within the currently defined genera and species of great apes is not the exclusive interest of the taxonomy field. In fact it also bears conservation relevance, as the identification of new subspecies and the importance of maintaining genetic variation for small and isolated populations become additional conservation challenges.

The present document refers to the classification most commonly used and endorsed by the IUCN Primate Specialist Group (Table I). However, according to some researchers, the current definition may include distinctly different subspecies or, alternatively, may distinguish between subspecies which differ only lightly.

Objective 1	(Protection and management): To conserve viable populations of African great apes through improved protection and management.
Target 1	In situ protection of at least two populations each of western gorilla, eastern gorilla, robust chimpanzee and bonobo improved by 2006.
Objective 2	Objective 2 (Community support): To increase public support for great ape conservation by providing incentives for great ape conservation.
Target 2	Conservation initiatives of mutual benefit to communities and great apes established in eight sites by 2006.
Objective 3	(Policy): To eliminate unsustainable forest practices (including illegal killing of apes) by establishing relevant conservation policies and laws.
Target 3	Provisions directly relating to great ape conservation explicitly incorporated in at least five national and three sub-regional policies and laws by 2006.
Objective 4	(Capacity building): To increase capacity within range states to conserve and manage great apes.
Target 4	Capacity to conserve great apes and their habitats strengthened in at least 10 range states by 2006.
Objective 5	(Trade): To reduce illegal national and international trade in great apes and great ape products.
Target 5	Measures to control illegal trade in great apes and great ape products enhanced in at least five range states.
Objective 6	(Awareness): To conserve African great apes by increasing awareness among policy-makers and the general public.
Target 6	A communications strategy to raise awareness of the need to conserve Africa’s great apes developed and implemented by 2006.

ANNEX III: SYNERGIES AMONG THE AFGAP SAP, THE AFRICAN ELEPHANT PROGRAMME AND THE GREEN HEART OF AFRICA GLOBAL INITIATIVE

The Congo Basin is home to three major WWF initiatives – the Green Heart of Africa Global Initiative (GHoA GI), the African Great Apes Programme (AfGAP) and the African Elephant Programme (AEP). The common priorities across these three WWF initiatives present a unique opportunity to combine WWF’s capacity, expertise and experience to turn the tide and save the Congo Basin’s unique biodiversity for the benefit of the Congo Basin people, and future generations across the world.

The three goals of the GHoA GI are also mirrored in the AEP and AfGAP SAPs:

GHoA Goal 1: Biodiversity	By 2020, 15 million hectares of new protected areas are gazetted and all PAs are effectively managed and sustainably funded in priority landscapes. WWF’s strategy is to prioritize conservation efforts in the largest intact natural areas (landscapes) which are particularly rich in biodiversity, and contain thriving animal populations. [See Box 1 for a list of landscapes which are priorities for all three WWF initiatives].
GHoA Goal 2: Biodiversity	By 2020, the rate of net deforestation and associated CO2 emissions are reduced to zero, and bushmeat trade and wildlife off-take are reduced to sustainable levels from priority landscapes. Apes and elephants are entirely dependent on healthy forest ecosystems for their survival. This goal aims at reducing the current rate of deforestation in the Congo Basin, and reducing poaching and wildlife trade.
GHoA Goal 3: Footprint	By 2020, at least 50% of logging concessions (estimated at 25 million ha) are credibly certified, and all major oil and gas, mining, hydropower, agro industries and associated infrastructure projects which impact priority landscapes implement social and environmental standards that minimize their direct and indirect impacts (on biodiversity and livelihoods). Forestry, mining and infrastructure projects not only cause destruction of critical forest habitats for apes and elephants, but also allow human access into previously inaccessible areas, facilitating poaching and subsequent transport of poached wildlife to markets. In addition, all these industries have the potential to increase the exposure of great apes and elephants to humans, increasing the risk of disease transmission and potentially dangerous human-animal conflict.

Commercial hunting and fishing (illegal bushmeat trade) is the only threat within the GHoA Strategic Plan rated as “very high” priority. This is also the highest priority threat to both African great apes and African elephants in the Congo Basin. Across Central Africa, hunting of great apes is, in the majority of known cases, the product of a widespread uncontrolled commercial bushmeat trade (Fa et al. 2002; Tutin et al. 2005; Wilkie 2001). Once the meat reaches urban centres it is usually channelled to supply high-end demand for ape meat, considered to be prestigious amongst the wealthy elite. Elephants are killed primarily for their ivory, which is sold in unregulated markets within Central Africa, and exported to supply markets in Asia and elsewhere (Bennet 2011; Wasser et al. 2008; CITES Secretariat 2012). Illegal hunting is increasingly placing the livelihoods of rural communities in jeopardy as their traditional lands are invaded by more powerful external poachers, and as wildlife populations, their principal source of protein, dwindle; overexploitation as a result of subsistence hunting by increasing rural populations exacerbates the problem. Organized trafficking networks also represent a significant threat to regional, national and local security. They operate outside the law, have links to illegal arms trafficking, and provide funding to sustain armed conflicts in several parts of the region.

