



**GRASP**  
GREAT APES SURVIVAL  
PARTNERSHIP

# Ebola & Great Apes

**Ebola is a major threat to the  
survival of African apes**

There are direct links between Ebola outbreaks in humans and the contact with infected bushmeat from gorillas and chimpanzees. In the latest outbreak in West Africa, Ebola claimed more than 11,000 lives, but the disease has also decimated great ape populations during previous outbreaks in Central Africa. What are the best strategies for approaching zoonotic diseases like Ebola to keep both humans and great apes safe?

# WHAT is Ebola?

Ebola Virus Disease, formerly known as Ebola Haemorrhagic Fever, is a highly acute, severe, and lethal disease that can affect humans, chimpanzees, and gorillas. It was discovered in 1976 in the Democratic Republic of Congo and is a **Filovirus**, a kind of RNA virus that is 50-100 times smaller than bacteria.

- The initial symptoms of Ebola can include a sudden fever, intense weakness, muscle pain and a sore throat, according to the World Health Organization (WHO). Subsequent stages include vomiting, diarrhoea and, in some cases, both internal and external bleeding.
- Though it is believed to be carried in bat populations, the natural reservoir of Ebola is unknown. A **reservoir** is the long-term host of a disease, and these hosts often do not contract the disease or do not die from it.
- The virus is transmitted to people from wild animals through the consumption and handling of wild meats, also known as **bushmeat**, and spreads in the human population via human-to-human transmission through contact with bodily fluids.
- The average Ebola case fatality rate is around 50%, though case fatality rates have varied from 25% to 90%. As of 2016, Ebola has in total infected ca. 30,000 people in more than 20 outbreaks, that have occurred across the tropical belt of Africa, and has killed almost 15,000 people.



“The likelihood that these viruses will continue to emerge unpredictably in tropical Africa highlights the necessity to protect apes from the severe impact of Ebola and to reduce human contact to infected wildlife sources in order to save human lives.





## Impacts on Great Apes

**Great apes are so similar to humans that diseases that can impact one species can also impact the other. Ebola is no different, as chimpanzee and gorilla populations have shown.**

Ebola outbreaks in Gabon and Republic of Congo in the mid-1990s killed more than 90 percent of gorillas and chimpanzees in some areas, and additional outbreaks in these countries from 2000-2005 killed thousands of great apes. A smaller outbreak in chimpanzees also occurred in Côte d'Ivoire in 1994.



## The Role of Bushmeat

**Although not all human Ebola outbreaks can be linked to deaths in great apes, it is clear that contact with great ape bushmeat is a major risk factor for exposure to Ebola.**

This epidemiologically and laboratory-confirmed transmission pathway is a reminder that hunting animals that could be infected can increase the risk of human outbreaks, through eating, scavenging, or butchering.



## Great Apes as Predictors

**The results from the GRASP report indicate that mapping great apes already exposed to Ebola could help to predict future outbreaks in human populations.**

Public health officials could benefit from the lead time in their preparations for possible human exposure. The Great Apes Survival Partnership (GRASP) has worked closely with its scientific community to utilize this intrinsic epidemiological connection.



