



**GREATER VIRUNGA**  
TRANSBOUNDARY COLLABORATION



# GREATER VIRUNGA LANDSCAPE

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## ANNUAL CONSERVATION STATUS REPORT 2015



*Unique Diversities and Partnerships  
Our Natural Heritage*

## ABOUT THE GVTC

The Greater Virunga Transboundary Collaboration (GVTC) is a framework of programs, plans and activities designed to conserve the cross-border network of protected areas in the Greater Virunga Landscape (GVL). Recognizing that the protection of the GVL depends on concrete actions and results, the Democratic Republic of Congo, Rwanda and Uganda joined forces and signed the Greater Virunga Transboundary Treaty in October 2015. The GVTC Treaty process and implementation has largely been supported with funding from the Rwandan Embassy and by the Kingdom of the Netherlands and other development partners.

Through the Greater Virunga Transboundary Treaty, the GVTC is mandated to conserve the GVL for current and future generations. Conservation of the GVL is dependent on the partnership between the Democratic Republic of Congo, Rwanda and Uganda and their agencies working together with local and international conservation organizations and development partners, civil society organizations, and communities. The Annual Conservation Strategic Report captures the success of these partnerships in conserving the GVL.

The ACSR was developed through a stakeholder participatory approach and reviewed by a Technical Working Group (TWG). The Stakeholder consultative meeting and the TWG meetings were facilitated by Dr. Katherine Warner of the Netherlands Embassy in Kampala and Byamukama James of GVTC. The main process stakeholders were the Institut Congolais pour la Conservation de la Nature (ICCN), Rwanda Development Board (RDB), Uganda Wildlife Authority (UWA), Local Governments around the Protected areas representing Communities, Wild Conservation Society (WCS), World Wide Fund for Nature, International Gorilla Conservation Programme (IGCP), Institute of Tropical Forest Conservation (ITFC), University of Ruhengeri (INES), Volcanic Observatory of Goma (OVG), Bwindi Mgahinga Conservation Trust (BMCT) and Gorilla Doctors, Albertine Rift Conservation Society (ARCOS). The TWG comprised of James Byamukama, Katherine Warner, Anna Behm Masozera, Fidele Ruzigandekwe, Simon Nampindo, Robert Bitariho, Jean Claude, Abel Musana, Susan Namuli, Ismael Ochen Ochen and Elyse Ukobizaba.

The key partner contributors to this edition of the Annual Conservation Status Report were ICCN, RDB, UWA, WCS,, IGCP, and ITFC.



With funding support from the Netherlands Government



Kingdom of the Netherlands

# Foreword

**The Greater Virunga Landscape (GVL), commonly known as the Central Albertine Rift, is one of the world's most diverse fragile eco-regions with endangered wildlife and fauna such as the mountain gorilla and the iconic elephant, hippopotamus and chimpanzee as well as rare birds and plants.**

Reflecting its regional and international importance as home to the wonderful endangered species, the GVL includes three World Heritage sites, one Ramsar sites and two Biosphere Reserves.

Despite its importance, the GVL faces many threats such as insecurity, poverty, poor infrastructure development, climate change, demographic growth, oil and gas exploration and exploitation, which may result in the fragmentation of the landscape. Considering these risks for transboundary impacts associated with the human footprint in this landscape, the GVTC Treaty was signed by DRC, Rwanda and Uganda in 2015. Its ratification is a good foundation for undertaking actions that tackle the threats to the GVL.

Successful conservation of the GVL will require government institutions, regional and international communities, public and private sectors, donors and development partners, to work together in conserving the Greater Virunga Landscape now and for future generations.

In order for the GVTC to measure its success in the conservation of the GVL will prepare an Annual Conservation Status Report (ACSR). The purpose of the ACSR is to provide up-to-date information on key indicators of conservation in the GVL. The ACSR will assist the GVTC and its partners to monitor and evaluate their conservation efforts and strengthen conservation activities in the GVL.

We are grateful to those who have supported this first ACSR edition 2015. We anticipate that future ACSRs will progressively become richer in data and analysis and will play an important role in the conservation of the GVL.

A handwritten signature in black ink, appearing to read 'Dr. Muamba Tshibusu Georges', is positioned above the name and title of the signatory.

**Dr. Muamba Tshibusu Georges**  
The Executive Secretary





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OIL WORKSHOP AT IHUSI



# Executive Summary

**This report is the first of its kind for the Annual Conservation Status Reports (ACSRs).** The ACSR are intended to demonstrate the result of the combined effort of the key stakeholders in the strategic transboundary collaborative management and measure the effects of these efforts. This initial ACSR focuses on the following key objectives:

- **To provide a coherent narrative** about the current context and the changes that are influencing wildlife conservation and tourism development in GVL;
- **To offer a baseline** of the conservation indicators, measures of improved conservation upon which future indicator analysis will be based;
- **To identify gaps in baseline data and information** relevant for the context and conservation measures for the ACSR reports.

Both the conservation and context indicators used in this report were developed through a stakeholder participatory approach and reviewed by a TWG set up by the stakeholders in January 2016. While the selected four conservation indicators are aligned to Aichi Biodiversity indicators, they were reframed to specifically address GVL conservation issues. Scientifically credible, legitimate and relevant data will be collected from well-defined sources and effective methods employed for interpretation of this data for this and other subsequent reports.

The subsequent ACSR will measure conservation improvement based on the 2015 conservation indicator benchmarks through the collective efforts of key stakeholders in GVL. In particular, it will show the trends from the current baseline and what the GVTC partners will do to improve conservation. The baseline data gaps that have been identified in this ACSR will be addressed in the 2016 ACSR due in June 2017.



CREDIT: BYAMUKAMA JAMES, GVTC

# The Greater Virunga Landscape: Unique Diversity

Located at the heart of Africa, the Greater Virunga Landscape (GVL) rests along the shared boundaries of the Democratic Republic of Congo, Rwanda, and Uganda (figure 1). Forming the divide between the Congo Basin and the Nile Basin, the GVL

is an important water tower of Africa. GVL is among the world's most biologically diverse fragile eco-regions and a home to surviving rare and endangered wildlife and fauna.

