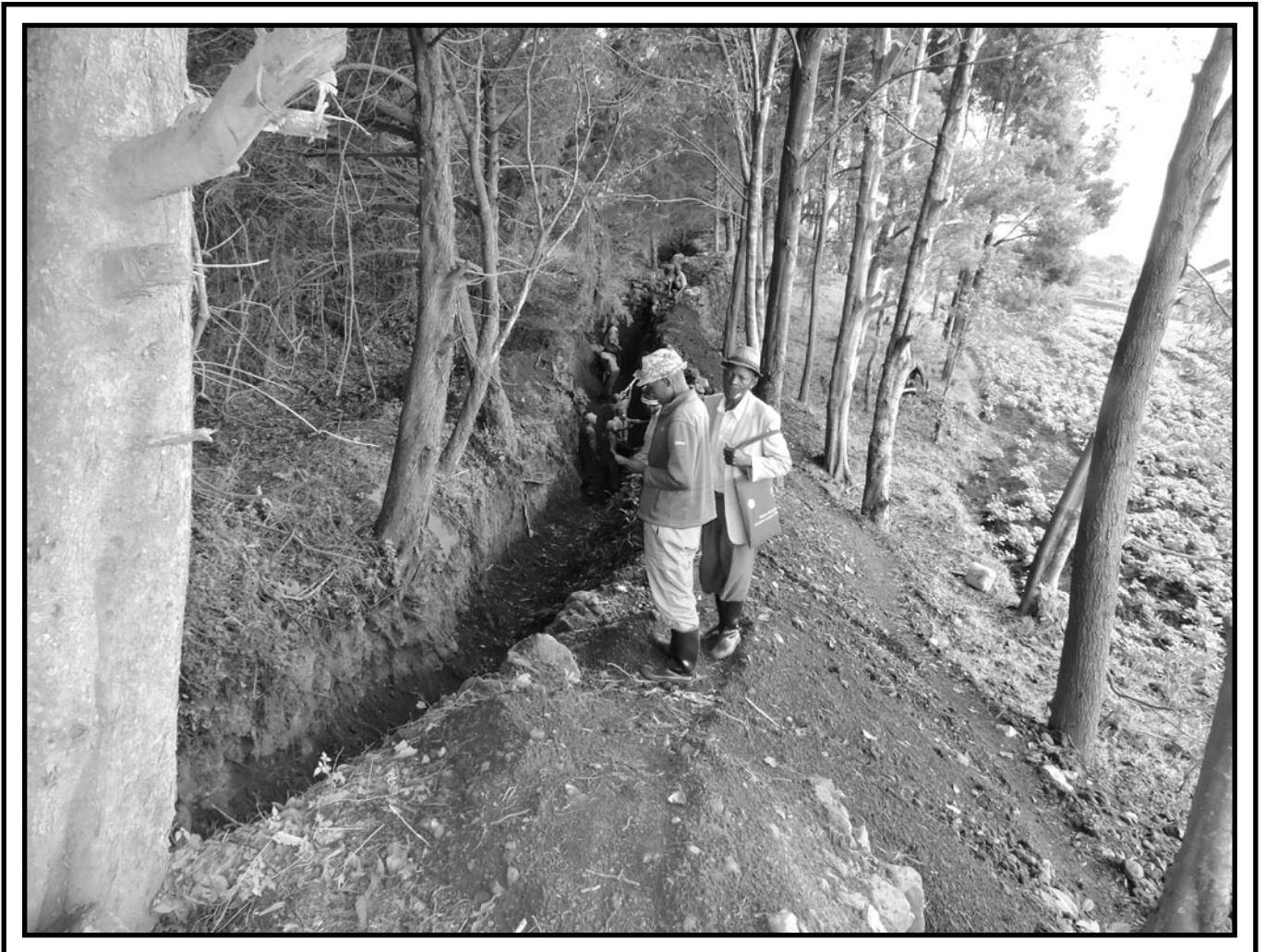




Gorilla Journal

Journal of Berggorilla & Regenwald Direkthilfe

No. 62, June 2021

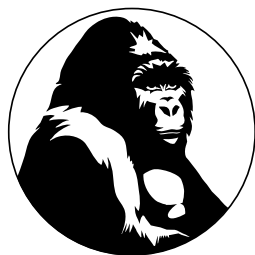


**Why Rangers
in Virunga Are
Under Attack**

**Pressures on
Natural Resources
of the Maiko
National Park**

**Strengthened
Human–Wildlife
Conflict Measures
in the Virungas**

**Motherless
Gorillas Beat the
Odds**



BERGGORILLA & REGENWALD DIREKTHILFE

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Gorilla Journal 62, June 2021

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Cover: Renovation works at the buffalo wall and trench provide an opportunity to park-edge residents to earn a daily wage. Photo: IGCP

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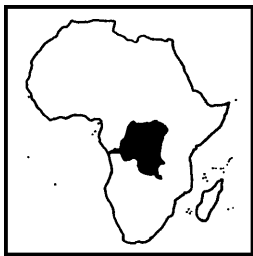
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D. R. CONGO

Why Rangers in the Virunga National Park Are Under Attack

Staff working in the Virunga National Park have often come under attack – more than 200 rangers have died in the line of duty since 1925. Why does this happen and what must be done to better protect them?

Why is Virunga National Park so vital for conservation?

Virunga National Park is one of Africa's most biodiverse protected areas and is home to one third of the world's wild mountain gorillas. It is also special due to its location within the eastern Democratic Republic of the Congo, a zone of protracted violent conflict.

The conflict in this region defies easy explanation. It involves over 130 armed groups and is driven by a complex range of factors. These include conflict over land and natural resources, struggles around local authority (for instance, the succession of chiefs), interference by neighbouring countries and militarised political competition.

