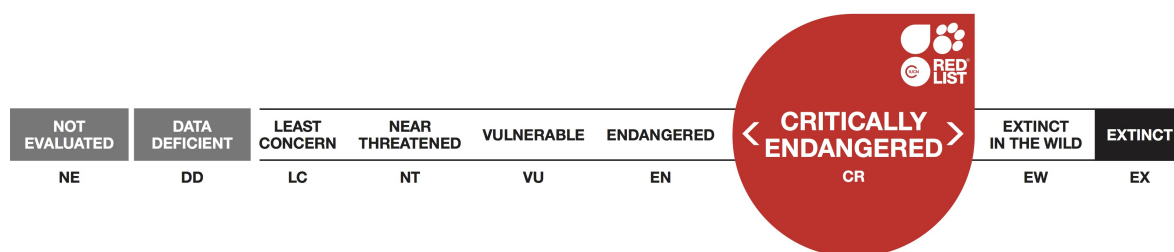


Gorilla gorilla, Western Gorilla

Assessment by: Maisels, F., Bergl, R.A. & Williamson, E.A.



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Citation: Maisels, F., Bergl, R.A. & Williamson, E.A. 2016. *Gorilla gorilla*. The IUCN Red List of Threatened Species 2016: e.T9404A102330408. <http://dx.doi.org/10.2305/IUCN.UK.2016-2.RLTS.T9404A17963949.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Primates	Hominidae

Taxon Name: *Gorilla gorilla* (Savage, 1847)

Synonym(s):

- *Troglodytes gorilla* Savage, 1847

Infra-specific Taxa Assessed:

- [*Gorilla gorilla ssp. diehli*](#)
- [*Gorilla gorilla ssp. gorilla*](#)

Common Name(s):

- English: Western Gorilla, Lowland Gorilla
- French: Gorille de l'Ouest
- Spanish: Gorila Occidental

Taxonomic Source(s):

Mittermeier, R.A., Rylands, A.B. and Wilson D.E. 2013. *Handbook of the Mammals of the World: Volume 3 Primates*. Lynx Edicions, Barcelona.

Taxonomic Notes:

The Western Gorilla (*Gorilla gorilla*) has two recognized subspecies: the Western Lowland Gorilla (*Gorilla gorilla gorilla*) and the Cross River Gorilla (*Gorilla gorilla diehli*: Sarmiento and Oates 2000, Groves 2001). Genetic data suggest that the two subspecies of Western Gorilla diverged approximately 18,000 years ago (Thalmann *et al.* 2011) and that the Cross River Gorilla population can be clearly differentiated from Western Lowland Gorillas (Prado-Martinez *et al.* 2013). The taxonomic status of the Gorilla populations in Ebo (Cameroon) awaits clarification; however, 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).

Assessment Information

Red List Category & Criteria: Critically Endangered A4bcde [ver 3.1](#)

Year Published: 2016

Date Assessed: April 1, 2016

Justification:

Gorilla gorilla has a large geographic range, covering over 700,000 km². The size of the population is currently being evaluated, but thought to be in the order of a few hundred thousand (Strindberg *et al.* in prep). Only a very small number of Western Gorillas are the *G. g. diehli* subspecies, therefore this rationale focuses on the *G. g. gorilla* subspecies. The country of Gabon lost over half its Gorilla population between 1983 and 2000 (Walsh *et al.* 2003). More recent population declines have been

estimated using a predictive model that incorporated survey data collected between 2003 and 2013 across the entire range of Western Lowland Gorillas. The results reveal an 18.75% decline between 2005 and 2013, corresponding to an annual loss of ~2.56% (Strindberg *et al.* in prep). These population decreases were driven by poaching and disease (*Ebolavirus*) outbreaks.