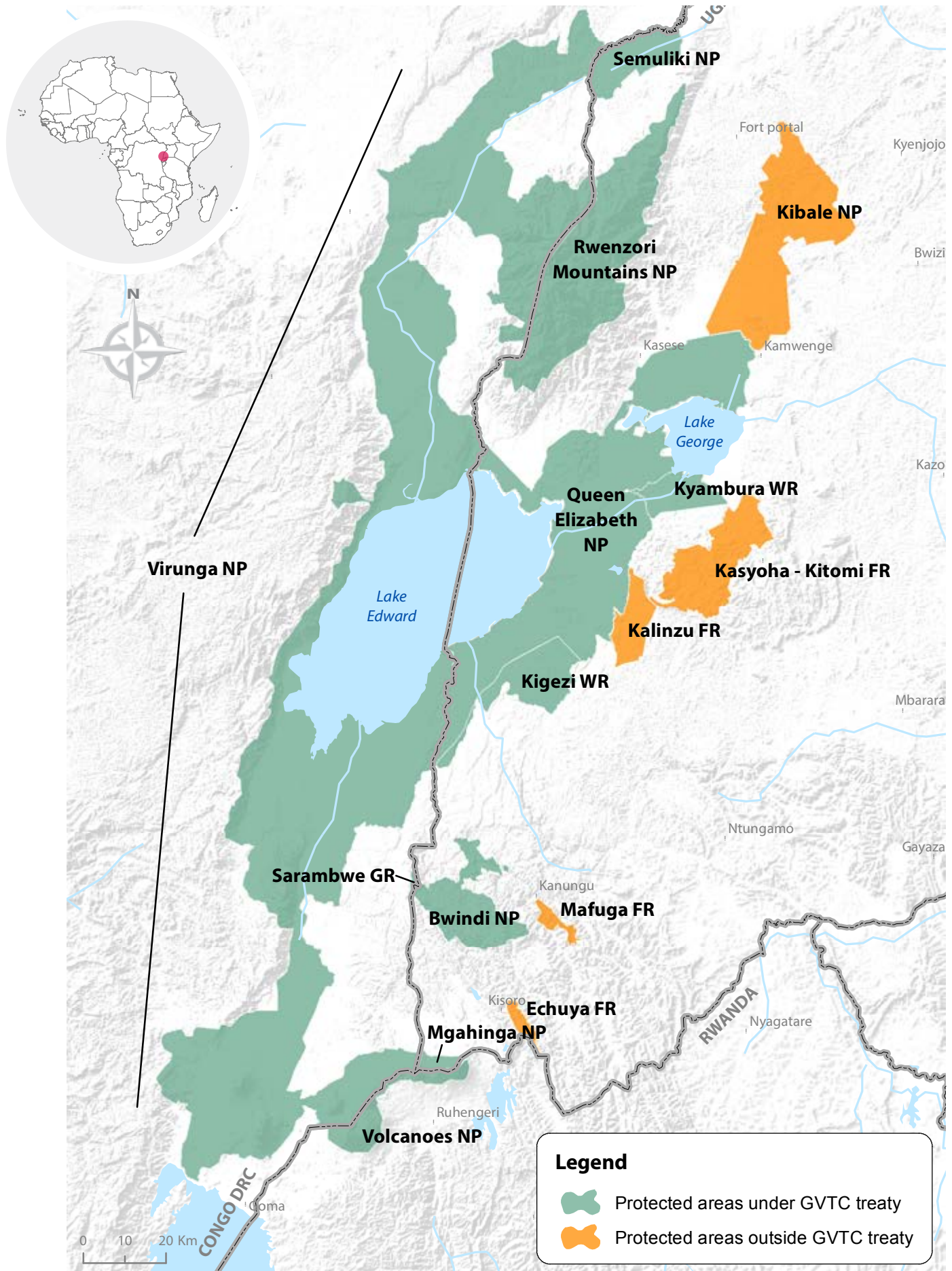
***GVL is among the world's most biologically diverse fragile eco-regions and a home to surviving rare and endangered wildlife and fauna.***

A variety of climate zones can be found across the GVL, from humid to arid, caused by a wide range in altitude from 5,100 meters above sea level in the Ruwenzori's to 600 meters in the lowlands of Semuliki. The GVL landscape, therefore includes rich forests and vast savannah, as well as two of Africa's most productive lakes, Lakes George and Edward.

The global importance of this landscape has been recognized as UNESCO World Heritage Sites (Virunga National Park -VNP, Rwenzori Mountains National Park, and Bwindi Impenetrable National Park), UNESCO Biosphere Reserves (Queen Elizabeth National Park, and Volcanoes National Park), Sarambwe Game Reserve (GR), Kyambura Wildlife Reserve (WR) and a Ramsar site (Lake George) and several forest reserves (FR) (see Figure 1 on facing page).



**FIGURE 1: GEOGRAPHICAL LOCATION OF THE GREATER VIRUNGA LANDSCAPE**





# Dynamic Challenges

## AN INCREASING POPULATION

The human population surrounding Greater Virunga Landscape is growing at almost 3% per year<sup>1</sup>. The population density of communities living within a radius of 5 kilometers from the park boundary ranging between 100 – 500 persons per square kilometer, with higher population densities in the southern section ranging from 500 to over 1000 persons per square kilometer (see Figure 2 on facing page).

*The human population surrounding this landscape is growing at almost 3% a year.*

In addition to population growth, human movement and migration within the GVL is very dynamic as a result of recurring armed conflicts causing internal and transboundary displacement of people. Furthermore, when stability is restored, people return to their home areas, as well as new migrants are attracted to these areas for the livelihood opportunities offered by the fertile soils and tourism development.

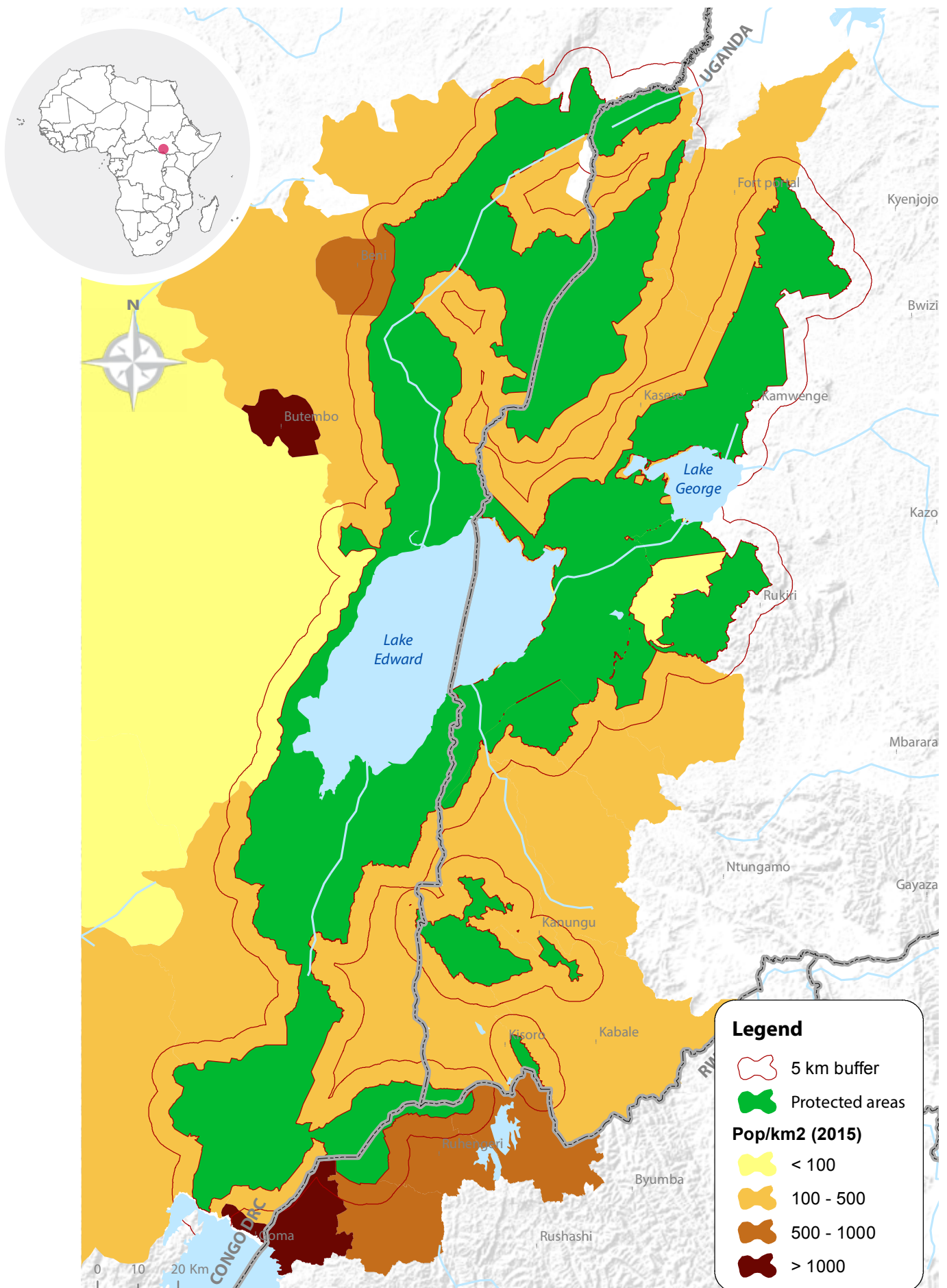
These population dynamics within the GVL can impact on its resources and have the potential to create further conflict.