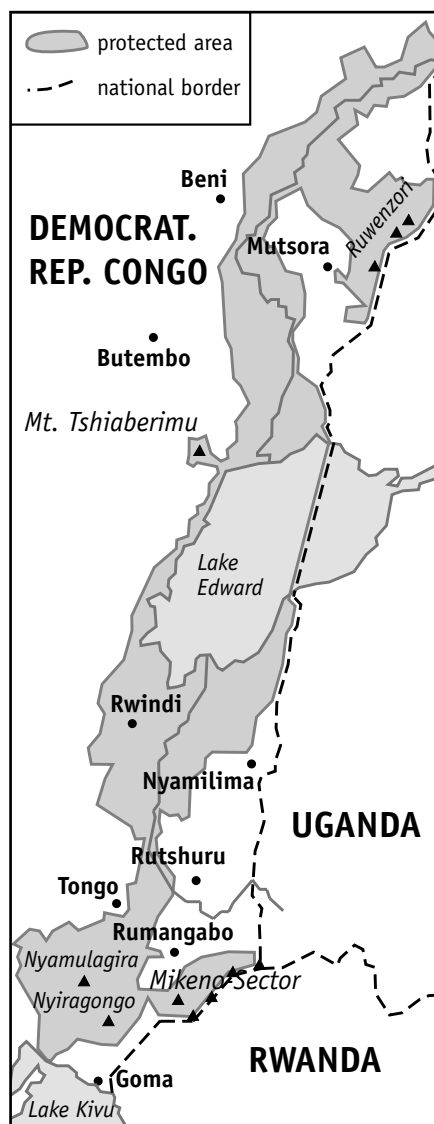
Ongoing violence makes the protection of the park challenging, though park rangers are not the only group to face insecurity – the park, and its surroundings, are also very deadly for civilians. For example, at the beginning of January at least 22 civilians were massacred during a raid attributed to a rebel group in a village bordering the park in Beni territory.

What is the context within which attacks on rangers in Virunga National Park occur?

In general, the security situation in North-Kivu – where the park is located – shows no signs of improving, as violence is ongoing.

Moreover, over the past five to seven years, the park guards have increasingly become a specific target of some

of the numerous armed groups hiding and operating within the park. This can, in part, be explained by the rangers' increased efforts to halt illegal natural resources exploitation in the park, such as the production of charcoal and illegal fishing, which are important sources of revenue for many armed groups. Some of these efforts entail close collaboration with the Congolese army, such as joint patrols, intelligence sharing and sometimes joint operations. For rebel groups, this is a reason to



Another Attack on Rangers in the Virunga National Park

On 10 January 2021, 6 rangers lost their lives in an attack by armed assailants. Another ranger was seriously wounded. The rangers were ambushed while on foot patrol in the Central sector of the park. It seems that the rangers were taken by surprise and had no opportunity to defend themselves. According to the ICCN (Institut Congolais pour la Conservation de la Nature) local Mai Mai are probably responsible for the attack.

consider the park guards a threat to their spheres of influence, sources of revenue and even existence.

Armed groups also once kidnapped tourists, which was aimed at sabotaging the park's tourism potential.

Another, more indirect reason why park guards are under attack relates to anti-park sentiments among parts of the local population. There are numerous conflicts between the park management and people living around the park, which relate, amongst others, to contestations around the boundaries of the park, grievances about land appropriation, and the regulation of the use of natural resources. Armed groups, often closely linked to the population due to family and other social ties, utilise these conflicts to obtain a measure of support in the areas where they operate. This includes the groups operating around Nyamilima, where the attack on 10 January took place. There are strong tensions in this area, as the park is aiming to erect an electric fence. This project is heavily disputed by the population, as they contest the park's boundaries.



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It is important to stress that this doesn't mean that people living in the area endorse the use of violence against park guards; in fact, many people condemn these acts and are committed to non-violent conflict resolution. Nevertheless, through our work, we've observed that attacks are more likely to take place in areas marked by intense conflicts.

Despite some recurring features, the context and circumstances of each attack are different. Attacks should therefore be investigated individually. This will help to hold perpetrators to account and create a better understanding of their motivations and objectives, which is important to avoid future attacks.

What steps have been taken to protect the park and its rangers?

Park guards receive sophisticated military-style training, including combat techniques, to defend themselves. They also have advanced logistical and communications equipment to allow for rapid movement and up-to-date information.

In addition, the park has developed an extensive system of aerial surveillance to track the bases and movements of armed groups. Furthermore, to operate in the more dangerous areas, it has created a quick reaction force, which is a more heavily armed unit deployed for robust operations.

Finally, in some areas, park guards operate jointly with the Congolese army, which has a much larger presence throughout the park.

How effective is this strategy and what else can be done?

The current response of increased military-style training and operations has led to inadvertent consequences, setting off a vicious cycle of violence. Increased pressure on armed groups and collaboration with the Congolese army leads almost inevitably to counterattacks.

The park rangers – currently around 689 – are outnumbered by the armed groups operating in the park and are a very vulnerable target. Efforts to increase the park guards' protection have so far not proven to be very effective. Park guards themselves feel this very clearly. While they are consistently depicted as heroes and martyrs, many are very afraid – and reluctant – to lose their lives.

In addition, the current approach has worsened relations between the park and local populations. During our research in the area, we found people fear and distrust the park guards. These tense relations are also regretted by the park guards we have spoken to. Some of them wish they were less expected to work as "soldiers" and more as conservationists.

We believe that the park guards' security can be improved in two ways:

- First, it is crucial to prioritise resolving conflicts with the people living around the park, and for the park to engage in more dialogue. In addition, the park should intensify efforts to protect the population against rampant insecurity.
- Second, a comprehensive strategy needs to be developed for dealing with the armed groups operating in the park. Clearly, this is not the primary responsibility of the park, but of the Congolese government and the army, as well as politicians and community leaders.

Unfortunately, as the ongoing insecurity testifies, there are limited signs that such a strategy is in the making, implying that both the park guards and the people living in the Virunga area will remain exposed to insecurity for the foreseeable future.