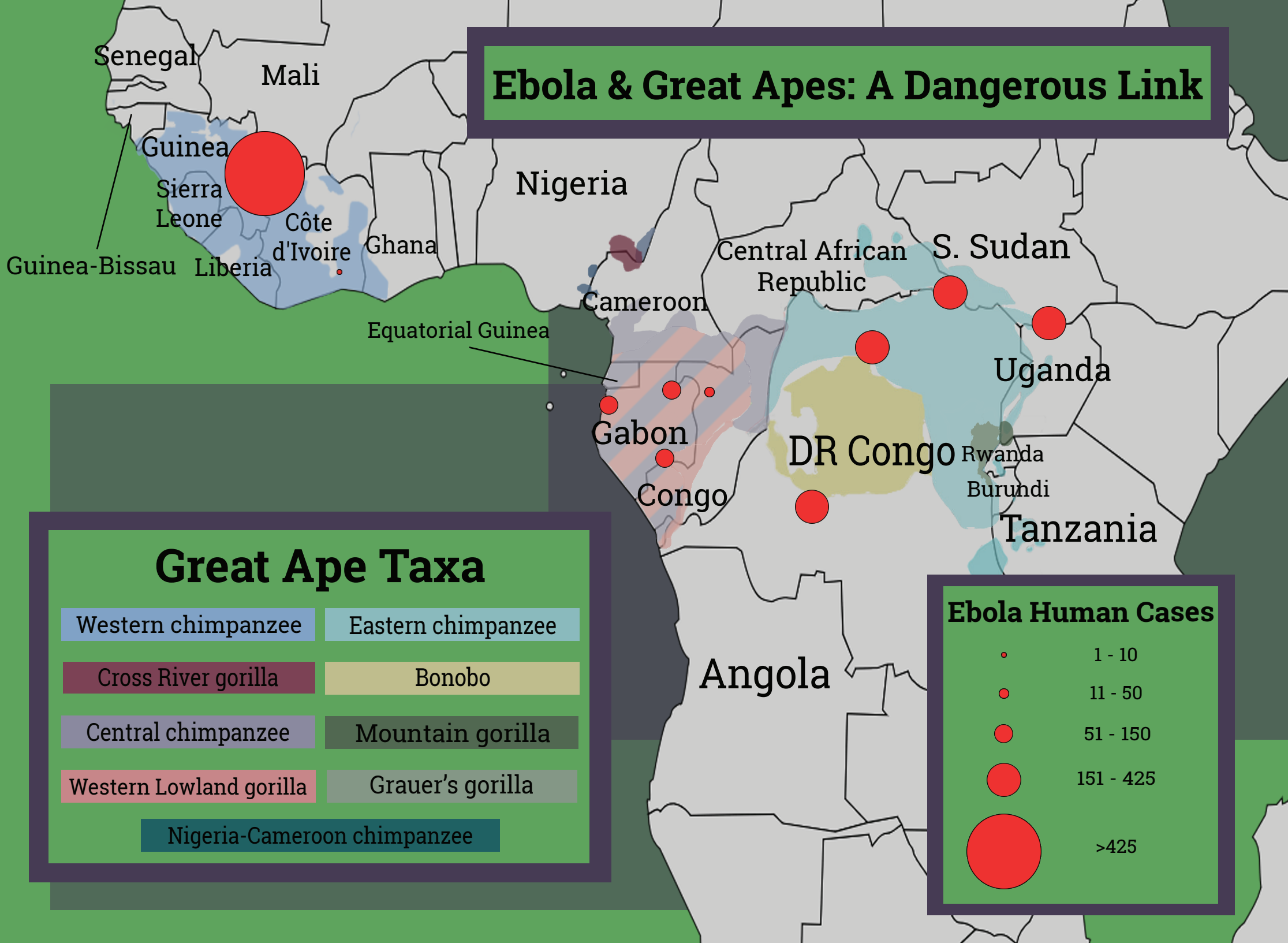
## The Next Ebola

**Ebola is just one of many diseases that has crossed between the great apes and humans. As development pushes human populations deeper in the forests, more diseases are likely to emerge.**

It becomes important to increase awareness of the great apes and to preserve their habitats even in the wake of human population expansion. Community health is also a cornerstone of conservation in biodiversity hotspots.



# Ebola & Great Apes: A Dangerous Link



## Great Ape Taxa

Western chimpanzee

Eastern chimpanzee

Cross River gorilla

Bonobo

Central chimpanzee

Mountain gorilla

Western Lowland gorilla

Grauer's gorilla

Nigeria-Cameroon chimpanzee

## Ebola Human Cases

• 1 - 10

• 11 - 50

• 51 - 150

• 151 - 425

• >425



A photograph of a gorilla sitting in a lush green forest. The gorilla is the central focus, looking towards the left. The background is filled with dense green foliage and trees, creating a natural and serene environment. The lighting is bright, suggesting a sunny day in a tropical or subtropical forest.

## Ebola is a stark reminder that our increased interactions with nature have consequences

GRASP takes the issues surrounding the Ebola virus very seriously. Past outbreaks in Central and West Africa have shown a clear link between the occurrence of the disease and human interactions with the gorillas and chimpanzees of those regions, but great apes are also highly susceptible to the disease. The GRASP Scientific Commission and several GRASP partners lend expert advice on this topic, and GRASP continues to monitor the situation and liaise with key stakeholders to ensure that the role of great apes is taken into account within UN Ebola strategies.

The frequency of outbreaks will likely rise, given the increased interaction between humans and great apes in the wake of human population growth and expansion into previously uninhabited forests. Under the leadership of expert Ebola researcher Dr. Siv Aina Leendertz, GRASP conducted a strategic review of the relationship between Ebola in great ape and human populations. This scientific assessment of Ebola will help craft GRASP's policies going forward on not just Ebola but other potentially threatening zoonotic diseases.



## Ebola & Great Apes: The Numbers

- It will take more than 130 years for the gorilla populations, that experienced 95% mortality rate, to recover.

- Gabon and Congo, areas that are very vulnerable to Ebola outbreaks, host 80% of world's gorilla population.





Medical therapies such as vaccination have been used, or considered for use, in great apes for decades. Great apes have been treated for diseases resulting from their contact with humans, and small-scale vaccinations have occurred in habituated populations to prevent human-borne diseases, such as measles.

A vaccination programme for Ebola seems straightforward, but the problem lies within the elusive nature of great apes and the difficult habitats in which they live. Though the 2016 GRASP report found that vaccination might help to ensure the survival of the great apes against threats like Ebola, most great apes in Africa are not habituated. Unknown variables of unhabituated populations make vaccination a real challenge, particularly considering population sizes and location-restricted access to the great apes for necessary monitoring and follow up. Furthermore, many vaccination strategies would necessitate feeding wild great apes foreign foods, such as bananas, a practice that is considered unhealthy.

Is **VACCINATION**  
the **BEST**  
**APPROACH?**



Possibly the most promising control strategy in great apes is vaccination. Further inter-disciplinary discussions regarding this topic are required.

Dr. Siv Aina Leendertz

In the last decade, research efforts have progressed in the development of a number of vaccine types. A crisis situation, even the 2014-2015 outbreak in West Africa, does not justify bypassing the need to address any vaccine's safety considerations. Potential vaccination of great apes would therefore only be applicable within a longer-term strategy to protect ape populations in vulnerable areas.





[www.un-grasp.org](http://www.un-grasp.org)

The Great Apes Survival Partnership (GRASP) is a unique alliance of over 100 national governments, conservation organizations, research institutions, United Nations agencies and private companies, committed to ensuring the long-term survival of chimpanzees, gorillas, bonobos and orangutans and their habitats in Africa and Asia.