Despite their abundance and wide geographic range, Western Gorillas qualify as Critically Endangered under criterion A: a population reduction of more than 80% over three generations (one generation is ~22 years). This listing is based on ongoing population losses due to illegal hunting, disease and habitat loss: poaching is intensifying with the expansion of access routes into forests and Zaire *Ebolavirus* remains a highly significant threat. At a conservative rate of reduction (2.56% per year rather than 4%, calculated from Walsh *et al.* 2003), the reduction in the Western Gorilla population is predicted to exceed 80% over three generations (i.e., 66 years, 2005–2071). Illegal hunting has not ceased despite intense anti-poaching efforts, and the threat of *Ebolavirus* has not been removed. In addition, the scale of habitat conversion to industrial agriculture will increase, and the effects of climate change will become more evident. *Gorilla gorilla* thus qualifies as Critically Endangered (A4bcde).

For further information about this species, see [Supplementary Material](#).

Previously Published Red List Assessments

2008 – Critically Endangered (CR)

<http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T9404A12983787.en>

2007 – Critically Endangered (CR)

2000 – Endangered (EN)

1996 – Endangered (EN)

1994 – Vulnerable (V)

1990 – Vulnerable (V)

1988 – Vulnerable (V)

1988 – Vulnerable (V)

1986 – Vulnerable (V)

Geographic Range

Range Description:

Gorilla gorilla is found in Angola (Cabinda enclave), Cameroon, Central African Republic (CAR), mainland Equatorial Guinea (Rio Muni), Gabon, Nigeria and Republic of Congo. Until recently, the core population had an almost continuous distribution from southern CAR to the Congo River and west to the coast. Rivers are the primary geographic barrier for this taxon, followed by habitat fragmentation: the two subspecies are separated by a major river (the Sanaga), and Western Lowland Gorillas are divided into subpopulations by other major rivers in the region (Anthony *et al.* 2007, Fünfstück *et al.* 2014, Fünfstück and Vigilant 2015).

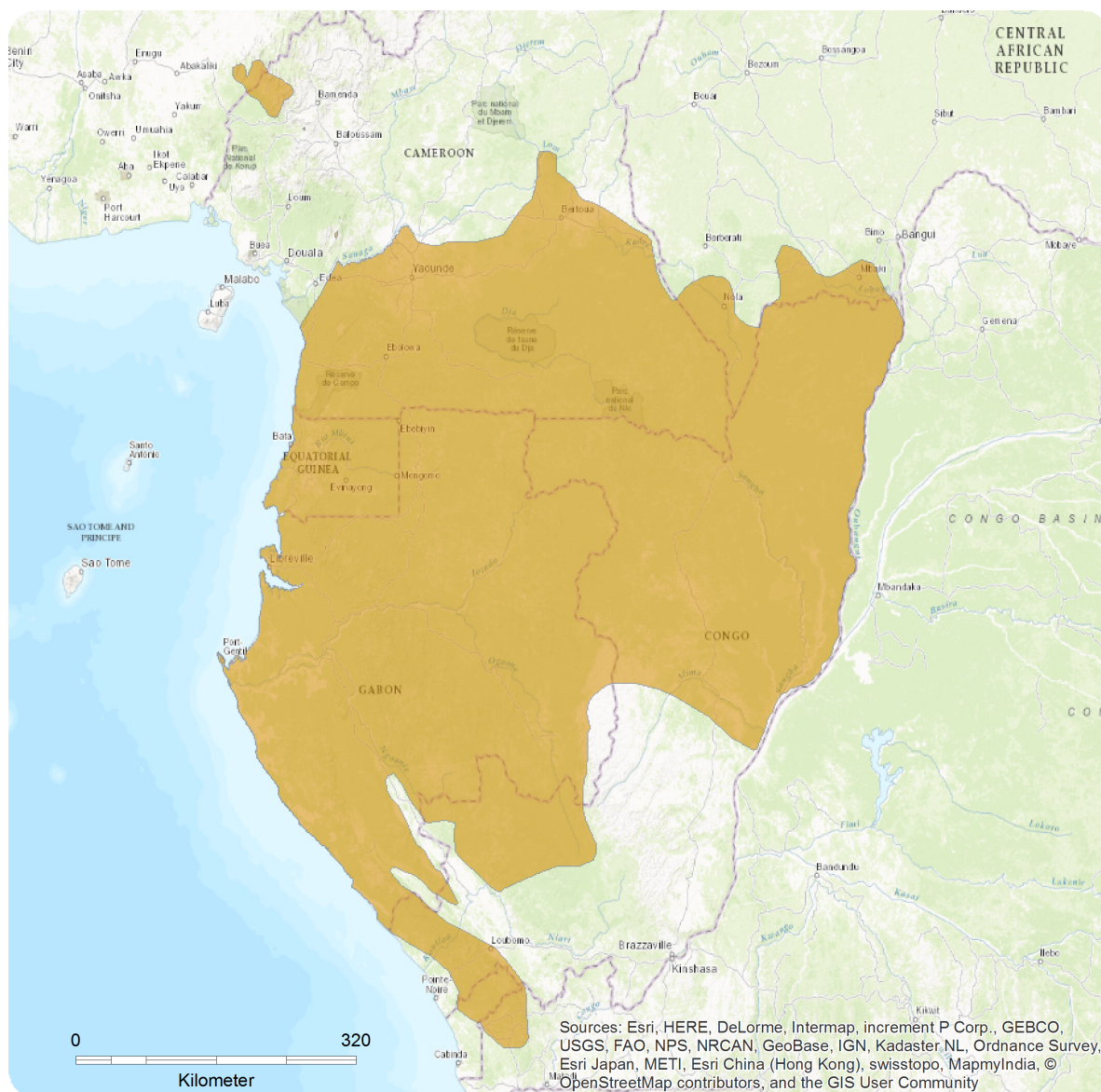
The northwestern limit of the western lowland subspecies distribution is the Sanaga River in Cameroon; the northern limit is the forest-savanna boundary to a maximum of roughly 6°N; the eastern limit is the Ubangi River; the Congo River south of its confluence with the Ubangi then becomes the southeastern and southern limits all the way to the coast. Small outlying populations of the Cross River subspecies remain on the Nigeria-Cameroon border at the headwaters of the Cross River and in the proposed Ebo National Park in Cameroon. Most Western Gorillas are found below 500 m asl, but those living on mountains occasionally reach elevations of 1,900 m asl.