To combat the growing insecurity, the Congolese government announced a state of siege for North Kivu province, where Virunga National Park is locat-

ed, starting on 6 May 2021. The province is placed under military rule, while security forces are given extraordinary powers. However, it is questionable whether armed groups can be tackled through military measures alone. Virunga National Park is therefore likely to remain plagued by insecurity for the foreseeable future.

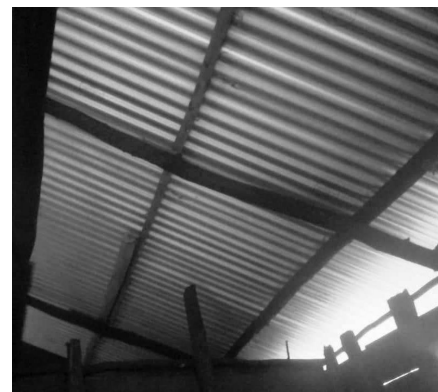
Judith Verweijen and Esther Marijnen

This article was first published in The Conversation Africa (Johannesburg) on 14 January 2021

Restoration of Sarambwe Ranger Post and Current Activities

The Sarambwe ranger post was attacked during the evening of 10 October 2020 by a Mai Mai group operating in the vicinity of Sarambwe. A few days before the attack, several neighbouring villages had been attacked and looted, including the village of the Sarambwe head tracker.

During the attack, the post lost an officer of the ranger force and about a third of its belongings (mattresses, chairs, solar panels, lighting, cooking pots etc.). The whole post was riddled with bullets, the walls were damaged and the roofing over the kitchen and



The new kitchen roofing

Photo: Mumbere Nzanu Getride



D. R. CONGO



The renovated Sarambwe patrol post

Photo: Mumbere Nzanzu Getride

for poachers and wood collectors. Information about illegal activities started coming in from all over the reserve.

I talked to the trackers and found that they felt confident and had decided to resume their work – whether the ICCN rangers and supporting soldiers joined them or not. Following this decision, Berggorilla & Regenwald Direkthilfe sprang into action to repair the ranger post to make it habitable again. They replaced all the windowpanes, all the damaged roof sheets and all the missing equipment such as mattresses, chairs, tarpaulins, solar panels, batteries, lighting, voltage stabilisers, lightbulbs, walkie-talkies and kitchenware. Making the post habitable again

the storeroom was destroyed. ICCN decided to pull back both ICCN staff and the loyal supporting troops for their own safety. The remaining goods

were also retrieved and secured elsewhere. The reserve was completely abandoned: no rangers, no military support, no trackers. It was a bonanza

Support Needed!

We now provide regular financial support for patrolling by rangers and trackers in four protected areas of the Democratic Republic of the Congo. Since we never know how much money will come in over the year, this severely limits our ability to provide other support, especially urgent once-off donations for protected areas and the communities. We would therefore be very happy to find sponsors for these urgent activities. Currently, the following requests are on our list:

- More community-based courses to train people in the manufacture of fuel-saving stoves: EUR 7,135 per course;
- Solar street lamps for additional communities surrounding the Itombwe Reserve: EUR 6,625;
- Mushroom cultivation project on Mt. Tshiaberimu: EUR 3,194;
- Support for community-based gorilla monitoring in five communities on the edge of Maiko National Park: EUR 10,000;
- One year’s worth of rations for patrols in Maiko National Park: EUR 7,200;
- Support for CoCoSi 2021 (planning meeting) for Maiko National Park: EUR 2,000;
- Management and maintenance of the vehicle used by the Maiko Park office for one year: EUR 12,000;
- EUR 500 per month for food and EUR 100 per month for medical supplies to support patrols in Itombwe over one year: EUR 7,200.

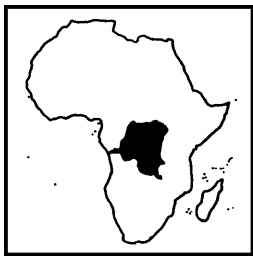
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It is quite clear that we cannot meet all of these requests, but with your help we could find the money for at least some – a decision on which are most urgent will be made by B&RD in consultation with Claude Sikubwabo.

If you can help us finance a specific project, please contact Angela Meder at meder@berggorilla.org

You are also welcome to donate via PayPal if you prefer this: <http://www.berggorilla.org/en/help/donate>

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proved to ICCN and the local population that Berggorilla could be relied upon to support the conservation and the development of the reserve.

Berggorilla & Regenwald Direkthilfe did not stop there. It has also extended its support to the local people who lost their livestock during the attacks on the post and its neighbouring villages, providing the funds to buy 34 goats and ten sheep. This was a very important gesture for the people and for the maintenance of the warning system.

Work of the trackers and the challenges of renewal

After the Sarambwe post was restored, the commander of the Armed Forces of the Democratic Republic of the Congo (FARDC) deployed a squadron of soldiers next to the post to keep it secure. Two trackers live at the post and the other eight live in their own houses nearby. Goods retrieved after the attack have been brought back for the trackers to use.

The trackers carry on as normal, patrolling six days a week, looking after the compound and maintaining three to four trails every month. Since the beginning of this year, they have carried out 77 patrols, prevented the encroachment of the reserve by loggers, stopped the establishment of fields by six Ugandans, and extinguished bush fires in three subsections, thereby preventing their spread.

During the course of their activities, the trackers have been unwavering in their pursuit of offenders, particularly when they encounter them during patrols. They continue to work on their own, without the help of any ICCN representative to interrogate, raise awareness and issue warnings to the wrongdoers. In such cases, the trackers are unsure whether they should release the offenders or take them to the police. The presence of an ICCN representative with legal powers is required but continues to be problematic.

During the last three months, the trackers identified four violations at the border between the reserve and Uganda. They found two fallow fields, one field of coffee plants owned by a Ugandan woman, a fire set to clear an area for cultivation, and one case of poaching.

Claude Sikubwabo

Pressures on Natural Resources of the Maiko National Park, a Challenge for the Management

Management of the Maiko National Park (MNP) has remained difficult due to the presence of armed groups in different sectors of the park. The precarious security situation has resulted in the movement of people around and through the park and the proliferation of weapons, resulting in increased use and degradation of the park's biodiversity.

