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Daily Protection | Scientific Research | Educating Conservationists | Helping Communities

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Succeeding in critical times

By Tara Stoinski, Ph.D.
President and CEO/Chief Scientific Officer

As we approach seven months into the COVID-19 pandemic, I'm proud to say that we haven't missed a day in the field protecting gorillas in Rwanda and the Democratic Republic of the Congo.

We have seen — as we have in past challenging times — that we can adapt as necessary and stay on the ground in all kinds of conditions, and that our teams are resilient, dedicated, courageous and effective.

I'm also proud that our programs emphasize helping people, especially in these times when social inequities are another major issue society is grappling with.

We are now more focused than ever on scaling up our livelihood and food security programs, our educational and training efforts, and other programs that help provide local people with opportunities and resources.

As has happened around the world, those who are already most at risk are facing the greatest hardships as a result of the pandemic, with communities where we work seeing the loss of tourism-related income and jobs, as well as food supply issues and rising prices.

Extra steps to protect gorillas

In Rwanda, we now have our trackers working in rotation so they can be isolated from the community while on duty. They are also wearing masks, having daily health checks and taking many other precautions.

These measures are critical because recent genetic research shows that the gorillas have



Tracker Jean de Dieu Ndayisenga. Protecting the gorillas is more critical than ever, and we're adapting as needed. We're also scaling up our programs to help people facing increased hardships.

the same receptors for the COVID-19 virus as do humans, though we do not know how the disease might actually affect them.

In Congo, our trackers already work a day behind the gorilla groups, but we have increased our health precautions as well as our anti-poaching patrols there.

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Gorilla births surprise us with timing: On Mother's and Father's Days



Mother gorilla Ubufatanye, middle, cradles her newborn shortly after Mother's Day, as her earlier offspring Tabaro, *left*, and Ingirakamaro, *right*, stay close by and adapt to their new family addition.

Fossey Fund field staff in Rwanda are delighted to report a baby boom of mountain gorilla infants born recently, with more expected.

Three of these were especially wonderful surprises because they were born just in time for Mother's Day in May and Father's Day in June!

In addition to their timing, the birth of these infants is also important and special for other reasons. One was the first infant born in a fairly new group, another added to a really large group now

composed of 21 members, and the third is a grandchild of legendary historic matriarch Poppy.

Two Mother's Day surprises

A small group formed by silverback Urugwiro in September 2019 welcomed its first infant on May 11. The mother is 33-year-old Mudakama, who has given birth to five other offspring, but they all live in other groups. Her last offspring was born in 2013, so we were a bit surprised to see her give birth again after so many years.

This group faced a number of challenges during its formation, including interactions and transfers of females. Mudakama herself changed groups three times during the period when this infant was conceived, so the paternity is not quite clear. But, counting this newborn male, the group now contains four gorillas, including two adult females, the infant and the silverback.

The other infant born on that day was in the very successful and well-established group led by

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silverback Musilikale. The mother is 16-year-old Ubufatanye, who is an accomplished mother with two previous offspring living in the group. These other youngsters are only 5 and 3 years old, making the interbirth interval very short and the family dynamics quite unique. According to our records, Ubufatanye is a record holder. The birth of her three offspring in less than six years is roughly half the time that it would normally take – normal interbirth intervals among the mountain gorillas are four years.

At 2 years old when the newborn arrived, older brother Ingirakamaro was observed staying close to mother Ubufatanye and looking for attention, even though his mother was too busy with the newborn to show him a lot of care. He soon adapted to the new situation, however, and began staying closer to his 5-year-old sister, Tabaro, who is taking care of his need for attention very nicely. Ingirakamaro has also started following silverback Musilikale more closely, to get a bit more attention there too.



Mudakama's infant surprised us in May. Mudakama hadn't given birth since 2013. She's 33 years old and has changed groups several times recently.

And on Father's Day

In a group led by silverback Mutobo, mother Ishyaka gave birth on Father's Day in June. This group, which is only about a year and a half old, is growing even though it faced the transfer of some females recently, as well as interactions with other groups. Mutobo is now the proud father of two infants in the group, which includes five members.

Mother Ishyaka – 15 years old – is the daughter of a famous matriarch named Poppy, who was one of the main gorillas studied by Dian Fossey and a member of a historic line of important females. She joined Mutobo's group in August 2019, the sixth group she has lived in during her lifetime!

