

Gorilla Journal



Pablo's group of mountain gorillas is the largest one monitored by the Fossey Fund, with 30 members at the end of 2014.

2014 Annual Report Edition

Saving gorillas: successes, changes, challenges

Unlike all other species of apes, mountain gorilla numbers are consistently increasing, thanks to daily, intensive, on-the-ground monitoring, an outgrowth of the pioneering work Dian Fossey started almost five decades ago. In 2014, the Dian Fossey Gorilla Fund not only continued this critical work but also made significant progress in efforts to study and protect Grauer's gorillas in the Democratic Republic of Congo.

In addition, our investments in science and staff advancement are resulting in important steps forward in our organizational development. Felix Ndagijimana, who started with the Fossey Fund in 2004 as a research assistant, became director of our Karisoke Research Center in 2012 and now serves as director of all our Rwanda programs. Scientist Winnie Eckardt, Ph.D., who also started as a research assistant, and has since published major scientific studies based on work with the "Karisoke" gorillas, is now research manager there, our first on-site, full-time scientist since the early 1990s. Several long-time Rwandan assistants now hold officer-level positions (see sidebar on page 4) and we also have a full-time scientist (Damien Caillaud, DVM, Ph.D.) leading our Grauer's gorilla work in Congo.

Another integral piece of our work is getting the data we

collect, and the related scientific studies, out into the larger scientific community. In 2014, we produced 11 scientific papers that were published or submitted for publication in scientific journals, such as *Animal Behaviour* and the *American Journal of Primatology*. (Read more about these studies on page 3.)

Success brings challenges

However, our success protecting gorillas presents us with a variety of new challenges. In Rwanda, we now monitor triple the number of mountain gorilla groups that we did just seven years ago, and these groups range over a much larger area than they used to, as they try to avoid each other and the potentially lethal fights that can occur when groups interact. We know that without protection for these new groups, our successes over the last few decades will disappear. And so we have increased our field staff at Karisoke to more than 70 individuals, to ensure that each gorilla group is accompanied by a protection team every day and that our anti-poaching teams can cover even larger areas of the forest to remove snares and other threats to the gorillas.

In Congo, we have now surveyed a 700-square-kilometer

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Dian Fossey Gorilla Fund International
800 Cherokee Ave., SE
Atlanta, GA 30315-1440
1-800-851-0203



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Protecting and studying mountain gorillas

In 2014, the Dian Fossey Gorilla Fund continued its program of monitoring, protecting, and studying roughly half of the habituated population of mountain gorillas in Rwanda. We continued to increase our field staff there to ensure that each gorilla group is accompanied by a protection team every day.

Gorilla protection and monitoring

At the end of 2014, there were 116 gorillas in nine groups designated for study and monitoring by the Karisoke Research Center.

Throughout the year, 11 gorillas were born and 10 died. One new group formed during the year and one group disintegrated after the death of the dominant silverback. One group normally monitored by Karisoke staff spent eight months in a section of the park that is in the Democratic Republic of Congo, returning to Volcanoes National Park in Rwanda in December.

In addition, Fossey Fund staff conducted 317 anti-poaching patrols, plus 60 patrols with local park authorities (the Rwanda Development Board/Department of Tourism and Conservation, and the Uganda Wildlife Authority). Karisoke staff alone removed roughly one-third of the snares found in the park in 2014 (317 snares). No gorillas died as a result of snare injuries in 2014, and only one gorilla was caught in a snare, down from four gorillas in 2013. The number of snares found was 17 percent lower than in 2013, which was likely an outcome of community informant and education programs aimed at suspected poachers during the latter half of the year.