The threats to the park's staff and its biodiversity include traditional and armed poaching, artisanal mining, deforestation due to the encroachment of the park by armed groups and farmers, and the illegal trafficking of live young animals such as gorillas, okapis, chimpanzees and crocodiles.

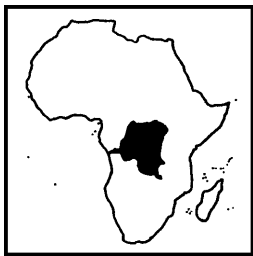
Threats to conservation targets, and to the protected area in general, need to be monitored to assess how they affect the quantity and quality of biological resources. As part of the methodology, existing conservation strategies need to be reviewed to determine how to reduce the impact of threats on conservation targets, or to eliminate them altogether. A monitoring programme is presently being carried out, supported by FFI (Fauna and Flora International) and Berggorilla & Regenwald Direkthilfe, which aims to continuously document biodiversity and threats to the MNP.

This article compares trends in threats faced by the park in 2020 to

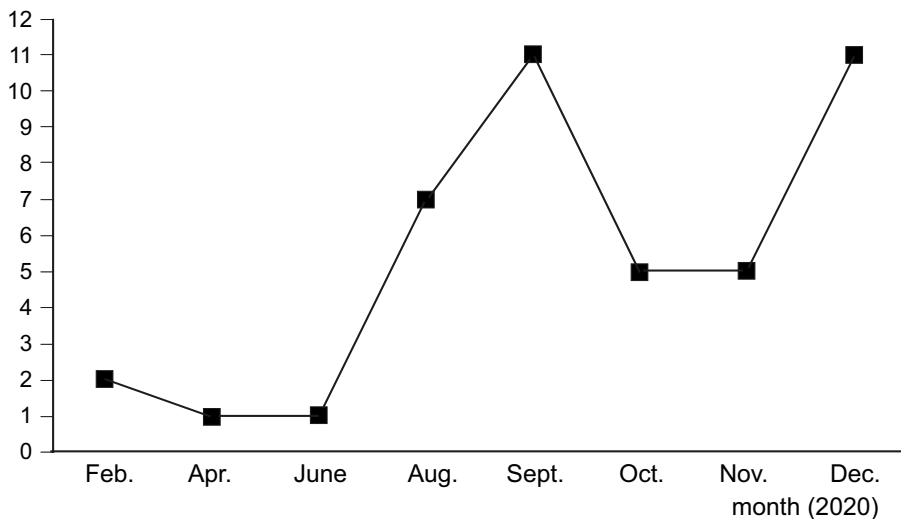


A delegation of the FDS arrives in Oso to meet the new park management

Photo: ICCN



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Number of patrols during the respective months in 2020

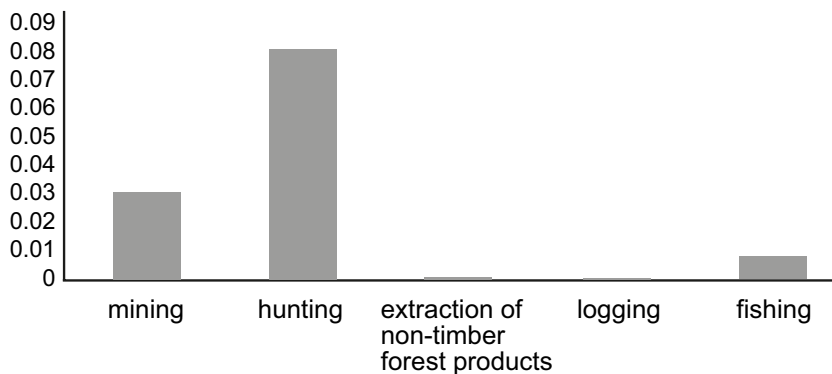
Figure: ICCN

those of the first quarter of 2021. This provides a basis for the reorientation of law enforcement. Foot patrols are considered a strategy for the monitoring and tracking of species in the MNP. This strategy is based on measurable indicators of threat protection and mitigation efforts. In total, 32 monitoring patrols were organised with more than half conducted in the second half of 2020. No scientific research took

place. The figure shows the results of the SMART Analysis reports.

While a significant proportion of the monitored poacher camps were inactive, there was a marked increase in activity in the gold digger camps in February 2021. The trend towards high levels of mining activity could attract poaching to the area. Poaching increased in 2020, but the bushmeat traffickers were tracked to the surrounding

Frequency calculated by SMART



Summary of threats during 2020

Figure: ICCN

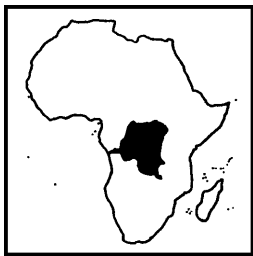
villages. This enabled a reduction in poaching by the beginning of 2021, but – as shown by patrol results in March 2021 – there was a consequent surge in mining operations. The challenge is to address both poaching and mining simultaneously, which is especially difficult considering that the mining operators are protected by the so-called Forces Divines Simba (FDS). The government has initiated the demobilisation and disarmament of the FDS under the supervision of the ICCN (Congolese Institute for Nature Protection), but the monitoring of the biodiversity in the MNP remains problematic until this process has been completed.

In order to provide adequate solutions to the threats facing the MNP and to optimise effectiveness of the available human, financial and material resources, a process of programme categorisation and prioritisation has been put into place as used by the SNCB (Stratégie Nationale de Conservation de la Biodiversité) which defines three programme categories linked to structuring, management and development, and sets priorities for each.

Jean Claude Kyungu

Fuel-efficient Stoves at Mount Tshiaberimu

Efficient charcoal-fired stoves have been in use throughout the eastern Democratic Republic of the Congo for more than a decade. Everyone is convinced of the efficiency of these stoves. Traditional stoves use twice as much charcoal as these improved stoves. For example, a household using 5 to 6 bags (40 kg each) of charcoal per month in a traditional stove can reduce consumption to 2.5 to 3 bags with an improved stove. A 40 kg bag of charcoal costs USD 15, so rather than spending USD 90 for 6 bags, households using efficient stoves will save USD 45 each month.