Country Occurrence:

Native: Angola (Angola, Cabinda); Cameroon; Central African Republic; Congo; Equatorial Guinea (Equatorial Guinea (mainland)); Gabon; Nigeria

Distribution Map

Gorilla gorilla

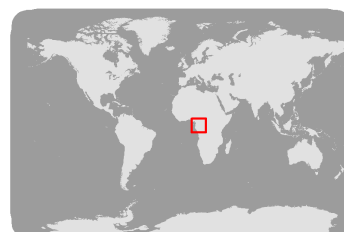


Range

Extant (resident)

Compiled by:

UNEP-WCMC and IUCN (International Union for Conservation of Nature)



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

Estimates of Gorilla population size are usually made using a standard index of abundance: night nest abundance and distribution, sometimes combined with predictive modelling.

G. g. diehli

Intensive surveys carried out in 1990–2005 suggested that approximately 250–300 Cross River Gorillas persist in a forested area of roughly 12,000 km² (Bergl 2006, Oates *et al.* 2007). Monitoring of the Gorillas at multiple sites and genetic analysis at select locations (Arandjelovic *et al.* 2015) has confirmed the small size of the subspecies population, while also documenting a larger geographic range than previously recorded (Bergl *et al.* 2012, Dunn *et al.* 2014). Cross River Gorillas occur in at least geographically distinct 11 localities (*ibid.*) Genetic evidence suggests that these subpopulations have had reproductive contact in the recent past (Bergl and Vigilant 2007); however, field surveys paired with remote sensing analysis reveal that forest corridors connecting subpopulations may no longer be functional as routes for dispersal (Imong *et al.* 2014).

G. g. gorilla

Western Lowland Gorillas are found in almost all protected areas and many of the logging concessions in their range; they can persist at high densities in well-managed logging concessions (Morgan *et al.* 2013). Extensive surveys carried out since the mid-2000s suggested a total population in the areas surveyed in the order of 150,000–250,000 (Williamson *et al.* 2013, Sop *et al.* 2015). Their numbers declined by 18.75% between 2005 and 2013, corresponding to an annual loss of approximately 2.56% (Strindberg *et al.* in prep). The current Western Lowland Gorilla population size is being evaluated, but is in the order of a few hundred thousand (*ibid.*)

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Western Gorillas are diurnal and semi-terrestrial. They build nests to sleep in every night, usually on the ground but sometimes in trees. They are social and live in stable, cohesive groups composed of one “silverback” adult male, several adult females and their offspring. Gorillas are not territorial and group ranges overlap extensively.