Data collection and management

Our trackers, field data technicians, and researchers collected daily demographic, health, and ranging data regarding the gorillas, all of which are entered into the Fossey Fund's



Kuryama's group traveled out of our tracking range for many months in 2014.

long-term database and shared with national park authorities and relevant partner organizations. We also collected 5,000 hours of detailed behavioral data in 2014, and supported both doctoral and postdoctoral work in the field. Collecting and managing this amount of data is challenging, but with support from Oracle Foundation we are finding solutions. For example, we began developing an iPad-mini application that will be used to collect our long-term behavioral data, which will upload directly into a cloud database. This will enable us to use data in real time to make decisions about gorilla management. It will also enable us to increase our scientific productivity, in terms of accuracy and efficiency.

In addition, we were able to convert to electronic data collection for all of our ranging, demographic, and illegal-activity data. These data will eventually feed directly into the Oracle database.

The Karisoke gorillas

The dynamics of the Karisoke gorilla population have changed considerably over the last seven years. In particular, the splitting of three main gorilla groups that we studied for many years into the

Noteworthy gorilla events

Through daily monitoring and patrols, we observe many life events among the gorillas. Some of the 2014 highlights:

- Leading silverbacks Umushikirano (Rano) and Bwenge died, leaving their groups with a lot of challenges.
- Elderly female Maggie took over leadership of a group temporarily after Bwenge died. This was the first documented case of a female leading a group.
- The two largest groups of mountain gorillas — Pablo's group (headed by silverback Cantsbee) and Susa group

(which is tracked by Rwanda park authorities for tourism visits) — engaged in a period of frequent interactions.

- Kuryama's group spent an extended amount of time (from April to December) out of the range of our trackers.
- Silverback Mafunzo formed a new group that was first seen on Jan. 27.
- Several silverbacks became solitary, including Kubona and Urugwiro. Inshuti also became solitary after a few failed attempts to merge with females.
- Thirteen females were involved in 22 transfers during the year!



We now have more than 70 staff in Rwanda monitoring, protecting and studying the mountain gorillas.

current nine groups has resulted in a number of new challenges. First, the groups are experiencing many more violent interactions as they encounter each other more frequently. To escape this, some groups are ranging farther away and at higher altitudes in Rwanda, while others cross the border into Congo, where we are unable to patrol. They generally avoid other available areas of Volcanoes National Park where there are no regular, active patrols and thus more human disturbance and potential dangers, particularly in the form of snares.

We are adapting our activities in the field to deal with these new challenges, since the daily monitoring of the gorillas under our care remains critically important. Monitoring enables us to check on each individual gorilla every day to see if any have been injured, caught in snares, or need veterinary attention. At the same time, we need more staff in the field to search for gorilla groups that have disappeared from their normal ranges, as well as to patrol new areas of the park they may have moved into. Finally, the increased ranges of some of the groups have required us to provide more rest days for trackers, who often travel six hours on foot just to reach a group.

To handle this increased staffing need while not decreasing

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Selected gorilla studies published in 2014

In 2014, the Fossey Fund produced 11 scientific papers that were either published or submitted for publication during the year, with input from the following current Fossey Fund scientists: Tara Stoinski, Ph.D.; Damien Caillaud, DVM, Ph.D.; Winnie Eckardt, Ph.D.; Felix Ndagijimana; Veronica Vecellio; Jean Paul Hirwa; and Didier Abavandimwe. Numerous former scientists who worked

at Karisoke were also involved in these studies, including Dieter Steklis, Ph.D., Katie Fawcett, Ph.D., Cyril Grueter, Ph.D., and Stacy Rosenbaum, Ph.D.

Topics included study of mountain gorilla:

- Ranging patterns
- Personality structures
- Paternal behavior
- Male-infant relationships, and
- Paternity patterns and inbreeding avoidance.

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our daily monitoring activities, we hired an additional six field staff, taking our total number to 69 at the end of 2014. The number was up to 76 in early 2015. The extra staff will enable us to keep up with far-ranging groups and conduct anti-poaching patrols over a larger area of the park, while at the same time continuing to provide daily protection to the groups we monitor.

Studying the mountain gorillas

Through engaging our staff, local university students, and partner scientists from around the world, the Fossey Fund nurtures a wide array of research studies about the mountain gorillas and their habitat. We also actively study the other animals and plants that share their ecosystem.