Governance/law enforcement. The hunting, trading and consumption of apes and elephants is almost universally illegal in all Congo Basin countries³. However, poaching continues due to a crippling lack of enforcement of national and international laws,

3. One exception is trophy hunting of elephants which is legal in some Central African countries.



A western lowland gorilla at Bai Hokou, Dzanga-Sangha Protected Areas, CAR.

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coupled with an ineffective judiciary system. In a recent global review of the illegal ivory trade (Milliken et al. 2009), several Congo Basin countries (DRC, Congo, Gabon, Equatorial Guinea and CAR) were classed as having “no effective law enforcement”, meaning that virtually all illicit ivory from the region leaves the country without being seized. When arrests are made, they rarely result in prosecution, with offenders quickly released and able to continue illegal activities. When arrests are followed up with appropriate prosecution, sentences are minimal and not sufficient to act as a deterrent to trade in apes and ivory, which offers enormous financial profits.

A major priority of all three WWF initiatives in the Congo Basin is to significantly **improve law enforcement**. Improving law enforcement is not only the best chance we have of saving African great apes and elephants, but will also create the enabling environment necessary for sustainable development and effective management of the Congo Basin’s natural resources.

Table 5: Priority landscapes for the GHoA GI, AfGAP and AEP

Priority landscapes		
GHoA GI	AfGAP	AEP
Campo Ma’an forest landscape (7,000km2 spanning Equatorial Guinea and Cameroon)	✓ Central chimpanzees and western lowland gorillas	✓
Gamba-Conkouati forest landscape (35, 073km2 spanning Gabon and Republic of Congo)	✓ Central chimpanzees and western lowland gorillas	✓
Dja-Minkebe-Odzala Tri-national forest landscape (TRIDOM) (191,541km2 spanning Cameroon, Gabon, Republic of Congo)	✓ Central chimpanzees and western lowland gorillas	✓ Core of largest Central African population of forest elephants
Sangha tri-national forest landscape (43,936km2 spanning Cameroon, CAR, Republic of Congo)	✓ Central chimpanzees and western lowland gorillas	✓
Lac Tele – Lac Tumba Swamp forest landscape (130,710km2 spanning DRC, Republic of Congo)	✓ Bonobos	✓
Salonga – Lukenie – Sankuru forest landscape (104,205km2, DRC)	✓ Bonobos	✓
Maiko – Tayna – Kahuzi-Biega forest landscape (105,736km2, DRC)	✓ Eastern chimpanzees, eastern lowland gorilla	✓
Virungas focal area (17,403km2 – 99% of the landscape is in DRC (remainder in Rwanda)	✓ Mountain gorilla	
Oban-Korup forest landscape (9,670km2 spanning Cameroon and Nigeria)	✓ Cross River gorilla	✓

References for Annex III

Bennett, E.L. 2011. Another inconvenient truth: the failure of enforcement systems to save charismatic species. Fauna & Flora International. *Oryx*. 45:476-479.

CITES Secretariat. 2012. Status of elephant populations, levels of illegal killing and the trade in ivory: a report to the CITES standing committee. SC62 Doc. 46.1 (Rev. 1) Annex.

Fa, J.E., Peres, C.A. and J. Meeuwig. 2002. Bushmeat exploitation in tropical forests: an intercontinental comparison. *Conservation Biology* 16:232-237.

Milliken, T., Burn, R.W. and L. Sangalakula. 2009. The Elephant Trade Information System (ETIS) and the illicit trade in ivory. TRAFFIC East/Southern Africa. CITES document E15-44.01A. Available at: www.cites.org/common/cop/15/doc/E15-44-01A.pdf [accessed 19 August 2013].

Tutin, C.E.G., Stokes, E., Boesch, C., Morgan, D., Sanz, C., Reed, T., Blom, A., Walsh, P., Blake, S. and R. Kormos. 2005. Regional Action Plan for the Conservation of Chimpanzees and Gorillas in Western Equatorial Africa. Conservation International, Washington DC, USA.

Wasser, S.K., Clark, W.J., Drori, O., Kisamo, E.S., Mailand, C., Mutayoba, B. and M. Stephens. 2008. Combating the Illegal Trade in African Elephant Ivory with DNA Forensics. *Conservation Biology* 22(4):1065–1071.

Wilkie, D.S. 2001. Bushmeat trade in the Congo Basin. In: Beck, B., Stoinski, T.S., Hutchins, M., Maple, T.L., Norton, B., Rowan, A., Stevens, E.F. and A. Arluke (eds.). *Great Apes and Humans: The Ethics of Coexistence*. Smithsonian Institution Press, Washington DC, USA.