G. g. diehli

Cross River Gorillas inhabit forests largely restricted to rough terrain in remote areas, although they occasionally use lowland areas between hills (Oates *et al.* 2003, Bergl and Vigilant 2007). This distribution appears to be directly related to greater levels of human activity (especially poaching) in lowland areas, rather than selection of areas that provide preferred foods (Imong *et al.* 2013, Sawyer and Brashares 2013). Group sizes range from 2 to 20 individuals and home ranges may be as large as 30 km² (McFarland 2007, Sunderland-Groves *et al.* 2009). The highly-seasonal nature of the Cross River Gorillas’ habitat (more markedly seasonal than that of other Gorilla populations) likely contributes to grouping and ranging patterns. Their diet reflects this seasonality, with terrestrial herbs and bark eaten as staples throughout the year, and fruit consumed during periods of seasonal abundance (McFarland 2007, De Vere *et al.* 2011, Etiendem and Tagg 2013, Sawyer and Brashares 2013).

G. g. gorilla

Western Lowland Gorillas occur in both swamp and *terra firma* lowland forests throughout Western Equatorial Africa. They are especially common where ground vegetation is dominated by monocotyledonous plants such as *Haumania liebrechtsiana* and *Megaphrynium macrostachyum* (Rainey *et al.* 2009). Staple and fallback foods are pith of *Aframomum* spp. and leaves and shoots of the Marantaceae family, whereas fruit consumption varies greatly between seasons (Rogers *et al.* 2004). Some populations spend hours feeding on aquatic herbs in bāis and swamps. Social ants and termites are the only animal matter deliberately ingested. Group size averages 10, but is occasionally over 20 individuals, and annual home ranges are usually 10–25 km² (Williamson and Butynski 2013).

Life History (as summarised in Williamson *et al.* 2013): Male Western Gorillas take 18 years to reach full maturity, and females take *ca*10 years. Length of the reproductive cycle is unknown. There is no birth season. Mean length of gestation is 256 days in captive Gorillas. Infant mortality up to three years of age is 22–65%. Infants suckle for 4–5 years, causing lactational amenorrhea in the mother. Interbirth intervals are 4–6 years. Western Gorillas appear to reproduce more slowly than Eastern Gorillas (*G. beringei*). Maximum life span is unknown, but likely to be *ca* 40 years. Generation time is estimated to be 22 years (see Appendix I in the supplementary material).

For further information about this species, see [Supplementary Material](#).

Systems: Terrestrial

Use and Trade

Gorillas are completely protected by national and international laws in all countries of their range, and it is, therefore, illegal to kill, capture or trade in live Gorillas or their body parts.

Threats (see Appendix for additional information)

The two subspecies of Western Gorilla face similar threats, but to varying degrees in different regions.

- **Poaching** - Despite the fact that all killing, capture or consumption of great apes is illegal, hunting for bushmeat is the primary driver of Western Gorilla decline. Current offtake levels are unsustainable – even legally-protected areas suffer high levels of poaching. The remaining population of Cross River Gorillas is small and fragmented, which puts each subpopulation at particular risk from poaching. While Gorillas do not generally appear to be targeted by hunters, it is estimated that opportunistic hunting removes at least 1–3 Cross River Gorillas from the population each year. Additionally, snares targeting other species may trap Gorillas, causing injury or death. Until the mid-1990s, much of the Western Lowland Gorilla's range included vast, roadless blocks of forest that were extremely difficult to access, where human population densities were very low and Gorilla densities high. In the last quarter century, however, almost all unprotected *terra firma* forest in this region has been allocated as logging concessions (Global Forest Watch 2016). This means that much of the once-remote, inaccessible forest is now covered by a network of logging roads (Laporte *et al.* 2007), which gives easy access to both hunters entering the forest and traffickers taking consignments of bushmeat (and ivory) out of the forest to distant destinations – often towns and cities where meat fetches high prices. Throughout Central Africa, mining permits for prospecting or resource extraction are being issued over an increasingly large surface area. As well as direct removal of Gorilla habitat, depending on the type of extraction, mining