Leader Mutobo became a lone silverback in 2017 after leaving Pablo group – where he was born in 2004. He lived alone for two years and then formed his own group in March 2019, gaining females from Mafunzo's group. Unfortunately, he then lost four females in September 2019, when they left to join his brother Urugwiro's group, and another female did the same in December. This year, two more females transferred out to another group, leaving the group now composed of only five gorillas: silverback Mutobo, adult females Ishyaka and Akamaro and their two infants. ■

And that's not all

Several other births have occurred among the mountain gorillas so far this year, and we expect to see more throughout the year.

In Pablo's group, 9-year-old Isangano had her first infant in May. Isangano has two sisters in the group, including 6-year-old Ubukombwe, who is showing good babysitting skills. Isangano's older sister has three offspring of her own, which makes for a large family within the group, providing extra support and protection for the newest infant.

We are always excited to see the growth and

changes in Pablo's group, because it is the longest-studied gorilla group and once reached a record-breaking size of 65 members!

And another infant was born in Musilikale's group this summer, to mother Rugira, who already has a 3-year-old youngster as well.

Our trackers also observed that three infants were born in Kuryama's group, which we saw in February. This group currently spends most of its time ranging out of our tracking area, in the adjacent Democratic Republic of the Congo, so we were especially happy to have a glimpse of them and see that they are doing well and expanding. ■

Campus structures taking shape



We are happy to report on the latest updates at our Ellen DeGeneres Campus in Rwanda, where construction is back on track with a full team, following a six-week pause this spring due to governmental COVID-19 restrictions.

As of late July, 219 workers were on the project, with 80 percent from the local Musanze area.

The most important sections are now seeing their basic components come to life, including the

- Research Center,
- Conservation Gallery,
- Plant nursery,
- Student housing units,
- Education Center.

We have also adopted enhanced protocols and procedures to address ongoing safety, hygiene, cleaning and disinfection, as COVID-19 prevention measures remain important.

Planning work also continues for the inside components of the new facilities, including everything from exhibit details to furniture.

Here is a look at some of the construction progress, as of late July.

To see more and hear from a variety of workers on the Campus, see additional photos and learn how you can become a supporter, please visit: <https://gorillafund.org/building-a-future-for-gorillas> to see the latest photos and videos. ■



Above: Research Center. Settings for steel columns, stone masonry, drainage and other basic substructures are moving ahead quickly. This is where our science labs and research offices will be located.



Left: Conservation Gallery. Progress here includes completion of compaction and concrete work for the foundation. This facility will include a multi-part public exhibit, a theater and other public spaces.

Ellen DeGeneres Campus Update

The plant nursery. We already have about 40,000 plants and seedlings, while propagation of grass is starting on an adjacent plot. These plants will be used to landscape the Campus, including the roof of the Conservation Gallery and other main buildings.



The “Gorillas and You” exhibit in the Conservation Gallery will highlight stories about many of the individual gorillas and groups we have observed over the years, helping to create a sense of connection and showcase their similarities to us.

‘It’s a game changer for conservation...’

— Theo Uwayezu, Campus construction project architect

“*This project means a lot*, not only for me working on it as a Rwandan, but the overall conservation mission of the Campus,” says Campus Construction Project Architect Theo Uwayezu.

“I’m looking forward to this Campus being a game changer for conservation activists in the country,” he says.

“It is great to see the Campus construction back up to full speed, particularly as many of the communities in the area have been hard hit by the

pandemic — this is an important source of employment,” says Fossey Fund President and CEO Dr. Tara Stoinski.

“Even during the shutdown, we were able to move many elements forward. We spent much of the recent months designing content for the public exhibit, which will focus on using our amazing 50+ years of stories and images to connect visitors with gorillas and the remarkable people who are working in gorilla conservation,” she adds. ■



Highlights from our latest scientific publications

Our scientists, collaborating researchers from around the world, and our remarkable students in Africa continue to impress us with their amazing research all the time. Here are short summaries of a few of the 20 studies we've had published recently. We're proud to note that 50 percent of them were led by African scientists.

Is bigger better among the mountain gorillas?