CREDIT: JUVENAL MUKESHIMANA, GVTC



**FIGURE 2: HUMAN POPULATION DENSITY ESTIMATES 2015 WITHIN THE GREATER VIRUNGA TRANSBOUNDARY COLLABORATION**



Map Source Data: Population estimates 2015 per district (DRC, Uganda, Rwanda) provided by GVTC. Buffers and Population density per km2 calculated in GIS by GeoGecko (March 2017). Map by GeoGecko.com







# LIVELIHOODS AND DEPENDENCY

Over 80% of the people living in the GVL are small landholders raising crops and livestock. Fishing in Lakes Edward and George and several other small lakes and rivers is one of the main sources of livelihood for approximately 20% of households. Over 40% of the people living in the GVL fall below the poverty line<sup>ii</sup>.

***The GVL experiences high level of dependency on its natural resources for agriculture, grazing and fishing.***

When the protected areas were established people were moved outside the protected area boundaries. Households in the GVL remain dependent to some degree on the protected areas to provide resources like wild meat, mushrooms, firewood, and other forest products as well as providing ecosystem services, such as water for drinking and agriculture. All national parks share a modest portion of tourism revenue with local households and communities. The actual versus perceived benefits to the local communities close to protected areas in the GVL is a persistent source of conflict. The communities are specially concerned about crop raiding by wildlife (See photo of Silverback eating eucalyptus) – a conflict that is likely to increase with the expansion and intensification of agriculture bordering the protected areas (PAs).

Mt. Gorillas (silverback) eating eucalyptus on community land



CREDIT: PROSPER UWINGEL/NP

# LAND USE CHANGES

## OUTSIDE OF THE PROTECTED AREAS

***Land use changes are primarily the result of population growth and agricultural expansion.***

With a growing population there is an on-going expansion of agricultural fields and intensification of agriculture around the protected areas. As a result there are relatively few remaining natural forests, including community forests, and increasing land degradation. Fields commonly reach the border of the protected areas and buffer zones have disappeared (see photo of closeness of fields with protected areas).

Other underlying causes of land use change include urbanization in areas near the protected areas. It is anticipated that these small towns will continue to grow in size resulting in changes in land use and increasing indirect pressure on the protected areas for fuelwood, and wildlife.



CREDIT: PROSPER UWINGELI/VNP

Lack of buffer zones between fields and protected areas



# CONFLICTS, BOTH INSIDE AND OUTSIDE THE PARKS

United Nations Commission for Africa (2015)<sup>iii</sup> found that the current conflicts in Great Lakes region (DRC) are the result of past conflicts that remain unresolved. The report goes on to indicate that a direct cause of the regional conflicts is the inequitable distribution of resources, fueled by poor management of the natural resources.

**Communities  
received little but  
gave up much.**

An underlying cause for conflict includes the forced evacuation of people when the protected areas were established which resulted in the loss of crucial economic and natural resources. Resentment over the loss of land and resources continues till now. Raiding of agricultural fields by wildlife has resulted in losses for families and households living around the protected areas, however, they are not compensated for the loss of their crops. As a consequence, the communities commit retaliatory illegal activities within the PAs.

Adding to this resentment is the very limited participation in natural resource management decisions, which may impact on the well being of local communities (see photo below of communities erecting a stone wall at the PA boundary to stop wildlife crossing into their fields). Disputed boundaries by communities and PA authorities are on-going with the disappearance of the buffer zones through agricultural expansion increasing existing tensions.



CREDIT: PROSPER UWINGEL/NVP

Communities erect a stone wall at the PA boundary to prevent wildlife from crossing into their fields.

# EXTRACTIVE INDUSTRIES

Until recently, extraction of highly valued minerals such as gold and coltan, were largely artisanal. The recent discovery of oil, gas and geothermal potential, however, is a game-changer. Countries are now moving ahead in the exploration and production of oil and gas, which if not properly managed, is likely to result in major negative environmental (and social) changes. Extractive industries are managed under each GVL partner state policy guidelines and legislation.

