



Gorilla Journal

June 2022

From studying gorilla genetics to expanding protection in Congo . . .

We're always learning, growing

By Tara Stoinski, Ph.D.

President and CEO/Chief Scientific Officer

2022 continues to be an exciting year for the Fossey Fund, and I hope you will enjoy reading about how we are growing in so many ways — from our new facility in Rwanda to new scientific work to more forests under our daily protection. Thank you, as always, for your support in making these exciting accomplishments happen.

Scientific discoveries continue

Science is what brought me to the Fossey Fund and it is my passion. And so it is always fun to share some of our scientific discoveries. In this issue, you'll discover what we are learning from our some of our latest studies of gorilla genetics. Spoiler alert — being the dominant silverback doesn't guarantee your spot as dad! (*See the latest surprises on page 2–3*).

Congo community forests expand

On Earth Day this April, we proudly announced a major 50% expansion of the Nkuba Conservation Area in the Democratic Republic of the Congo, where we have been working for the last decade to provide protection to the critically endangered Grauer's gorillas through a partnership with local communities. It's also home to at least nine globally threatened large mammals, and part of the world's second-largest tropical rainforest — the literal lungs of the planet and one of our best natural defenses against climate change. (*Details on page 6*).

And at our beautiful Ellen Campus

It is wonderful to see our new home come to life! Having worked on this project for more than four years, it was such an emotional moment for me to step onsite



Our latest genetic studies reveal a lot of secrets about silverback fathers like Urwibutso. He's not a dominant group leader but has a special strategy for siring offspring! *Details on page 2.*

for the first time after construction was complete and our team had moved in. The facility is all we hoped for and so much more (*story on page 4*) and we were thrilled to have it featured in the May issue of *Architectural Digest*.

One of the most rewarding aspects is to see how the campus has elevated conservation. When people visit it, they grasp the importance of what we are doing to save a species. And this was our goal — to have the campus serve as an entry to conservation awareness and activism. We are all looking forward to the official dedication ceremony in June and then celebrating our 55th anniversary on Sept. 24, which is also World Gorilla Day! ■

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Ellen Campus: The "It's All About Family" exhibit, page 5.



DNA discoveries

Solving the puzzles of gorilla paternity



Silverback Pato, left, is technically the dominant male in his group, yet second-ranking **Urwibutso, right,** has developed a unique strategy for mating opportunities. Our latest genetic studies have revealed some of his successes.

It's like Ancestry.com for gorillas — with different techniques, of course. Since we monitor mountain gorillas daily, we know who the mothers are simply from observation. Determining the fathers is not always as easy, because some mountain gorilla groups have more than one adult male.

Knowing paternal lineage is important for several reasons. Mountain gorillas have a small population of only about 1,000 individuals. The portion of the population we study, in the Virunga mountains, has only about 600 individuals. These small numbers mean it is important to understand how much genetic variability is in their gene pool, because it could affect the long-term viability of the population.

In addition, when studying social dynamics, it is important for us to know who is related to whom, as this can impact behavioral choices.

In multi-male gorilla groups, the only way to definitively determine the fathers of any given infants is to test their DNA. Luckily, new technology and tools allow us to do this without disturbing the gorillas at all.

How we test gorilla DNA

It turns out that the genetic information we want can be extracted from gorilla fecal samples. Samples

are collected in the field and then processed in our labs to preserve the DNA. These samples are then shipped to the Max Planck Institute for Evolutionary Anthropology in Germany, our partner in this long-term genetic research.

Because of their small size, we generally are not able to get samples from infants until they are about 2–3 years of age, which feels like a long time when we really want to know who the dad is!

What we've learned

One of the most surprising results of our paternity research so far has been discovering that dominant males sire only about 70% of offspring. The rest are sired by lower-ranking males in the group, even males as young as 9 years old! To date, we have not found any offspring sired by males living outside of a group.

These results have important implications for our understanding of the social bonds between individual gorillas as well as group dynamics overall.

It also brings up more questions that we are still studying, such as why do females breed with low-ranking males — do they have special friendships or are they avoiding inbreeding?

Both topics are ones we are investigating now and we look forward to sharing the results soon! ■

So, who is my dad?