Table 6. Monitoring

Information needs	Main indicators	Methods/sources	Location	Timeframe	From who	Baseline data	Desired results
Goal: By 2020, the populations of African great apes living in the AfGAP priority landscapes ¹ will be stable, relative to 2007-2014 baseline survey data.							
What is the status of great apes in the selected areas within the priority landscapes? Are the threats affecting African great apes decline being effectively addressed?	Great ape population trends (direct counts, nest encounter rates) Encounter rates of illegal activities in selected PAs (trails, snares, gunshots, poachers, illegal trade, illegal logging, farming, etc.)	Population surveys Population counts (mountain gorillas, some Cross River gorilla populations)	In at least one protected area within each of the 12 priority landscapes	2010-2014 baseline data collected Trends assessed every three years	Wildlife departments Project executants Research institutions	Some baseline population data available for some sites in most priority landscapes, but data quality variable	By addressing the threats, the populations of great apes in priority areas in 2020 will be stable, as compared to the 2010-2014 baseline data
Objective 1 (Protection and law enforcement): By 2017, at least one protected area within each priority landscape benefits from improved protection, as evidenced by at least one the following: a 25% decrease of illegal activities within the protected area; a 25% increase in the apprehension of illegal traffickers (such as hunters, dealers, traders, but also illegal miners, loggers etc.); a 30% increase in appropriate follow-up of judiciary processes for great ape and other wildlife-related infractions.							
What is the impact of law enforcement on poaching and other illegal activities within selected protected areas?	Trends of great apes and illegal activities in PAs Trends of offenders apprehended, prosecuted and serving sentences	Surveys in PAs Reports of law enforcement units Follow-up through the judiciary departments	In at least one protected area within each of the 12 priority landscapes	Annually	Wildlife departments Project executants Judiciary departments	Some baseline data from surveys on illegal activities, no. of apprehensions and anti-poaching effort available, very limited to non-existent data on judiciary follow-up (sentences handed down, served, fines paid etc.)	• 25% decrease in poaching and evidence of other illegal activities within selected protected areas • 25% increase in the apprehension of illegal traffickers, dealers, traders, but also illegal miners, loggers etc. • 30% increase in cases being brought to justice and serving the sentences
Objective 2 (Management): By 2017, the management of at least one protected area within each priority landscape is improved by the adoption and implementation of locally developed, updated management plans and/or other land-use planning tools.							
Are the selected areas being managed effectively?	Great ape population trends; updated documents (management plans and land-use planning tools) Monitoring of indicators identified in management plans No. of extractive companies engaged in and complying with sustainable practices	Surveys in PAs Reports of law enforcement units Follow-up through the judiciary departments	In at least one protected area within each of the 12 priority landscapes	Annually	Wildlife departments Project executants Judiciary departments	Some baseline data from surveys on illegal activities, no. of apprehensions and anti-poaching effort available, very limited to non-existent data on judiciary follow-up (sentences handed down, served, fines paid etc.)	• 25% decrease in poaching and evidence of other illegal activities within selected protected areas • 25% increase in the apprehension of illegal traffickers, dealers, traders, but also illegal miners, loggers etc. • 30% increase in cases being brought to justice and serving the sentences

¹ AfGAP priority landscapes cover two populations of western lowland gorilla, bonobo, eastern and central chimpanzee, and one population of Cross River gorilla, eastern lowland gorilla, mountain gorilla, west African chimpanzee and Nigeria/Cameroon chimpanzee. Each landscape includes at least one protected area.