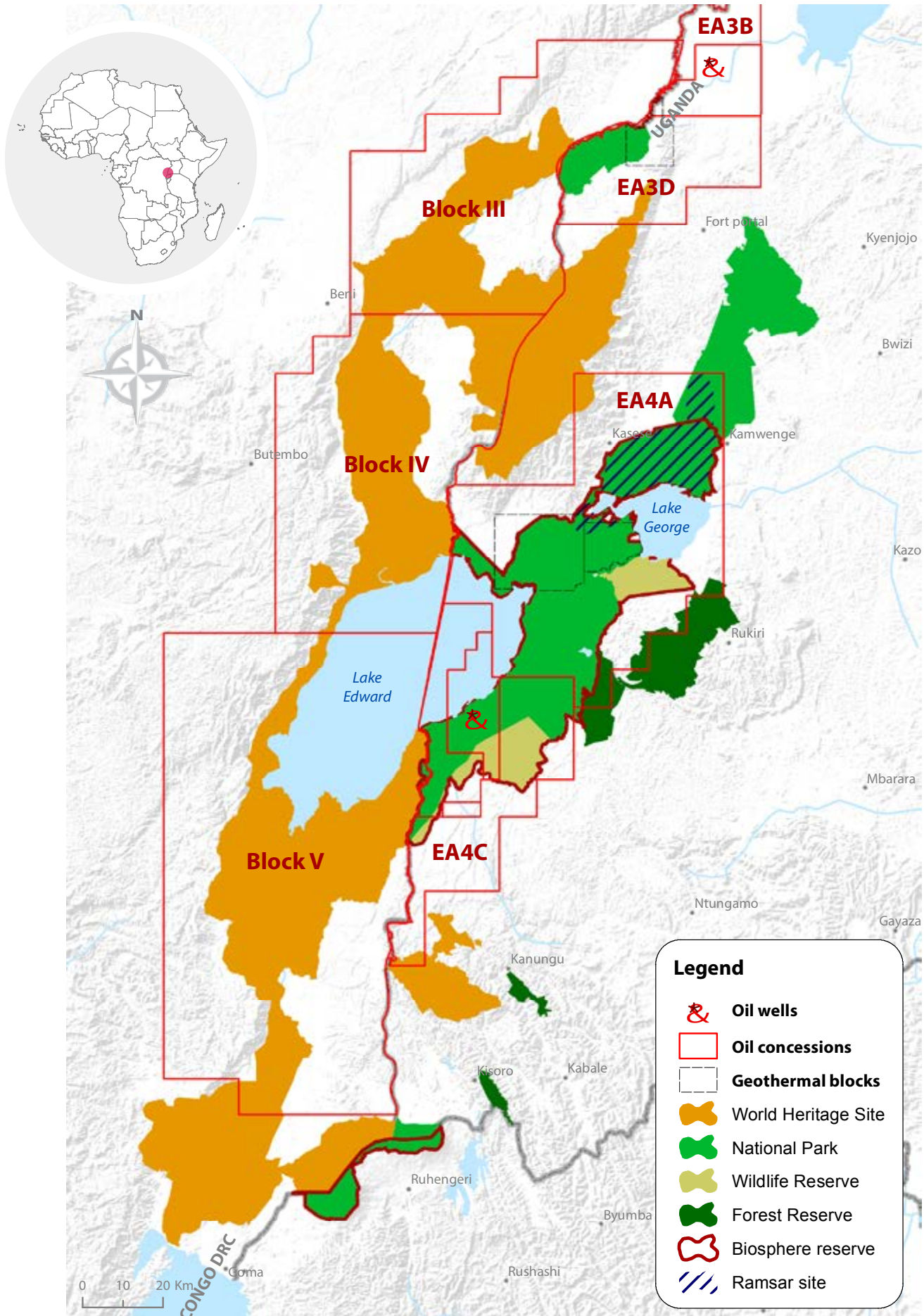
Concessions for these industries cover the whole of the GVL, including the World Heritage Sites as well as national protected areas (see Figure 3 on facing page). Since 2006, Uganda discovered commercial quantities of oil in the Albertine Graben and production in Murchison will begin within the next few years. The effect of the extractive industries, similar to and contributing to that of the increase in urbanization is the increased demand for bush meat, timber and fuel wood from the GVL.



CREDIT: BUHANGA EDGAR, UWA



**FIGURE 3: OIL AND GAS CONCESSIONS WITHIN THE GREATER VIRUNGA LANDSCAPE**



Map Source Data: Shapefile of Oil concession blocks provided by WCS. Geothermal blocks and oil wells digitized in GIS by GeoGecko, based on static map (WCS).  
Map by GeoGecko.com

# CLIMATE CHANGE AND NATURAL DISASTERS

The effects of a changing climate are already being witnessed within the GVL. The socio-economic surveys of the hydrological studies commissioned by GVTC in 2015, captured the impacts of erratic, delayed, and heavy rainfall patterns.

***The effects of a changing climate are already being witnessed within the GVL.***

Climate change models<sup>iv</sup> have predicted a sharp decline in endemic species in GVL due to the rise in temperature and the increase in rainfall in some areas and more severe droughts in other areas. The rising temperatures and erratic rainfall will impact human populations living in GVL. The most vulnerable of these populations are the poor and women. These groups have few assets and low resilience to the harmful effects of climate change, especially decreased agricultural yields.

With a population that is highly dependent on natural resources and over 80% of livelihoods dependent on subsistence agriculture, there is likely to be increased pressure on the protected areas in the GVL, especially during periods of drought or flooding.

The human response to climate change will be a critical factor, potentially exacerbating threats to wildlife conservation in the GVL in years to come.



CREDIT: BAGURUBUWWE, ICCN







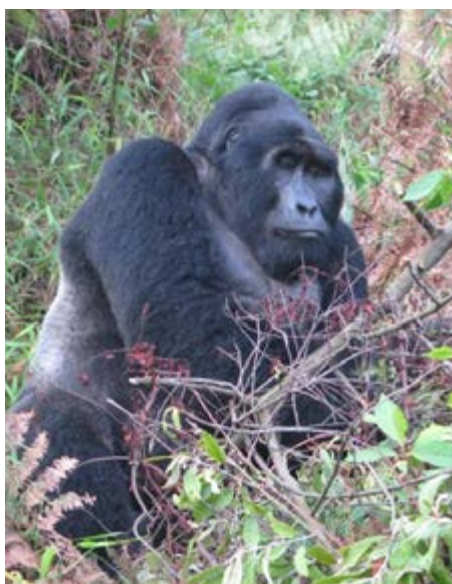
# CONSERVATION OF OUR NATURAL HERITAGE

## TRENDS: STATUS OF KEY SPECIES

***Virunga Massif and Bwindi populations of mountain gorillas show a positive trend despite persistent and acute threats.***