Here are some interesting recent paternal DNA discoveries from the gorillas that we monitor:

■ **Silverback Vuba** holds the record for being the youngest male to sire an offspring, when he was only 9 years old. That offspring, Igihozo, is currently the dominant silverback of Kuryama's group.

Our genetic studies show that silverback Vuba was the youngest male to sire an offspring, among the gorillas we monitor. He was only 9 years old at the time.



Young Macibiri is famous for being named on our 50th anniversary, by Fossey Fund President and CEO Dr. Tara Stoinski. The name reflects Dian Fossey's own nickname, "Nyiramacibiri." Now Macibiri has another claim to fame — a surprise father!



■ **Silverback Twibuke** was once the lowest-ranking silverback (at number 7) in Shinda's group, and yet he first sired his first offspring at that time. This was surprising because the mother, Nahimana, was very close to dominant silverback Shinda. Twibuke is now the dominant male of Ntambara's group, a wonderful path of success from his earlier years.

■ **Silverback Gicurasi** sired his first offspring a full decade before he became dominant. Legendary silverback Cantsbee retained leadership of this group until his death, yet he didn't sire any off-

spring for a long period of time. This highlights the variety of factors that may contribute to a male's overall leadership success.

■ **Silverback Isabukuru** sired three infants in Pablo's group while his big brother Cantsbee was dominant. Isabukuru then split from Pablo's group in 2017 and formed his own group, where he sired many more infants.

■ **Tayna** was the last known infant of the legendary silverback Titus, who remained dominant for another seven years after her birth.

■ **Macibiri's** father is a surprise! In the current Titus group, which has three silverbacks (dominant Pato, second-ranking Urwibutso, and Segasira), we recently learned that young Macibiri is the daughter of Urwibutso, not Pato as we expected.

Mother Kurudi

was the only female in the group at the time and was very close to Pato, so we had assumed he was the father.

But the dynamic between Urwibutso and Pato has always been unusual, with Urwibutso only presenting a challenge each time a female is in reproductive status. It's interesting to see that this behavior has paid off for him, genetically speaking.

Genetic research evolves

Our genetic studies are proving especially useful, as the mountain gorilla population is growing, with more groups forming and evolving.

This growth means that the social dynamics of the gorillas we monitor is becoming more complex over time, and the more information we have the better we can understand them.

We are excited to continue our paternity research and to keep learning about — and revealing — the secrets of gorilla reproductive strategies. ■



Local primary and secondary students now regularly visit our new Ellen Campus, learning more about gorilla conservation and biodiversity throughout our exhibits and landscape.

Our Ellen Campus . . .

Blossoms with activity and beauty, inside and outside

It's only been a few months since we opened our Ellen DeGeneres Campus in Rwanda, and we are already accomplishing so much of what we hoped the campus would do, including many activities that we could not have done in our previous limited facilities.

One of the main goals of the facility is to help increase wildlife conservation and awareness in the local area, and we now have incredible teaching materials there to do just that — both inside our Cindy Broder Conservation Gallery, and outside with our trails, wetlands, weather station, and the incredible variety of native plants and animals that make up the Cleveland Metroparks Zoo Interpretative Trails.

In the first three months after opening, we had more than 1,500 local school students and their teachers visit the campus. The



This replica of Dian Fossey's cabin is part of the “Dian's World” section inside our new Cindy Broder Conservation Gallery.

students tour the public exhibit and learn about gorilla conservation and other biodiversity in the nearby Volcanoes National Park. They also participate in educational scavenger hunts outside on the trail network.

We have also been able to host our educational activities for secondary students in our Citizen Science program. Students from 12 nearby schools are participating in actual research by collecting data on the bird species which are now return-

ing to this former agricultural land.

And, of course, the Ellen Campus is open to all visitors. We've already hosted more than 4,000 people — a number equivalent to what we hosted in a whole year just prior to the pandemic!

Inside

The Conservation Gallery

The exhibits for visitors coming to the Conservation Gallery include three main sections:

■ **Dian’s world.** Here is where visitors step into history, viewing a timeline of Dian Fossey’s life and work, stories about her life and her favorite gorillas, as well as a replica of her cabin in the forest.