leads to very high rates of human immigration and the creation of yet more access roads, which are used for poaching (e.g., Edwards *et al.* 2014). The region's governance is typically poor (Transparency International 2016); the weak law enforcement and corruption that enable poaching are evident in ivory trafficking (Bennett 2014), but also widespread elsewhere (Bour *et al.* 2013). In addition, huge road projects that will substantially fragment Gorilla habitat are currently underway (Laurance *et al.* 2015). The ease and speed of transport is now orders of magnitude higher than before the creation of such access roads, and hunting pressures are much higher. Across their range, Gorilla densities are lowest near roads, except where forest guards operate control points or roadblocks (Strindberg *et al.* in prep). In addition, human populations in these once remote areas have grown, as people migrate to the employment opportunities offered by logging companies (Wilkie *et al.* 2000, Poulsen *et al.* 2009).

- **Disease** - The second major driver of Western Lowland Gorilla decline is infectious disease, specifically Ebola virus disease (EVD). Surveys carried out from the 1980s to the present day show that there were a series of massive great ape die-offs in a large, mostly-intact forested area straddling the border between northeastern Gabon and northwestern Congo, which includes several national parks and logging concessions (Walsh *et al.* 2003; Maisels *et al.* 2004, 2013). Walsh *et al.* (2008) estimated that three quarters of Western Lowland Gorillas in six protected areas affected by *Ebolavirus* were lost between 1995 and 2000. Typical mortality rate during the worst disease outbreaks was 95% (Bermejo *et al.* 2006, Caillaud *et al.* 2006). In protected areas, populations hit by disease began to recover within a decade (e.g., Genton *et al.* 2012); however, total recovery would take 75–131 years in the absence of poaching, which is an unlikely scenario (Ryan and Walsh 2011). Ebola virus has already been detected to the east of the Mambili River, a major river barrier between Odzala-Kokoua National Park and the Sangha River (Reed *et al.* 2014). Although rivers and forest fragmentation seem to present a partial barrier to the spread of Ebola, large numbers of Gorillas could be wiped out in a short space of time, as transmission between individuals is rapid and large areas can be affected by a single outbreak (Walsh *et al.* 2007, 2009). The small size of the Cross River population means it is also highly vulnerable to infectious disease. *Ebolavirus* has not been reported in the Cross River Gorillas, but their close proximity to dense human populations and livestock heightens the risks of disease transmission (Dunn *et al.* 2014).

- **Habitat degradation and destruction** - Habitat loss is emerging as a major threat to Western Gorillas. As oil-palm plantations in Asia reach capacity, Africa is becoming the new frontier for this crop, offering excellent economic prospects in countries with appropriate rainfall, soil and temperatures (Rival and Lavang 2014). Unfortunately, such areas coincide with good Gorilla habitat: 73.8% of the Western Lowland Gorilla's range is considered suitable for oil palm (Wich *et al.* 2014). The recent expansion of industrial-scale mineral extraction and the creation of open-pit mines are of great concern (Edwards *et al.* 2014, Lanjouw 2014), and also lead to the establishment of development corridors, which can be several kilometres wide and add to areas of "lost forest" (Laurance *et al.* 2015). There is a disconnect between the various bodies responsible for land-use planning in the realms of conservation, mining and agriculture in all Western Gorilla range states except Gabon. Consequently, there is increasing competition for land between long-term conservation needs and immediate financial gain as governments explore the potential of clearing natural habitat in favour of economic development. Without careful and immediate land-use planning that involves cooperation between the government bodies responsible for protected areas and wildlife on one hand, and economic and agricultural development on the other, large areas of Western Lowland Gorilla habitat could be cleared within a few decades. The lack of effective protected area management throughout much of the Cross River Gorilla's range combined with the lack of protected status for much of the Gorillas' habitat in Cameroon, threatens the future availability of habitat suitable for the population. Conversion of forest for agriculture and grazing is occurring rapidly in many parts of the Gorillas' range and the largest protected