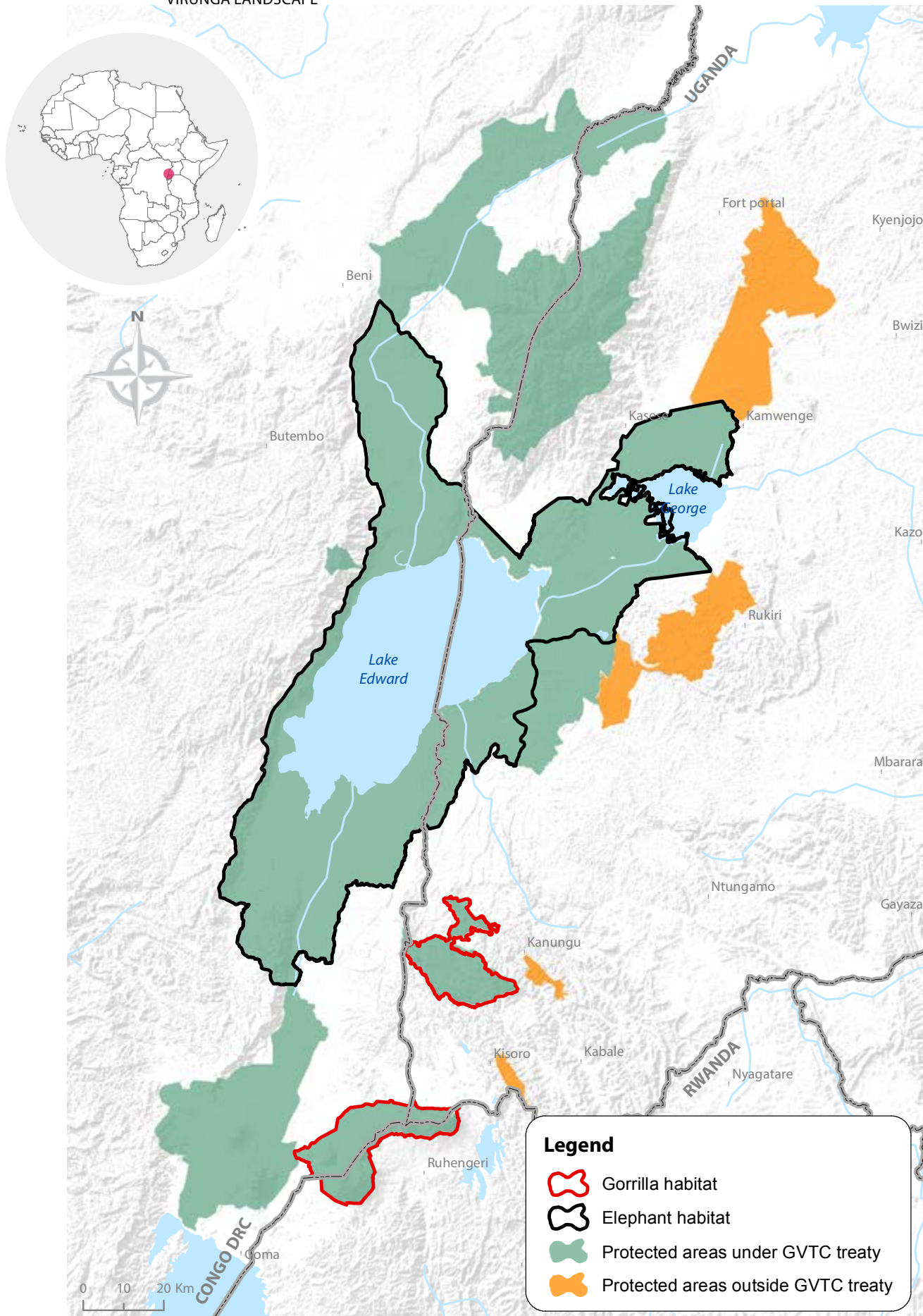
The GVL contains more terrestrial vertebrate species and more endemic and threatened species than anywhere else on the African continent. The contiguous transboundary system is important for 13 large-bodied landscape species including lions, hippopotamus, chimpanzees, golden monkeys, leopards, golden cats, crowned eagles, buffaloes, lesser flamingoes, vultures, Rwenzori duikers, sitatunga, mountain gorillas, and elephants<sup>v</sup>.

Government institutions and partners have initiated and maintained monitoring of mountain gorillas and elephants in the GVL (figure 4), regardless of international boundaries and recurring conflicts. Mountain gorillas are endemic and only found within the Greater Virunga Landscape.





**FIGURE 4:** DISTRIBUTION OF KEY SPECIES (MT GORILLAS AND ELEPHANTS) WITHIN THE GREATER VIRUNGA LANDSCAPE



Map Source Data: Distribution of Mt Gorillas and Elephants provided by GVTC. Map by GeoGecko.com

## MOUNTAIN GORILLAS

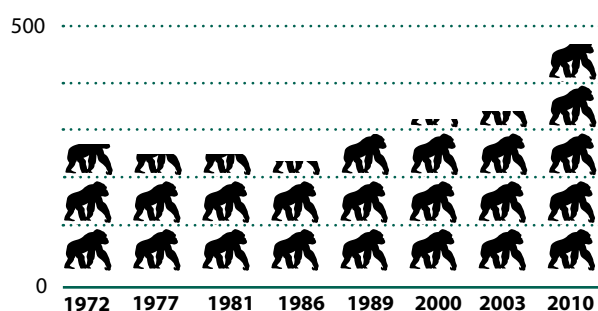


Some mountain gorilla groups have been habituated for research and tourism, and habituated mountain gorillas are monitored on a daily basis in regards to location, changes from birth, death, migration, and health.

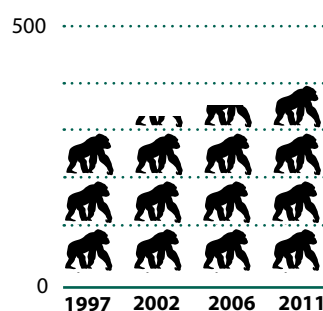
Despite persistent threats to mountain gorillas, there is evidence of a positive trend in the Virunga Massif and Bwindi populations of mountain gorillas (see Figures 5 and 6). This is largely attributed to:

1. The daily monitoring and protection of habituated gorillas and veterinary interventions<sup>vi</sup>;
2. Implementation of revenue and benefits-sharing policies with neighboring communities<sup>vii</sup>; and
3. Coordinated law enforcement and gorilla monitoring within the transboundary areas<sup>viii</sup>.

**FIGURE 5: Mountain Gorillas Virunga**



**FIGURE 6: Mountain Gorillas Bwindi**



 = One hundred mountain gorillas





## ELEPHANTS



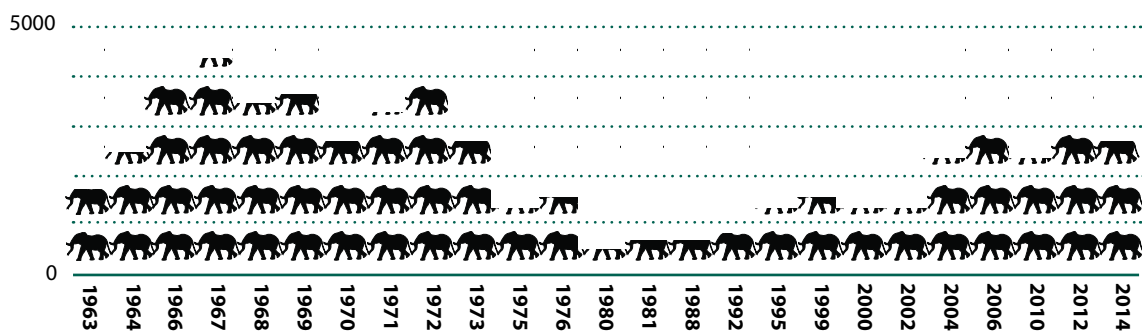
Although there have been surveys of the elephant populations in the transboundary savannah area of Virunga National Park and Queen Elizabeth National Park since the early 1960s, it is only recently that joint aerial surveys were conducted for this population simultaneously. It is important to recognize that there are populations of elephants in other forested areas of the GVL that have not been counted and are not represented in Figure 7 and 8.

The elephant population in the GVL has been impacted by political and armed conflict, making them vulnerable to ivory poaching. As depicted in figure 10, the elephant population in QENP declined in the years between 1973 – 1992, which were years of poor governance while the Virunga population continues to decline due to armed conflicts that have persisted in the region for the last two decades.