This is a question that we have been studying for several years, along with colleagues at the Max Planck Institute of Evolutionary Anthropology and The George Washington University. And while potential answers to the question of whether size matters are interesting, perhaps even more interesting is how we actually measure the size of the gorillas we monitor, given that we always keep a safe distance from them and that they are truly wild animals.

We use a completely non-invasive technique called "photogrammetry" to take all kinds of body measurements from a distance, using both photography and laser technology simultaneously. Parallel laser markers are placed into the camera images, thus providing a known, fixed scale and reference point for later measurement. Our main points of measurement include the breadth of the back, body length, and in males, the size of the crest (top of the head).

Generally among animals, bigger is often better, since larger individuals tend to be stronger and better able to compete, defend and reproduce. Among the mountain gorillas, our recent paper has shown that large male mountain gorillas do enjoy higher status than smaller ones and are much more successful in reproduction. But among the female gorillas, larger size does not correlate with higher status. We already knew that higher status generally results in more reproductive success, but were surprised to see that physical size was not part of that equation among females.



Silverback Mafunzo is one of the largest we monitor and has been quite successful.

Gorilla friend or foe?

Interactions among gorilla groups and individual gorillas are a significant part of their social dynamics and success, sometimes very intense and sometimes peaceful.

In a recent series of papers published in collaboration with the University of Western Australia, we investigated the causes of aggression between groups.

We found that when groups are comparable in size and the members do not know one another, there tend to be more frequent and more intense fights between the groups. Unsurprisingly, we verified that dominant males participated in conflicts most frequently, defending their mating opportunities. Conflicts also resulted in groups doubling the time that they spent traveling, especially for the losing groups.

In addition to providing insights into gorilla social lives, these studies are helpful for understanding the implications of the growing mountain gorilla population. Because intergroup interactions can result in injury and even death for gorillas, knowing what factors enable gorilla groups to interact peacefully versus aggressively is helpful for modeling future population growth and related issues.

How do we study gorillas' diets?

Although we have staff scientists and collaborate with major universities and research institutions from around the world, we're especially proud of our programs for local university students, who get to develop and carry out studies of their own on a wide variety of topics related to gorillas, biodiversity and conservation. Two of the Rwandan university students who conducted their research projects with us have just had their research papers accepted for publication, showing the importance of their work to both conservation and general scientific knowledge.

Marie Fidele Tuyisenge, who worked with us as a bachelor student and is now a biodiversity research assistant on our staff, has developed a simple, environmentally friendly method for analyzing fecal samples from large wild herbivores, such as the mountain gorillas, to study their diet. This is a relatively

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Publications

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straightforward task when studying mammals that prefer fruits, as we can visually identify fruits through undigested seeds found in their feces. However, herbivores prefer leaves, stems, and roots, which are largely digested into tiny particles that cannot be identified in feces with the naked eye.

Tuyisenge's study showed that a field-based process using a small computer device and a digital field microscope can reliably identify not only what plants the gorillas have eaten but also what parts of the



Marie Fidele Tuyisenge developed a field-based method for analyzing gorilla fecal samples!

Alfonse Nyandwi is comparing fossilized nettle leaves with those the gorillas eat today.



plants. A drop of fecal sample can be quickly prepared and photographed in remote field settings, and then be compared to reference samples already loaded into the computer. This method allows us to compare the diets of the gorillas with other large herbivores, and also to more easily monitor changes in their diets over time due to various factors, such as climate change.

Another notable recent study was led by Dr. Melanie DeVore, a botanist from Georgia College who has helped us to train students in Rwanda, along with former bachelor student Alphonse Nyandwi.

In this study, DeVore and Nyandwi studied fossilized nettle leaves to determine their relationship to current nettle plants where the gorillas live.

Nettles, which can be stinging or non-stinging, are a common component of the gorillas' habitat and their diet.

The authors wanted to investigate whether this plant evolved its protective characteristics in response to pressures from large mammalian herbivores like gorillas.

This study compared stinging nettle fossils from western Canada that date back to the early Eocene era roughly 50 million years ago, with current nettle leaves collected by Nyandwi and Fossey Fund trackers. The results suggest that nettles did indeed develop their stinging weapons millions of years ago to protect themselves from predation. ■



'Murakoze' — 'Thank you' in Kinyarwanda

Our legacy is your legacy, too

The Dian Fossey Gorilla Fund has been a leader in the protection and conservation of gorillas since 1967, when Dian arrived in Africa to dedicate her life to this important work.