areas in which Cross River Gorillas occur contain enclaves of human settlements whose farmlands have spread beyond their legal boundaries. Expansion of these settlements and associated development of access routes in the form of roads and bridges inside the protected areas exacerbate subdivision of the Cross River Gorilla population. In both Cameroon and Nigeria, the construction and improvement of roads outside protected areas also threatens to increase subdivision of Gorilla populations through habitat disturbance and intensification of forest resource extraction. Increasing access will also exacerbate poaching pressure. While most habitat loss in the region is the result of small-scale agriculture, commercial logging and industrial agriculture (e.g., for oil palm) are also impending threats.

- **Climate change** - Climate change will affect both subspecies of Western Gorilla, as it is already thought to be affecting the Central African tropical moist forests (Lewis *et al.* 2013). Although the likely impacts of global climate change are not yet known, some predictions suggest a drying of this region with potentially negative consequences for forest ecology, such as changes in fruit and flower phenology, forest productivity and increased vulnerability to fire, and even forest retreat (James *et al.* 2013). Seasonal changes in precipitation and temperature, and weather extremes are likely ongoing and set to continue (Lovett 2015). Negative impacts on great apes have already been predicted (Lehmann *et al.* 2010), particularly along the coast (Korstjens *et al.* 2010). Climate change is the least likely factor for which effective action for great apes and for African tropical forests in general can be taken in a timely manner. Climate talks in 2015 resulted in international cooperative agreement between most of the world's nations regarding the need for action; however, the task of reversing, or even flattening current temperature trends will be extremely challenging.

- For more details, see the two *Gorilla gorilla* subspecies assessments.

Conservation Actions (see Appendix for additional information)

National and international laws controlling hunting or capture of Gorillas exist in all habitat countries, but enforcement of protective legislation is inconsistent or lacking throughout much of the species' range. *Gorilla gorilla* is listed under Appendix I of CITES and in Class A of the African Convention.

Only ~22% of Western Lowland Gorillas live inside protected areas, which cover ~14% of their geographic range (Strindberg *et al.* in prep). A further 20% are found in FSC-certified logging concessions, adding up to 8% of the range (Strindberg *et al.* in prep). Although forest guards work in many protected areas and in the well-managed logging concessions, 58% of Western Lowland Gorillas and 78% of their range are unprotected and highly vulnerable to poachers.

The Cross River Gorilla population is small and fragmented and their habitat is surrounded by some of the most densely populated human settlements in Africa. Approximately 30% of Cross River Gorillas occur outside of protected areas and many important habitat corridors between subpopulations exist as ungazetted land. The recent creation of new protected areas in Cameroon combined with existing protected areas in Nigeria, provides the legal framework for habitat protection and the control of hunting. However, effective management of these reserves remains a challenge. Illegal activities, including poaching, occur in all the region's protected areas. Resources, equipment and training, in addition to proper oversight are needed for these areas to operate effectively.

Targeted conservation action plans have been produced for both Cross River Gorillas (Oates *et al.* 2007, Dunn *et al.* 2014) and Western Lowland Gorillas (Tutin *et al.* 2005, IUCN 2014). A series of recommendations have been outlined, which can be broadly encapsulated as:

- An increase in effective law enforcement throughout the region, not only in protected areas, but also in logging concessions and unprotected forests. Law enforcement needs to be supported by updated regulations and sanctions.
- Effective, coordinated land-use planning to avoid the clearing of intact Gorilla habitat to establish industrial plantations, for oil palm in particular (IUCN SSC Primate Specialist Group 2014). Industrial extraction of other natural resources, namely timber and minerals, should be included in a holistic, spatially-explicit approach. Such planning needs to be done at both national and regional levels. Several of the most important areas for Gorilla conservation are transboundary, and thus fall within the remit of national agencies from two or three countries.
- Awareness raising among all sectors that deal with land and the protection of natural resources: law enforcement and judiciary; protected area authorities; mining, logging and agricultural industries; local communities and tour operators. This outreach effort should include specific information on minimising human impacts, such as preventing transmission of human diseases to great apes. Recommendations for logging companies regarding management practices that are compatible with great ape conservation (Morgan and Sanz 2007, Morgan *et al.* 2013) can be downloaded here: http://www.primate-sg.org/best_practice_logging
- Further research into ways of mitigating the spread and virulence of *Ebolavirus*, such as administering vaccines that are non-detrimental to the target species (great apes) or other species that may come into contact with the vaccine, and that protect a sufficiently large and geographically appropriate proportion of the great ape population to form barriers against its spread. IUCN guidelines on great apes and disease (Gilardi *et al.* 2015) are available here: http://www.primate-sg.org/best_practice_disease
- Implement standardised monitoring of law enforcement effort and effectiveness, of Gorilla abundance and of great ape health, particularly with respect to *Ebolavirus*. A standardised tool for law enforcement monitoring (SMART: <http://www.smartconservationsoftware.org>) is already in use at many sites; standard methods for surveying and monitoring great ape populations that facilitate more accurate and precise monitoring of changes in abundance have been in use for about a decade (Kühl *et al.* 2008 http://www.primate-sg.org/best_practice_surveys); and non-invasive diagnosis of a range of pathogens is now possible, for example, detection of *Ebolavirus* in faeces (Reed *et al.* 2014).
- Specifically for Cross River Gorillas, the key conservation need for their long-term survival is allowing the population to expand. Since significant areas of unoccupied Gorilla habitat remain across the landscape, population growth is feasible if levels of hunting and other human activities can be reduced. Maintenance (or re-establishment) of habitat connectivity between areas currently occupied by Gorillas is essential for future population expansion.

Maintaining well-protected areas of forest will be key to maintaining Gorilla populations in the long term, and this can only be done through the conservation strategies detailed in the action plans. These are presented in greater detail in the action plans than is possible here. The documents can be downloaded at: http://www.primate-sg.org/action_plans

Credits

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Citation

Maisels, F., Bergl, R.A. & Williamson, E.A. 2016. *Gorilla gorilla*. *The IUCN Red List of Threatened Species* 2016: e.T9404A102330408. <http://dx.doi.org/10.2305/IUCN.UK.2016-2.RLTS.T9404A17963949.en>

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External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.9. Forest - Subtropical/Tropical Moist Montane	Resident	Suitable	Yes
1. Forest -> 1.8. Forest - Subtropical/Tropical Swamp	Resident	Suitable	Yes
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	Resident	Suitable	Yes

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.3. Indirect ecosystem effects		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.1. Shifting agriculture	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.2. Species disturbance		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
3. Energy production & mining -> 3.2. Mining & quarrying	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
4. Transportation & service corridors -> 4.1. Roads & railroads	Ongoing	Minority (50%)	Slow, significant declines	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		

5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing	Majority (50-90%)	Very rapid declines	High impact: 8
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.4. Unintentional effects: (large scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other		
8. Invasive and other problematic species, genes & diseases -> 8.5. Viral/prion-induced diseases -> 8.5.1. Unspecified species	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		
8. Invasive and other problematic species, genes & diseases -> 8.5. Viral/prion-induced diseases -> 8.5.2. Named species	Ongoing	Minority (50%)	Very rapid declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.6. Skewed sex ratios 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success		

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: Yes
Systematic monitoring scheme: No

Conservation Actions in Place
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Area based regional management plan: Yes
In-Place Species Management
Harvest management plan: No
In-Place Education
Subject to recent education and awareness programmes: Yes
Included in international legislation: Yes
Subject to any international management/trade controls: Yes

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.2. Species recovery
4. Education & awareness -> 4.1. Formal education
4. Education & awareness -> 4.2. Training
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.3. Private sector standards & codes
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.5. Threats
1. Research -> 1.6. Actions
3. Monitoring -> 3.1. Population trends

Research Needed
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Lower elevation limit (m): 0
Upper elevation limit (m): 1900
Population
Population severely fragmented: No
Habitats and Ecology
Generation Length (years): 22
Movement patterns: Not a Migrant