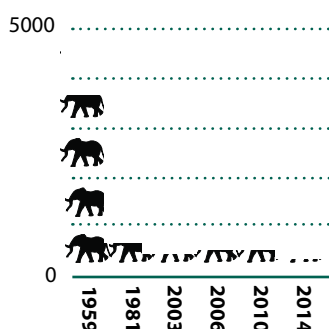
Several key initiatives are in place to protect and monitor this transboundary species within the landscape and these include:

1. Some elephants have been collared for transboundary monitoring of population center;
2. The three governments have ratified several conventions, including the Convention on Migratory Species, CITES and Convention on Biodiversity, all aimed at providing an enabling environment for coordinated anti-poaching measures; and
3. Multiple initiatives are in place to prevent and mitigate human-wildlife conflict

**FIGURE 7:** Population estimate of elephants of Queen Elizabeth National Park



**FIGURE 8:** Population estimates of the savanna part of Virunga National Park



 = One thousand elephants



# TRENDS: AREAS UNDER CONSERVATION

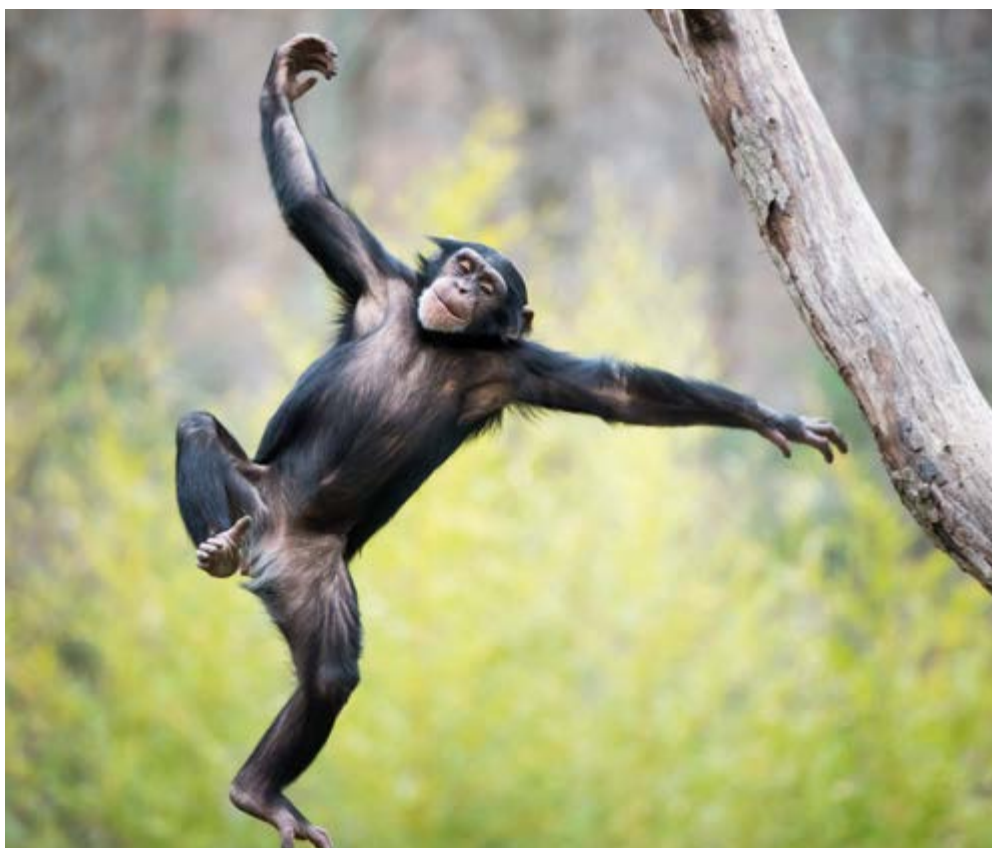
The Protected area in GVL includes UNESCO World Heritage Sites (Virunga National Park, Rwenzori Mountains National Park, and Bwindi Impenetrable National Park), UNESCO Biosphere Reserves (Queen Elizabeth National Park, and Volcanoes National Park) and a Ramsar site (Lake George and Lake Edward). These are the protected areas recognized by the GVTC treaty. However, there are other protected areas in Uganda which are not covered by the treaty e.g. Kalinzu- Maramagambo, Kashyoha-Kitomi, Echuya and Mafuga central forest reserves as well as wetlands (e.g. Nyamurilo, Muchuya, Mubwindi) and Lakes Edward and George, and the Kazinga Channel (see Figure 9 on facing page).