The cabin includes real artifacts, such as a desk, chairs, books, photos, letters, and even some of her clothing.

■ **Gorillas and you.** This area brings the gorillas to life by highlighting stories about specific gorillas we have observed over the years and showing how similar they are to us — from taking care of their most vulnerable to mourning the loss of a family member.

Some of the most famous gorillas we’ve studied are featured in the Gorilla Hall of Fame, and there’s also a kiosk where visitors can learn how to make gorilla sounds.

A highlight is the Irmelin DiCaprio Theater, a 360-degree experience that immerses viewers in a gorilla family and is a favorite among school children.

■ **Modern conservation.** This section focuses on showing the work that is happening now to save gorillas. Interactive experiences allow the visitor to track how the Fossey Fund studies gorilla movements and to participate in citizen science activities by coding photographs from our camera traps in Congo.

There are also replicas of the bones of gorillas we have studied that illustrate how we continue to learn from the gorillas even after their death.

One of the most popular parts of this section is the Gorilla Game Changer wall, which highlights the many types of people involved in modern day conservation — from trackers to scientists to teachers and community leaders.

Before leaving the exhibits, visitors can take a quiz about how they would like to help with conservation, and take a photo showing their commitment to helping gorillas.

■ **Café, gift shop, terrace.** The Conservation Gallery building also includes a gift shop managed by a Rwandan fair-trade artisan group called Azizi Life, featuring locally made baskets and other local crafts. Nearby, the Gorilla Café offers food and drinks, served by our partner Food and Stuff. These can be enjoyed with the stunning views of the Virunga mountains outside.

Outside Plants, frogs birds and more

Another important goal of the Ellen Campus design was to help restore native plants to the land,

which had formerly been agricultural and grassland fields. We planted more than 250,000 native plants — representing 110 different species — and have found that as the plants are growing, native insects, frogs, birds and other species are increasing in numbers. Some of them had not even been present in our pre-construction survey, a clear sign that the native vegetation we planted is attracting new species.

We are also beginning to see the return of more specialized species, those that prefer forests or wetlands to crop fields. The wetlands now attract herons, for example, and the

*See **Ellen Campus**, page 8*



Also featured are the gorillas we have studied over the last 55 years, below, as well as information on the other animals and plants that live in the forest with them.





Most Grauer's gorillas live outside of national parks, so we are expanding protection in community forests.



Expanding protected Grauer's gorilla forests in Congo

On Earth Day this spring we proudly announced a 50% expansion of the community forests where we protect critically endangered Grauer's gorillas in the Democratic Republic of the Congo. Called the Nkuba Conservation Area (NCA), it now includes 2,379 square kilometers within the Congo Basin, which is the world's second-largest tropical rainforest.

This year also marks the 10th anniversary of the NCA, a wonderful long-term relationship between local communities and the Fossey Fund, and a model for conservation in the region.

Community forests are critical

The NCA is crucial because most Grauer's gorillas live outside of national parks, meaning they have had no formal protection. It is estimated that their population has declined by more than 60% over the last few decades.

Inside the NCA, we are employing our boots-on-the-ground approach to conservation, and protecting these

community forests every day, along with the estimated 300 Grauer's gorillas that live there.

The area houses at least nine globally threatened large mammals, including Grauer's gorillas and chimpanzees, and serves as a carbon sink for an estimated quarter billion tons of carbon. Yet deforestation rates have accelerated over the last two decades and threaten the long-term survival of the Congo Basin.

Last year, the NCA received official recognition from the Congolese government, and we have a 25-year management agreement with community leaders to help develop sustainable management plans for the forest.

Direct protection plus...

In addition to direct protection of the forest, our conservation model here also includes research on this understudied ecosystem, training of young Congolese scientists, and initiatives focused on food security, livelihoods and education for local communities.

"We are doing more here than protecting the critically endangered Grauer's gorillas," says Urbain Ngobobo, the Fossey Fund's country director in Congo.