Most of these studies are also shared with the entire scientific and general community, through publication in journals and at workshops and conferences.

In addition to the studies published in 2014 and routine daily data collection on the gorilla groups, scientific studies underway at Karisoke in 2014 included:

- **A growth and development study**, coordinated by Shannon McFarlin, Ph.D., and Jordi Galbany, Ph.D., of the George Washington University, in conjunction with Karisoke research assistants, in which measurements from special distance photographs are used to analyze detailed physical characteristics.

- **Intergroup interactions project**, by Melanie Mirville of the University of Western Australia, to study the causes and consequences of interactions among the gorilla groups.

- **University of Rwanda students working on the following mountain gorilla studies**, among others: ages at which males become silverbacks; motor patterns of nest-building behaviors; incisor wear and age determination; and the ranges of the gorilla groups.

- **Collecting DNA samples for an ongoing paternity analysis** in conjunction with the Max Planck Institute.

All such studies, while important for pure scientific reasons, are also significant for the greater understanding of the gorillas, their habitat and how to create the best conservation management practices. With nearly 50 years of data on the mountain gorillas, the Fossey Fund's Karisoke Research Center is truly a critical hub for science and knowledge collection.

Education efforts at all levels

Our relationship with the University of Rwanda (UR) continued to grow in 2014. Six students who conducted field data collection for their undergraduate thesis projects at Karisoke in 2013 completed their dissertations, under the supervision of Karisoke researchers, and eight new students arrived at Karisoke to begin fieldwork for their dissertation projects.

More than 180 UR students at the second- and third-year levels participated in undergraduate field courses and internships offered at Karisoke. These courses and internships are focused on conservation biology and are integrated within the university curricula. All Karisoke research staff participated in the UR education program by conducting training sessions,



Mountain gorilla trackers learn how to use Cybertracker.

Staff development in Africa

The Fossey Fund has long been committed to advancing the capacity of our field staff, and local students. In 2014, this included:

- Promotion of two Rwandan research staff to officer positions: Jean Paul Hirwa to gorilla protection and monitoring officer and Theodette Gatesire to gorilla data officer.

- Promotion of Karisoke Director Felix Ndagijimana to director of Rwanda Programs.

- Sending five staff (two on full scholarship) to the Congress of the International Primatological Society.

- Hosting 187 University of Rwanda students at Karisoke for field courses in primatology and conservation biology.

- Hiring long-time Karisoke researcher Winnie Eckardt, Ph.D., as research manager, our first full-time on-site scientist since the 1990s.

- Hiring a Congolese research assistant for science at Kahuzi-Biega park – Gloria Maroyi.

- Supporting staff to make presentations at major scientific meetings, such as Didier Abavandimwe at the American Association of Physical Anthropologists.

giving lectures, and leading activities in the field.

The Fossey Fund also continued to deliver a conservation education program in six primary schools around the park, supported by Nature's Path and reaching some 1,892 young students. We gave 188 best-performing Primary 5 children from the six schools an opportunity to visit the park on a guided nature walk and to see golden monkeys.

With the assistance of Partners in Conservation at Colum-



Our biodiversity program monitors golden monkeys.

Studying other animals and plants

The Virunga mountains are home to many other important animals in addition to the gorillas — and lots of plants too.

The Fossey Fund's biodiversity program at Karisoke is led by Deogratias Tuyisingize, who came to Karisoke 10 years ago as a biology student from the University of Rwanda. He did his undergraduate project on golden monkey behavioral ecology and habituated two groups of monkeys for study and tourism.

In 2014, the program he now directs focused on the following major projects: golden monkey behavior; biomass of gorilla food items within Volcanoes National Park; bamboo phenology; and monitoring of common birds, amphibians, and weather patterns.

Some highlights from this work in 2014 include:

- The largest golden monkey group that we follow has more than 100 individuals (most of them females). Fifteen births were recorded in the group from September to October!