D. R. CONGO

This type of fuel-efficient stove can be used for more than three years. It is topped by a metal plate but the body of the stove, where charcoal is burnt, is made of clay. The clay can be replaced and is much cheaper. The price of a good stove ranges between USD 25 and USD 55. The most common stoves cost between USD 5 and USD 15 and the price is decreasing. Traditional stoves cost up to USD 2 with a lifetime of up to six months, but are well known, so they sell easily.

We have initiated a project for the manufacture of improved stoves around Mount Tshiaberimu (or Tshiabirimu) that was funded by Berggorilla & Regenwald Direkthilfe with a donation from the Gaia Nature Fund. The project goal is to enable the surrounding population to benefit from their introduction, to add value to the plantations that were established in the past, and to reduce the need for collecting firewood in the park. The current results of the project are as follows:

- The project started with the delivery of theoretical and practical training. Training took place in July 2020, resulting in the creation of three groups of producers of improved stoves who initially worked in three villages: Vurusi, Ngitse and Kisanga. The three groups subsequently established their production sites. They were monitored during August to ensure that they had mastered the skills required and to provide support as needed.
- During training, 67 stoves were produced of which 40 were sold. During August, each apprentice made one stove, so an additional 40 stoves were produced.
- Because the materials required for manufacturing the stoves are located some distance away, the first and second group joined to form a single group. From September 2020 to March 2021, this joint group



The participants after the training

Photo: Kasereka Neema Gervais

manufactured 247 stoves and sold 180; the third group produced 191 and sold 140. The remaining 67 stoves, manufactured during training and in August, were soon sold too.

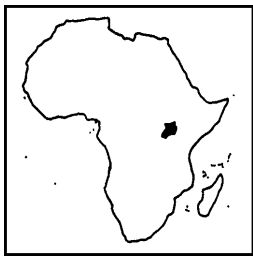
- The total number of stoves produced since the start of the project is 545, 457 of which have been sold.

Manufacturing work continues.

As to the project's goal, the population benefits in two ways: they use the stoves themselves, thereby reducing their consumption of charcoal, and they sell them. This may partly explain why, from October 2020 to March 2021, rangers and trackers observed no collection of firewood in the area where they work. However, they did observe 26 cases of bamboo being cut. Sixteen were related to poaching, in each case 1–4 bamboo poles were cut to set traps. In the remaining 10 cases, bamboo was cut to make baskets or to be used in construction.

The fact that no cutting of firewood was observed can be explained in several ways. In 2016 and 2017, Berggorilla & Regenwald Direkthilfe funded a project that produced and planted 14,000 seedlings around Mount Tshiaberimu. This project was coupled with sensitisation and information activities on gorilla conservation and nature protection. From 2011 to 2014, a large school nursery project allowed almost the entire population around Mount Tshiaberimu to establish small tree plantations, and this is where the people now obtain the wood and charcoal that they need. The project for the manufacture of improved stoves will allow these tree plantations to be maintained in the long term as the use of the improved stoves allows for a minimal consumption of charcoal.

Claude Sikubwabo Kiyengo



UGANDA

Gorilla Baby Boom in Bwindi?

In 2020, many gorillas were born within the Bwindi Impenetrable National Park's gorilla population; an exceptional number of 6 gorillas within 7 weeks even led the Uganda Wildlife Authority to announce a "baby boom". In total, 15 gorillas were born that year, which is comparable to the situation during previous years, as Martha Robbins told us.

The first babies were noted in the Katwe group on 16 January, the mother is Ntabwoba, and in the Kahungye group on 20 January by a female who has yet to be named. The next mother to give birth was Bwebisha in the Mukiza group on 17 February.

In the Muyambi group, a baby was born on 25 April; the mother does not yet have a name as the group with only six members was opened to tourism only in 2019. In the Nshongi family, Kabagyenyi had her baby on 1 May. Births followed in the Nkuringo family on 22 May, in the Mubare group on 22 July by Nyampazi (this raises the group size to 9), in the Oruzogo family on 25 July by Katoto – the baby was named Sabato – and in the Busigye family on 28 July by an unnamed female.

Korogyezi's baby Kwetegyeka (Mukiza group) in December 2020

*Photo: Julius Mutale/
MPI EVAN*



In the Rushegura group in Buhoma, a baby was born by Kibande on 27 August, her fifth offspring. Ruterana in the same family was seen with her third offspring at the beginning of September. Another baby was born in that family on 11 November by Munyana. This increases the Rushegura group's size to 19.

On 4 September, Ndinkahe gave birth in the Mucunguzi family. In the Mukiza group, Korogyezi gave birth on 11 October to Kwetegyeka, raising the number of group members to 15. In the Kutu family, a newly habituated group, a baby was born on 21 October as the 11th member of the group.

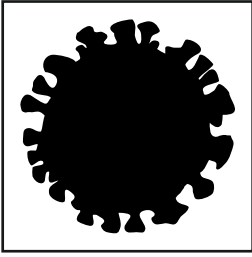
At the beginning of 2021, the first baby was noticed already on 4 January – Nkuringo family's female Nderema gave birth to a new baby, bringing the family size to 12 members. It is Nderema's second infant.

Summary of blog entries by the Uganda Wildlife Authority (UWA) and other sources



The mother Katoto and her baby Sabato (Oruzogo group) in November 2020

Photo: Julius Mutale/MPI EVAN



COVID-19

COVID-19 in Captive Gorillas

Several gorillas at the San Diego Zoo Safari Park have tested positive for SARS-CoV-2, the virus that causes COVID-19. On 6 January, two of the gorillas began coughing and faecal samples from them were tested through the California Animal Health and Food Safety Laboratory System. The U.S. Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) confirmed the positive results. The gorillas were infected with the B.1.429 lineage of the coronavirus, which has been increasingly identified in California and may be more contagious than other strains.