Without her dedication and fierce commitment to the protection of this amazing species, it is not unlikely that mountain gorillas would be extinct, and their forests and other wildlife would look very different than what we see today.

Instead, with more than 50 years of continued commitment, the mountain gorillas' numbers have doubled and they are the only wild ape whose population is increasing.

That is Dian's legacy, but it is also the legacy of all those who followed her, as well as all of those who — like you — have supported the work of the Dian Fossey Gorilla Fund

Planning for the future

And this is a long-term scenario, as the world's gorillas and ecosystems must be continuously protected for future generations, along with the advancement of conservation education, activism, leadership and science.

'I can't up my contribution right now, but you are in my will, and since I don't have children, I have also adopted the animals.' — *Supporter Eva*

Luckily, each of us can play a role to ensure this future, as Dian did, and in having our efforts live well beyond ourselves. With estate and planned giving, any of our supporters can take the opportunity to build a personal legacy, one that will live alongside that of Dian and the many others who have dedicated their lives to saving the gorillas.

'We have a legacy commitment because we believe the work you are doing needs to go on forever. So one of the organizations we designated in our will is the Fossey Fund.' — *Supporter Calvin*

There are many ways to build your own conservation legacy. If you would like to learn more about these opportunities, *please contact* our Chief Advancement Officer Shari Henning at shenning@gorillafund.org. ■

Succeeding

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Our trackers in both countries report that the gorillas we monitor are doing well and are engaged in their normal behaviors.

However, the pandemic does result in additional pressures on the forests, because people may go there to find food, water and other materials during hard times like these. Increased snares, while generally set for game animals, are still a danger to the gorillas, as is other human activity in the forests. The killing of silverback Rafiki in Uganda was the first direct killing of a mountain gorilla in almost a decade, a result of people being in the forest hunting for other animals.

A lesson to remember

The COVID-19 pandemic may seem to have arrived out of nowhere, but we in the conservation community weren't surprised that it happened. We've been warning for years that human destruction of wild ecosystems threatens nature's delicate balance and puts wildlife and humans at risk, while also leading to dangerous climate change.

And as COVID-19 has made so clear, by destroying nature, we are also creating the perfect conditions for some diseases that exist in wildlife to make the leap to humans.

Here at the Fossey Fund, we believe that our people-focused wildlife conservation model is an important avenue to not only preserve our earth's critical wild

lands and species, but also to help stop these animal-to-human disease scenarios.

I hope we can all continue learning from this hard lesson and ramp up our efforts to heal our forests, our planet and ourselves, because conservation remains a critical component of the world's health.

And we move forward

I'm thrilled that we are expanding on two important fronts, even in these challenging times:

First, in Congo, where our unique model of working with community-managed forests is highly successful, we are engaging with additional landowners who are interested in joining, expanding the area and number of gorillas that we can protect. We now have a strategic goal of protecting a half million acres over the next five years. This will go a long way toward saving the critically endangered Grauer's gorillas.

And second, construction work resumed on our Ellen DeGeneres Campus in Rwanda, which is scheduled to open in 2021. This Campus will be much more than just a place to work, as our focus is on the broader impact that we want it to have, not only enhancing conservation and science, but increasing educational opportunities, improving livelihoods, addressing social inequities and more.

After 53 years and numerous challenges of all kinds, we are proving stronger and more determined than ever. ■

How to build your own conservation legacy

There are many vehicles that allow you to provide for your loved ones and also make a planned gift to the Dian Fossey Gorilla Fund:

- wills and living trusts,
- life insurance policies,
- retirement plan required distributions,
- bank and investment accounts,
- gifts of stock or securities, and
- donor-advised funds.

To learn more, please contact Shari Henning: shenning@gorillafund.org

World Gorilla Day is Sept. 24

This day began in 2017 to coincide with the founding of our Karisoke Research Center by Dian Fossey in 1967. Her legacy has helped save the mountain gorillas, but all gorillas remain endangered and face many threats to survival.

For ideas on how to help gorillas, please visit <https://fosseyfund.salsalabs.org/worldgorilladay> and stay tuned to our social media.



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