- Bamboo shoots (a favorite gorilla food) were most numerous in October, while the spring 2014 season had an unusually low number of bamboo shoots.

- During 76 days of common bird monitoring, we recorded 16 endemic species, four threatened species, and six migratory species, with the aim of establishing trends among bird populations.

- Ten amphibian species were recorded in swamps within Volcanoes National Park.

bus Zoo, we continued to support Bisate School near Volcanoes National Park by providing school supplies to 2,301 primary and secondary school students at the school. Partners in Conservation and the Fossey Fund have also partnered on a project to build a library and a computer lab at Bisate primary school. The construction was completed in September 2014 and soon the building was equipped with desks, chairs and bookshelves. Computers were ordered and the center was prepared for its official opening in 2015.

A healthy environment for all

In 2014, the Fossey Fund's ecosystem health efforts based at Karisoke continued to be aimed at reducing health threats facing wildlife in Volcanoes National Park, and tackling health problems that hinder the socio-economic development of people living close to the park. Three main activities in this work include: assessing and treating intestinal parasites in people around Bisate village, close to the park; assessing the success of a radio drama we helped create in 2013 as a tool for conservation education; and piloting a new interactive communication approach regarding water, sanitation and hygiene education, by working with school children.

Over the last decade, the Fossey Fund has delivered more than 50,000 treatments for intestinal parasites to the Bisate community, through a relationship with the Bisate Health Clinic. Recent data show that infestation with parasites is significantly lower in Bisate than in a new village sampled in 2014. In 2014, 250 people were tested for intestinal parasites and treatments were provided for those who tested positive and for prevention in others, totaling 1,550 treatments.

We are now working with public health experts at Emory University to determine additional steps, such as assessing parasite loads in school children and developing a deworming model based on World Health Organization standards. Parasites are of particular interest because they can be debilitating to human health and can be passed to gorillas and affect their health as well.



Umutekano's infant was born in August 2014.

Studying and monitoring Grauer's gorillas in Congo

The Fossey Fund's efforts to help protect gorillas in the Democratic Republic of Congo have been ongoing since 2001. Congo is home to both mountain gorillas (in Virunga National Park, which adjoins Rwanda's Volcanoes National Park) and to the lesser-known Grauer's gorillas farther to the west.

The Fossey Fund has worked with Congo's park and wildlife authorities (ICCN) as well as local communities over the years to address poaching, conserve critical habitat, set up education programs, and help with the rehabilitation of rescued gorillas.

Closely related to the mountain gorilla, Grauer's gorillas, which live only in Congo, are not only highly endangered but receive far less protection and study than mountain gorillas in the nearby Virungas. Decades of civil unrest, extreme poverty, illegal mining, and hunting activities have all taken their toll on the Grauer's population, with their numbers plummeting by as much as 75 percent. Without effective conservation strategies now, it is thought they will be extinct throughout much of their range in the next decade.

Finding remote Grauer's groups

The Fossey Fund established a permanent research and conservation field station in the village of Nkuba in 2012, at the edge of a pristine forest that is home to Grauer's gorillas. Since launching this research site, we have intensively surveyed a 700-square-kilometer area of forest and located 14 Grauer's gorilla groups containing some 150 gorillas. We have also established the presence of Grauer's gorillas in two contiguous forest areas, covering about 2,000 square kilometers of primary forest.

In addition, we have collected genetic samples (feces) from several gorilla groups, which will allow us to measure their genetic diversity, and started a survey of terrestrial mammal biodiversity using a network of camera traps positioned in the forest. These cameras have documented the presence of many important animals in addition to the gorillas, including chimpanzees, leopards, giant pangolins, and elephant shrews, and more common species such as antelopes, owl-faced monkeys, civets and golden cats. The presence or absence of game



Habituated Grauer's gorillas in Congo's Kahuzi-Biega National Park.