It is suspected the gorillas acquired the infection from an asymptomatic staff member, despite following all recommended precautions including

COVID-19 safety protocols from the Centers for Disease Control and Prevention (CDC) and San Diego County Public Health as well as wearing protective equipment when near the gorillas. This is the first known instance of natural transmission to great apes.

The eight-member group remained quarantined together and was under close observation. Some gorillas showed symptoms including mild coughing, congestion, nasal discharge and intermittent lethargy. The silverback Winston (49) showed more serious symptoms including cough and lethargy, and because of underlying medical conditions underwent a diagnostic examination under anaesthesia. Veterinarians confirmed pneumonia and heart disease. Following consultation with specialists, treatment was initiated, including heart medications, antibiotics and monoclonal antibody (antibodies made by cloning unique white

blood cells) therapy. The monoclonal antibody therapy originated from a supply that was not permitted for human use. The veterinary team who treated Winston believe the antibodies may have contributed to his ability to overcome the virus.

The network of collaborators has also provided San Diego Zoo Global veterinarians with a limited supply of a recombinant purified spike protein vaccine, intended for use in protecting animals against SARS-CoV-2. The vaccine doses originated from a supply strictly intended for nonhuman use. In the meantime, orang-utans and bonobos received their vaccination at the San Diego Zoo.

San Diego Zoo Safari Park reopened for the public on 13 February, 2021, making it possible to see the gorillas again who had fully recovered. This was possible thanks to the incredible work of wildlife care professionals, the veterinary team and collaborations with a wide array of colleagues and partners who ensured that the highest standard of care was given to the affected gorillas.

On 25 February, another captive gorilla was tested with positive results for COVID-19 in a faecal sample: the silverback Richard in Prague Zoo. For the other gorillas, results were negative. As some of the keepers' tests were also positive, it is assumed that the virus was transferred to the gorilla by them.

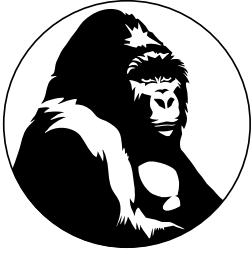
Richard's symptoms were mild: loss of appetite and fatigue. To avoid extreme stress, he was not separated from the rest of the group. During the following days, the females Shinda and Kijivu also tested positive; one of them had no symptoms at all whilst in the other they were very mild. After a week, Richard's condition had improved considerably. Apart from the gorillas, two lions and some other cats were also SARS-CoV-2 positive.

Summary of press releases by San Diego Zoo Global and Zoo Prague



Winston recovering from the infection

Photo: San Diego Zoo Global



GORILLAS

Strengthened Human–Wildlife Conflict Measures Restore Hope in the Virungas

Regardless of the scorching sun and laborious work, a delighted face is the perfect description of Jean Bosco Ntawukibiwabo, as he works on a 3 m deep trench at the boundary of Volcanoes National Park in Bugeshi sector, Rubavu district. The trench is an extension of the buffalo wall built around the Volcanoes National Park perimeter to prevent problem animals, especially buffalos, from crossing over to neighbouring gardens to raid crops. Bugeshi sector is a transboundary area adjacent to both Volcanoes National Park in Rwanda and Virunga National Park in the Democratic Republic of the Congo. Just like other park-edge communities, the community in Bugeshi is challenged by problem animals. However, human–wildlife measures such as the trench and buffalo wall are helping to address the conflict.

“I wouldn’t know the right words to describe how much this trench has contributed to better harvest and household income. With the trench in place our crops are now safe from problem animals that used to destroy them,” narrates Jean Bosco. Jean Bosco recalls the ordeal of having to invest in farming but yielding almost nothing. Several years back, buffalos raided and destroyed his Irish potato farm; where he expected a harvest of one and a half tonnes, Jean Bosco only harvested 500 kg which could not even sustain his family.

Inaugurated in 2004 by IGCP (International Gorilla Conservation Programme) in collaboration with park staff and local communities, the 1 m high and 76 km long dry-stone buffalo wall was established to address Human–Wildlife Conflict (HWC) in the area. Currently IGCP is working with trans-



Renovation works provide an opportunity for park-edge residents to earn a daily wage. With the buffalo wall and trench in place, park-edge farmers hope for better yields without raids from problem animals.

Photo: IGCP

boundary local communities in Bugeshi area and Cyanika in Musanze District to renovate 7 km of the buffalo wall and trench to ensure that the HWC gains are sustained. The trench has been increased in length to between 2.5 and 3 m in depth to minimise any chance of buffalos crossing over from the park into the neighbouring gardens.

The buffalo wall and trench maintenance work was done by members of the local community working under 14 conservation cooperatives at a small fee. Members of the cooperatives reveal that the wages earned from this work enabled them to meet the basic needs of their families, especially food. “Every worker earned Rwf 1500 per day. This money helped most of us to take care of their essentials including paying for community-based health insurance, renovation of pit latrines and food among others,” says Venuste Ndacayisenga, a member of a Land conservation cooperative (KOSUBU).

To ensure its effectiveness, the trench is routinely maintained by the community members during their monthly communal work, locally known as Umuganda. Regular maintenance helps to monitor and patch possible animal escape points usually created

by the heavy rains and floods.

Commenting on the relevance of the existing Human–Wildlife Conflict measures to the community, Jean Bosco notes that the local communities are grateful to IGCP and the park for their effort in addressing HWC in the area. Jean Bosco adds that several people who had lost hope in farming have since been motivated afresh to farm even closer to the park boundary and are optimistic for better yields.

Talking with the community members of Bugeshi, it is clear that the buffalo wall and trench have played a key role in managing problem animals, minimising crop raiding incidences, increasing crop yields and repairing park–community relations.