Table 6. Monitoring. Continued

Information needs	Main indicators	Methods/sources	Location	Timeframe	From who	Baseline data	Desired results
	No. of corridors secured and trans-boundary protected area management initiatives operational						
Objective 3 (Policy and industry engagement): By 2017, African great ape conservation is improved in at least six range countries by the effective enforcement of wildlife legislation and other related policies (including those relating to international conventions such as CITES, CBD, CMS); the revision and (when appropriate) strengthening of relevant legislation; and an increase of at least 30% in the proportion of exploitation operators (logging and mineral extraction companies) which are adhering to and implementing best practices and WWF-supported certification schemes.							
How effective is existing legislation in ensuring the protection of great apes? Do they need strengthening?	Policies reviewed, amended, implemented Law enforcement trends (of wildlife and environment related crimes) No. of exploitation operators adhering to and implementing best practices or WWF-supported certification schemes (and no. of those who don't)	Government ministries Independent evaluations of range countries' adherence to conventions, treaties and agreements Partnership with and monitoring of exploitation operators	In at least six range countries	Assessed every year	Programme Offices Government ministries Partner NGOs Convention secretariats Partner companies	Text of legislation, conventions, treaties, etc. Very limited and not necessarily reliable data on compliance to policies	• The existing body of legislation, conventions, treaties and agreements is effectively enforced and a system of accountability is put in place • 30% of exploitation operators (logging and mineral extraction companies) are adhering to and implementing best practices and WWF-supported certification schemes
Objective 4 (Community support and awareness): By 2017, communities within at least six priority landscapes receive support to promote economically sustainable management strategies for community development which have minimal adverse impact on great apes and their environment, reduce human/ape conflicts and increase awareness and support for the conservation of great apes and their environment.							
What is the level of public awareness of, and support to, great ape conservation and the legislation protecting them? Are the selected management strategies benefiting local populations while reducing adverse impact on great apes and their environment?	Analysis of local threats to, and attitudinal surveys towards great apes Behavioural changes (eg. consumption and market availability) % of population (within the different targets) reached by awareness campaigns Tangible benefits to communities	Information and awareness campaigns Environmental education programmes in schools Media transmission of conservation messages Execution of management plans Project reports	As defined in the communication strategy document Community support around at least eight selected areas within priority landscapes	As defined in the communication strategy document Community support assessed yearly	As defined in the communication strategy document Project executants PA managers Partner NGOs	Baseline data must be collected at onset of activities	• Increase awareness of, and support to, conservation and wildlife laws • Change in behaviour with decrease of demand for protected species and bushmeat in general • Increased participation of civil society in natural resource management and protection • Local communities surrounding eight protected areas within priority landscapes derive direct benefits from management practices aimed at promoting rural development, with minimal adverse impact on the

Table 6. Monitoring. Continued

Information needs	Main indicators	Methods/sources	Location	Timeframe	From who	Baseline data	Desired results
	(including health, education, poverty alleviation, employment, limited impact resource exploitation practices) No. of people reached by awareness campaigns						great apes and their environment
Objective 5 (Monitoring and research): By 2017, the size of great ape populations in at least one protected area within each priority landscape is estimated, the main threats affecting them are known, data is regularly collected to assess population trends and results are available for informed conservation decision-making; results from at least four research projects in topics critical to great ape conservation, such as disease management, tourism impact, bio-monitoring, population dynamics and monitoring illegal killing and trade, are integrated into conservation strategic planning.							
What tools do we have, or can be developed to prevent the spread of Ebola? What is the impact of tourism on the gorilla groups and their environment? What is the impact of poaching and illegal trade on the great ape populations within selected areas? What is the size of great ape populations within selected areas? What are the population trends over time?	Estimates of great ape populations, densities, distributions and trends; distribution and trends of human activities in great ape range No. of WWF projects in great ape areas contributing data to the APES database Scientific publications No. of national researchers focusing on GA conservation	Research projects Data collection integrated in the implementation of conservation programmes (including, but not limited to, bio-monitoring and anti-poaching) Surveys	In at least one protected area within each of the 12 priority landscapes	Research projects to be executed during 2010-2014 Surveys every three years	Research institutions Project executants Wildlife departments (and other departments according to research field)	Baseline data variable according to research question Baseline population data available for sites in all landscapes, but data quality variable	- Results from studies orient conservation strategies to the benefit of the protection of great apes and their environment - Reliable population estimates available - Results from surveys used to assess impact of conservation strategies and orient activities
Objective 6 (Habitat preservation): By 2017, at least one population of each great ape species will benefit from an increase in habitat range under protection through the creation of new protected areas and/or through improved management and protection of critical corridor areas around and between priority sites, including high conservation value forests (HCVFs), certified logging concessions and conservation of areas of unique biological interest to great apes.							
The protection of which areas will significantly increase the number of great	Size of the area benefiting from improved protection and upgraded	Effective in situ protection (anti-poaching)	One area within each of the 12 priority landscapes	Starting latest by 2012	Forest and wildlife departments	Area receiving conservation effort	Great ape habitat under protection is increased

Table 6. Monitoring. Continued

Information needs	Main indicators	Methods/sources	Location	Timeframe	From who	Baseline data	Desired results
apes under protection?	protection status Size of corridors established and secured No. of concessions adhering to certification schemes and best practices Distribution and trends of great apes in corridors and forestry concessions	Curb of illegal exploitation of natural resources and the associated traffic of illegal products Forest regeneration (when needed in corridors)			Judiciary departments PA managers Project executants Private forestry (and other extractive practices) operators		

African great apes strategy in numbers

100%
RECYCLED

880

The number of mountain gorillas today, 200 more than just a decade ago.

4

There are 4 recognized species of African great ape: eastern gorillas, western gorilla, bonobos and chimpanzees.



1

The number of African great ape species, of which there are 9 in total, presently experiencing a population increase.

80%

The likely population reduction of western gorillas, over the next three generations, if current trends continue.



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