"We are also investing in the community, providing hundreds of jobs and developing education, livelihood and food security initiatives. Our model of 'Helping People, Saving Gorillas' is key to our success. We know that from decades of work in Rwanda and now we are seeing it expand and flourish in Congo as well." ■

Silverback Mafunzo: A leader to remember

Every individual gorilla is critical to the population of this endangered species, and the life of a dominant silverback is especially important. Silverback Mafunzo, who died on April 19, exhibited all the best qualities of a mountain gorilla group leader, forming a group when he was young, expanding it quickly, protecting them well, and being a great father to his offspring.

We have monitored Mafunzo since his birth in 1999. He was part of an impressive mountain gorilla family named after his grandmother, Effie, whose members are known for their leadership, large size and other notable qualities. He was born into the historic Pablo gorilla group, which reached the enormous size of 65 gorillas when he was growing up.

When Mafunzo turned 13, he left Pablo's group and became a solitary male, before forming his own new group within the next two years. That group expanded under his leadership to include 10 gorillas at the time of his death.



Young Suraurwanda holding on to Mafunzo, in 2021.

Mafunzo was a special silverback in many ways, says Jean Paul Hirwa, Fossey Fund senior manager of program operations in Rwanda. "He had a very distinctive personality even at a young age. He was good at attracting females to join his group and was very

protective of all its members. He was also a good father, tolerating young gorillas playing on him. All the youngsters in the group were close to him."

"I have known Mafunzo for 17 years," says Veronica Vecellio, Fossey Fund gorilla program senior advisor. "He had a 'positive confidence,' and will be remembered as one of the most-successful silverbacks, strong and bold."

"Mafunzo was loved by every gorilla in his group and was wonderful to all of them," says James

Munyawera, research assistant. "He leaves behind two adult females and seven youngsters. Like the members of his group, I was not ready to accept that he has left us. I will forever remember him as a great silverback that I have lived with." ■

Help save the species with gorilla 'adoptions'

The Fossey Fund's symbolic gorilla adoption program is a wonderful way to develop a personal connection with the gorillas we protect and study every day.

Adopters or their gift recipients receive online adoption certificates, photos, profiles and a video of their gorilla, as well as updates.



Our adoption program now includes Mubyeyi, left, and Kabeho, both the offspring of silverback Ishavu.

New gorillas have recently been added to our adoption program, including infants, a silverback, and a mother-infant pair.

And, for the first time, we have a brother and sister duo available as well: Mubyeyi and Kabeho, who were born in late 2020.

When you visit gorillafund.org/adopt, you'll get to choose which gorilla you want to adopt. Gorilla adoptions also make unique and meaningful gifts for your loved ones.

Sign up!

Free monthly Gorilla eNews
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Ellen Campus

Continued from page 5

presence of dragonflies and frogs — which create an incredible soundtrack for the campus in the evening — indicates that these new ecosystems are healthy and thriving.

We're also curious to find out which mammals visit our campus at night, and so we've installed camera traps that will take photos for us remotely. ■

Frogs, birds and other species are returning to the landscape we have created at the Ellen Campus, as part of our design to restore the original ecosystem.



How to build your own conservation legacy

There are many ways to make a lasting and meaningful contribution toward gorilla conservation, in addition to direct cash donations.

Such planned giving has an extraordinary impact on our work, enabling us to ensure that our successful model of conservation continues to thrive long term.

These gifts may also provide tax benefits for you. And it's never too early to think ahead — year-end gifts provide nearly 40% of our annual revenue!

Giving options include:

- **Gifts** of stocks/securities
- **Distribution from a Donor Advised Fund (DAF).** This can be done right from our website, using DAFDIRECT (gorillafund.org/DAF)

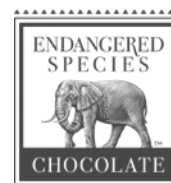
■ **Doubling your gift** if your company is one of thousands that match employees' contributions. You can now use 360MATCHPRO directly on our website to see if your company is included. (gorillafund.org/matchinggifts)

■ **Naming the Fossey Fund as a beneficiary** in your will. This will make you a member of our Legacy Society, showcasing your conservation legacy for generations to come.

To learn more about planned giving options, please visit our website at gorillafund.org/plannedgiving

Or contact Shari Henning: shenning@gorillafund.org.

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