Meanwhile, the Virunga National Park in collaboration with the park-edge communities in transboundary areas of Kibumba in Congo and Bugeshi in Rwanda successfully erected an electric fence to enforce Human–Wildlife Conflict management. The 2.5 m high fence will cover 3.5 km along the Virunga National Park perimeter and serve as a barrier against problem animals. The erected fence is an extension of the existing 100 km electric fence around Virunga National Park.



GORILLAS



***Erythrina* trees planted along the reinforced stone wall**

Photo: IGCP

In a related development, about 38,100 *Erythrina* trees have been planted along the stone wall in Mgahinga Gorilla National Park stretching from Rwanda to the DRC border points, covering a stretch of 12.7 km.

The actions that were spearheaded by IGCP's Water4Virungas project in collaboration with the local communities and Uganda Wildlife Authority were aimed at preventing problem animals like buffalos from raiding crops in neighbouring farms, reducing conflict and improving park–community relations in the area.

About 40 community members participated in the planting of *Erythrina* and the renovation of the stone wall. Each member earned about 11,200,000 Uganda Shillings that enabled them to meet personal and household needs.

Planted on both sides of the stone wall, *Erythrina* helps in strengthening the stone wall and filling up escape points for problem animals from the park to neighbouring gardens. Additionally, another 1.2 km of the current 12.7 km stone wall was also renovated and strengthened with cement and sand.

“With such HWC management initiatives in place and continued community involvement in conservation works, ownership of established measures will be strengthened, Human–Wildlife Conflict reduced and park–community re-

lations will gradually improve, allowing for peaceful co-existence” says Benjamin Mugabukomeye, IGCP Rwanda Country Coordinator.

Liliane Nakayima

Motherless Gorillas Beat the Odds

Researchers at the Dian Fossey Gorilla Fund have used more than 50 years of data from Rwanda to discover how maternal loss influences young gorillas' social relationships, survival and future reproduction. The study shows that when young mountain gorillas lose their mothers, the rest

of the group helps buffer the loss by strengthening their social relationships with the orphans.

Mothers are incredibly important for survival early in life – this is something that is shared across all mammals. But in social mammals, like ourselves, mothers often continue to provide vital support up to adulthood and even beyond. In many species, like our close relatives, chimpanzees, individuals without mothers suffer higher mortality or may be less successful parents themselves, and this finding can hold even if the loss occurs in early adulthood. But these new findings show that mountain gorillas really go against this trend.



The silverback Bwenge takes care of Ntaribi and Akaramata after their mother died.

Photo: Veronica Vecellio/Dian Fossey Gorilla Fund



GORILLAS

Since 1967, 59 gorillas studied by the Dian Fossey Gorilla fund have lost their mothers after they were able to feed themselves but before they were fully mature (between the ages of two and eight). This happened either when the mother died (30.5% of cases) or when she transferred into another group without them (69.5% of cases). The study shows that these gorillas do not have any greater risk of dying than those whose mothers are still around. In addition, maternal loss does not appear to have any long-term effect on the young gorillas' eventual ability to produce and rear offspring themselves.

What does change, however, is the number of affiliative interactions they have with other group members, which increases dramatically after they are orphaned. This causes them to become better integrated in the social group and may help buffer the social adversity experienced after maternal loss. This support from other group members may be similar to what we see in humans, where other family members and even non-relatives can step into key roles in caring for children.

Mountain gorillas live in close-knit "family" groups including a dominant silverback male who leads the group, multiple adult females, their immature offspring and, in some cases, subordinate adult males. Male gorillas are known to care for young members of their group, regardless of paternity. In her lifetime, Dian Fossey noted, "The extraordinary gentleness of the adult male with his young dispels all the King Kong mythology" – an observation reinforced by this study, which found that the dominant silverback male plays a particularly important role in supporting young motherless gorillas, spending more time close to them and increasing the time spent resting and grooming together. This response was common across all group leaders whether or not they were the genetic fathers. Access to the highest-ranking individual likely

ensures that orphans do not become socially isolated and continue to have access to food and other resources.

Our capacity to care for other group and family members in times of need may be deeply rooted within our DNA and something we share with gorillas. Just like us, gorillas live long lives, so it takes years for researchers to record the rare and fascinating behaviours that occur over a gorilla's lifetime. The Dian Fossey Gorilla Fund's dataset, one of the longest of any animal species, stretches back more than 50 years, helping us understand how much we share with one of our closest relatives as we work to protect them and their biodiverse habitat.

Robin E. Morrison

Original publication:

Morrison, R. E., Eckardt, W., Colchero, F., Vecellio, V. & Stoinski, T. S. (2021): Social groups buffer maternal loss in mountain gorillas. eLife 10, e62939

Increased Gorilla Density May Lead to Increased Aggression

The number of mountain gorillas on the Virunga Volcanoes has increased continuously for four decades now, as was shown during the last censuses. The size of their habitat, however, did not increase during that time, so the gorilla density increased too. This means that the gorillas' competition for resources may also have increased. Damien Caillaud and his colleagues wanted to find out which effects gorilla density had – especially on their social behaviour and whether this affected the growth of this population between 2000 and 2017. They found that behavioural factors had a considerably larger effect on the population growth rate than ecological factors.

In 2007, the group density suddenly increased in a gorilla subpopulation in

the Volcanoes National Park in Rwanda; compared to 2006, the social unit (groups and solitary males) density was two to three times higher in 2007 to 2017. This had a marked effect on gorilla behaviour and demography: it led to a threefold increase in the rate of violent encounters between social units.

During such encounters, females often transfer to other units, so the rate of female transfers per year increased too – it was a tenfold increase between the periods 2000–2006 and 2007–2017. When a mother of an infant transfers to another mountain gorilla social unit, her infant is frequently killed by the new silverback. Therefore, the increase in female transfers led to an increase in male aggression toward infants. The infanticide rate per infant per year increased 4.5-fold between 2000–2006 and 2007–2017. This infanticide increase was responsible for a decrease in the subpopulation's annual growth rate that dropped from an estimated 5.05% in 2000 to 2.37% in 2017. Infanticide is responsible for more than half of the decrease in the growth rate.