CREDIT: MUKESHIMANA

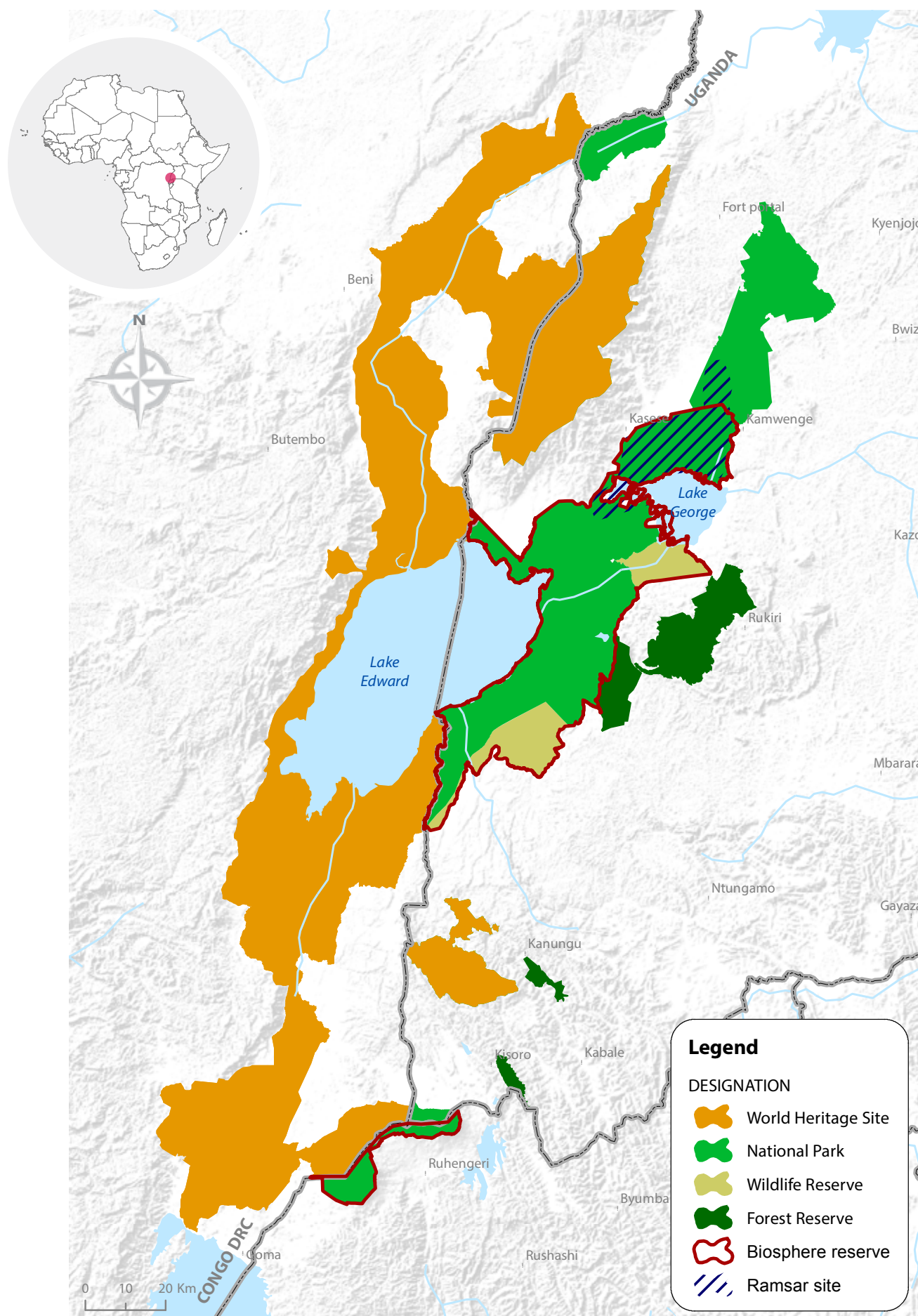


CREDIT: BYAMUKAMA JAMES, GVTC





**FIGURE 9:** WORLD DESIGNATIONS OF PROTECTED AREAS WITHIN THE GREATER VIRUNGA LANDSCAPE



Map Source Data: IUCN and UNEP-WCMC (2017), The World Database on Protected Areas (WDPA) [On-line], Feb2017, Cambridge, UK: UNEP-WCMC.  
Available at: [www.protectedplanet.net](http://www.protectedplanet.net). Map by GeoGecko.com

# TRENDS IN ILLEGAL WILDLIFE TRADE AND POACHING

In 2015, a minimum of 4,240 wire or rope snares and traps were detected and destroyed by rangers in the GVL.

Transboundary areas are especially susceptible to pressure from snares and other illegal activities, due to the challenges of law enforcement in these areas.

There are many ongoing efforts (photo of communities uprooting a snare) within the landscape, and through the work of the GVTC, to improve the ability to prevent and detect illegal activities, as well as to utilize ranger-based monitoring within each protected area to look at transboundary trends.



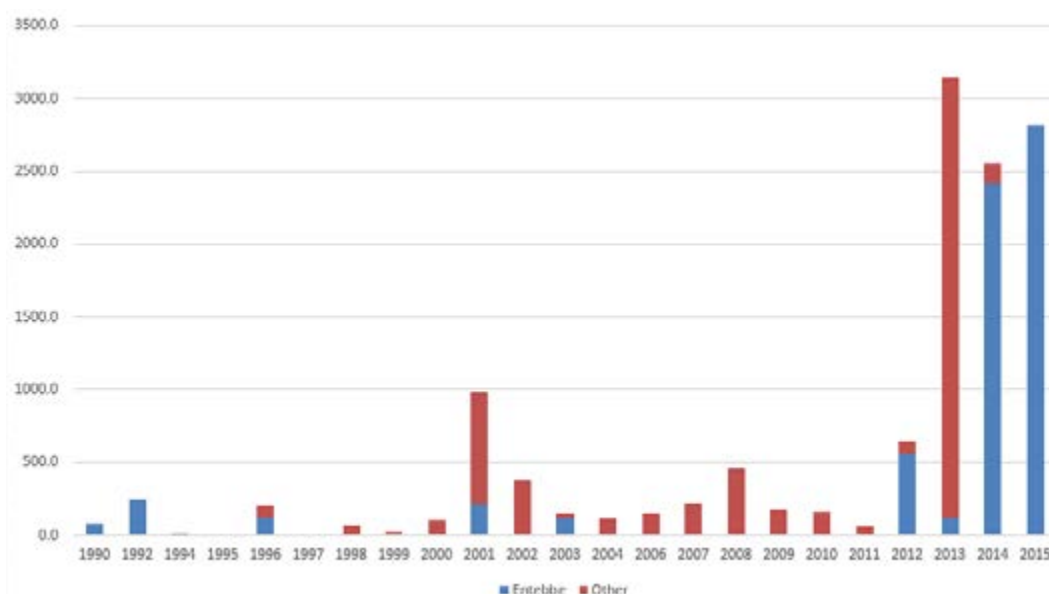
CREDIT: PROSPER UWINGEL/NMP

Community involvement in uprooting snares as one of the initiatives in GVL against poaching



Records available show that in 2015, 2,049 kilos of pangolin scales (Table 1) and 2,813 kg of ivory were impounded while being trafficked through Entebbe airport<sup>ix</sup> as compared to the total of 2179 kilos of pangolin scales from 2012 to 2015 and 7,763.35 kilos of ivory impounded in Uganda from 1990 to 2014. In the 2015 baseline year, 18 arrests were made against 203 confiscations made in Uganda<sup>x</sup> while only five cases of trafficking were recorded in Rwanda from 2004 – 2014<sup>xi</sup> and only one recorded in DRC.

**Figure 10:** Number of kilograms of Ivory seized at Entebbe airport and other places in Uganda



**Table 1:** Table of kilogrammes of Pangolin scales seized at Entebbe airport and other places in Uganda

Year	Location		Total
	Entebbe	Other	
2012		125	125
2013		181	181
2014	20	52	72
2015	2049	129	2178
<b>Total</b>	<b>2070</b>	<b>487</b>	<b>2556</b>

#### Comparison of confiscation incidences recorded by CITES officers in the three party states of GVTC

**Table 2:** Comparison of wildlife confiscates cases by CITES officers in DRC, Rwanda and Uganda

Period 1999 – 2016					Total
Country	Elephants	Pangolin	Chimps	Others	
Uganda	157	12	34	-	203
Rwanda	0	0	1	4	5
DRC	1	No data	No data	No data	1

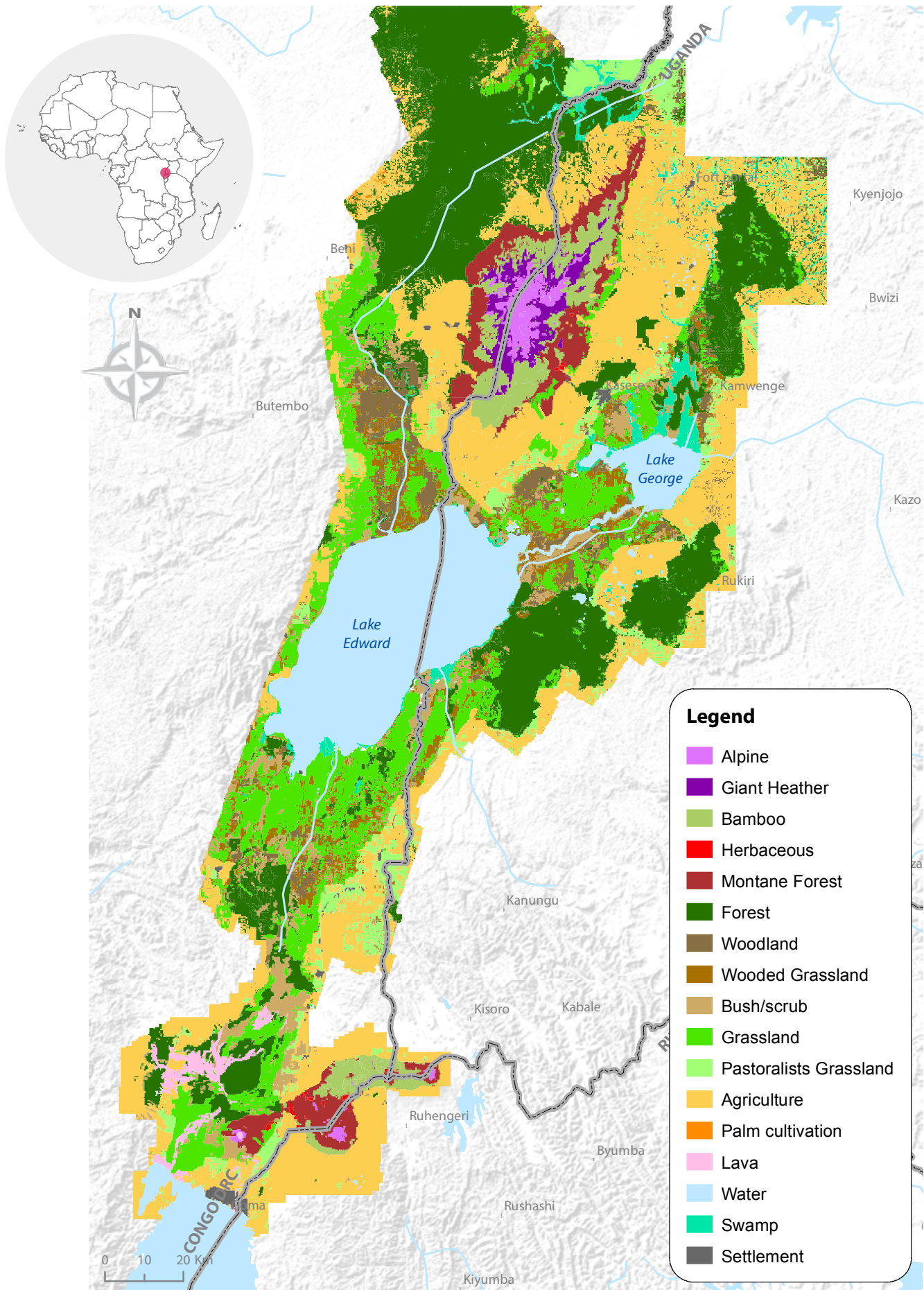
# TRENDS IN HABITAT CHANGE

While small-scale habitat change studies have been conducted within the GVL - tracking the change of forests and wetlands - it wasn't until 2010 that the Wildlife Conservation Society classified the entire landscape by vegetation type. The GVL 2010 landcover map (figure 11) will constitute the baseline on which land cover changes will be benchmarked.





**FIGURE 11: LAND COVER**





# WAY FORWARD

**This ACSR presents the current conservation status of the GVL. It is a picture not only of success, such as the recovery of the mountain gorillas, but also of serious concerns, such as wildlife trafficking and on-going conflicts between people and wildlife.** A major outcome of the preparation of the ACSR is the deepened appreciation of the critical role of transboundary collaboration and institutional and organizational partnerships in supporting the successes and addressing the threats to the GVL.

The subsequent ACSR will measure conservation improvement based on the 2015 conservation indicator benchmarks through the collective efforts of key stakeholders in GVL. In particular, future ACSRs will show the trends from the current baseline and what the GVTC partner's will have done to assist in improving conservation. The baseline data gaps that have been identified in the ACSR under review will be addressed in the 2016 ACSR due in June 2017.

It is our belief that by working together we will be able to address the threats and contribute to the conservation of the unique diversity of the GVL.



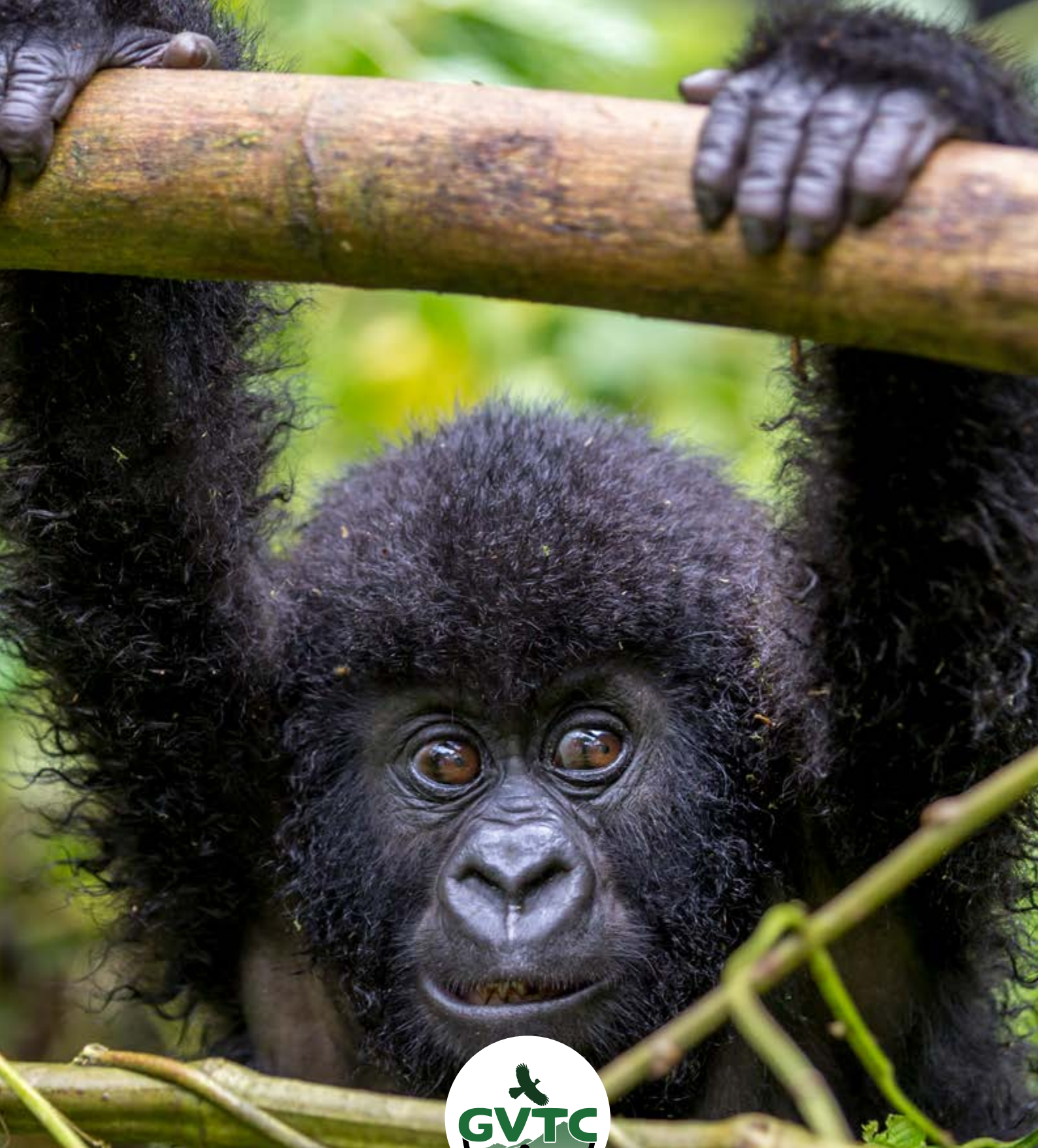


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# VIRUNGA