During aggressive encounters, more males were wounded fatally during the period 2007–2017 than during the period 2000–2006: seven males compared to one died. Other factors that may contribute to the reduction in the growth rate are for example stress and disease – stress because of the higher number of aggressive encounters and more disease transmissions because of more contacts with other units.

Summary of:

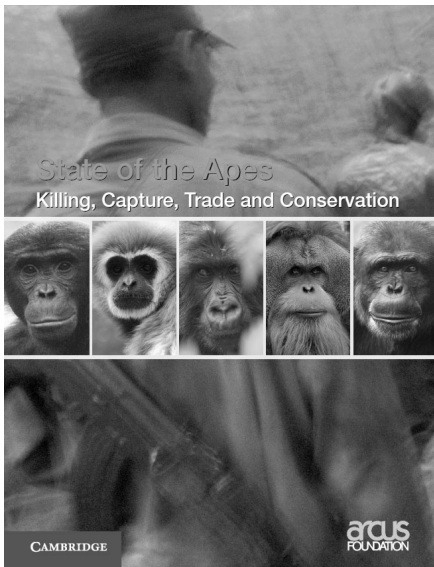
Caillaud, D., Eckardt, W., Vecellio, V., Ndagijimana, F., Mucyo, J.-P., Hirwa, J. P. & Stoinski, T. (2020) Violent encounters between social units hinder the growth of a high-density mountain gorilla population. Science Advances 6, eaba0724



READING

Arcus Foundation

State of the Apes Volume IV: Killing, Capture, Trade and Conservation. Cambridge (Cambridge University Press) 2020. 408 pages. Hardcover ISBN 978-1-108-48794-8, paperback ISBN 978-1-108-73826-2
<https://www.stateoftheapes.com/volume-4-killing-capture-trade/>



Michela Wrong

Do Not Disturb: The Story of a Political Murder and an African Regime Gone Bad. New York (Public Affairs) 2021. 512 pages. ISBN 978-1610398428

Patrick de Saint-Exupéry

La traversée. Une odyssée au cœur de l'Afrique. Paris (Les Arènes) 2021. 317 pages. ISBN 979-1037502865

New on the Internet

The **IUCN SSC Primate Specialist Group, Section on Great Apes** has its own website now: <https://www.iucngreatapes.org/>

Judith Verweijen, Saidi Kubuya, Evariste Mahamba, Esther Marijnen,

Janvier Murairi and Chrispin Mvano
Conflicts around Virunga National Park: Grassroots perspectives. The Hague (Knowledge Platform Security & Rule of Law) 2020. 64 pages. Download PDF (1.6 MB): <https://www.kpsrl.org/sites/default/files/2020-12/Virunga%20Report.pdf>

Commission de recherche sur les archives françaises relatives au Rwanda et au génocide des Tutsi
La France, le Rwanda et le génocide des Tutsi (1990–1994). Rapport remis au Président de la République. Paris, 26 mars 2021. 992 pages. Download PDF (3.67 MB): https://www.vie-publique.fr/sites/default/files/rapport/pdf/279186_0.pdf

UN Security Council
Midterm report of the Group of Experts on the Democratic Republic of the Congo, 23 December 2020, S/2020/1283. 201 pages. Download PDF (13.8 MB): <https://www.undocs.org/S/2020/1283>

United Nations Organization
Stabilization Mission in the Democratic Republic of the Congo
Report of the Secretary-General, 18 March 2021, S/2021/274. 18 pages. Download PDF (667 kB): <https://www.undocs.org/en/S/2021/274>

Pacheco, P., Mo, K., Dudley, N., Shapiro, A., Aguilar-Amuchastegui, N., Ling, P.Y., Anderson, C. and Marx, A.
Deforestation Fronts. Drivers and responses in a changing worlds. Gland (WWF) 2021. 125 pages. https://wwf.panda.org/discover/our_focus/forests_practice/deforestation_fronts/
Download PDF (42.1 MB): https://wwfint.awsassets.panda.org/downloads/deforestation_fronts_drivers_and_responses_in_a_changing_world_full_report_1.pdf

Greenpeace International
Destruction: Certified. Certification; not a solution to deforestation, forest degradation and other ecosystem conversion. March 2021. 121 pages. Download PDF (5.6 MB): https://www.greenpeace.org/static/planet4-international-stateless/2021/03/f66b926f-destruction_certified_09_03_21.pdf

The Economics of Biodiversity: The Dasgupta Review. London, February 2021. 606 pages. ISBN 978-1-911680-29-1. Download PDF (26.7 MB): <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

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<https://legacylandscapes.org/projects/explore/>



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Income in 2020

Subscriptions	24,885.00 euro
Donations	155,436.94 euro
Sales	35.00 euro
Penalties	19,000.00 euro
Refund meeting	36.00 euro
Total	199,392.94 euro

Expenses in 2020

Administration	2,289.51 euro
<i>Gorilla Journal</i>	2,085.40 euro
Website	459.43 euro
Currency differences	130.00 euro
Postage	2,288.95 euro
Pay/top-ups	9,600.00 euro

Sarambwe

Support of trackers and kitchen personnel, equipment, community projects, rice project, rehabilitation of ranger post	46,906.00 euro
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Mt. Tshiaberimu

Tracker top-ups, equipment, water supply well, potato growing, efficient stoves	30,550.00 euro
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Itombwe

Ranger top-ups, office rent, street lighting, CoCoSi	29,320.00 euro
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Maiko

Patrol rations, support park management, canteen for population, street lighting, CoCoSi, community patrol training	26,300.00 euro
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Bwindi

Gorilla research	9,600.00 euro
ITFC employees	8,000.00 euro
SaveBwindi	2,000.00 euro

Virunga Conservation Area

Gorilla Doctors	4,618.51 euro
Protection (COVID-19)	6,215.59 euro
Total	180,363.39 euro

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Many thanks to everybody including those whom we could not list here!



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Photos: Burkhard Bröcker



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