One of the Grauer's gorilla groups we track in Congo was photographed by our remote camera traps.

There are many ways to help save gorillas through the Fossey Fund's programs. You can **1)** become a member, **2)** join our Adopt-a-gorilla program, **3)** make a donation, **4)** include the Fossey Fund in your will, **5)** hold a special event, **6)** become a sponsor and more! *For ideas, please visit our website: gorillafund.org/takeaction*



Expert trackers Wasso and Jadot study gorilla food remains.



Our trackers from Nkuba train at Kahuzi-Biega park.

species, such as antelopes, will also indicate the importance of hunting in different sectors of the gorillas' habitat.

Now that we have established the organizational, human and logistical infrastructure to reach the gorilla populations in this remote area, and localized 14 gorilla groups, we have begun tracking them, and studying their diet, ranging patterns and social system. Our presence also helps protect the gorillas against bushmeat hunting and mining.

Since these gorillas are not habituated, we follow them at one day's distance, tracking them by studying nest sites, food remains, bent vegetation, footprints and other signs of their presence and behaviors. From these we can determine how many gorillas are in a group, how far they travel, their home ranges, and other important information. Tracking these gorillas in primary forest is extremely challenging but our trackers are already able to follow a gorilla group for weeks without losing its trail.

Our ultimate aim is to establish an intensive research and conservation effort for the Grauer's gorillas modeled on the Karisoke Research Center's successful and proven approach. We plan to establish a permanent forest camp in the heart of

Grauer's gorillas' range, 25 kilometers from the Nkuba base camp. This will enable the uninterrupted tracking of gorilla groups, along with their protection.

Studying habituated Grauer's gorillas

The Fossey Fund also collaborates with Congolese wildlife authorities to observe the only habituated group of Grauer's gorillas, located in Kahuzi-Biega National Park. This group was originally habituated for tourism and is monitored and protected by ICCN staff.

We are working with them to collect data using the same protocols we follow at the Karisoke Research Center. This will enable direct comparisons between the two populations. Since Grauer's gorillas are the most understudied of the four gorilla subspecies, this work is critical to building the information we need to successfully conserve them.

Building relationships and local capacity

One of our primary goals is to help build conservation capacity in the areas where we work. This includes arranging exchanges of staff between our Karisoke Research Center and our Congo research sites, to help build capacity as well as to use science as a tool for building relationships within a region that has seen much conflict over the years. We are calling this "scientific diplomacy."

We believe that projects like this will help foster positive interactions between scientists and students from both countries. In 2014, we sent Karisoke protection and monitoring officer Jean Paul Hirwa to Kahuzi-Biega National Park and received a grant to help us expand this type of collaborative effort. In 2015, staff from all of our research sites will develop a joint research project and then spend time at each site to learn new methodologies and to implement this scientific collaboration.

Another key feature of our work in Congo is the involvement of the local communities. Our field staff are hired from local villages and are involved in all aspects of the work, from the design of research and monitoring protocols to the analyses of results. After completing surveys of the wildlife in their own forest, and seeing the sharp declines of wild animal densities around hunter and mining camps, our trackers have become fully aware that wildlife can disappear and of the need for conservation. We share such information through meetings and workshops with the communities as well, to engage them in finding workable solutions to preserve their natural resources.

Our Congo and Grauer's conservation and research programs are led by Urbain Ngobobo, director. Escobar Binyinyi serves as research and conservation program manager, and Damien Caillaud, DVM, Ph.D., is research director.

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area (more than four times the size of the available gorilla habitat in all of Rwanda) and identified a population of some 150 gorillas, which we are now regularly monitoring and protecting through our presence in the forest. But Grauer's gorillas are still the least studied of the four gorilla subspecies, and much remains to be done before we have the information and resources needed to successfully conserve them.

Continuing our work with people

The Fossey Fund also remains committed to engaging and helping the local communities where we work. In 2014, in addition to our annual programs at elementary schools surrounding the park, which provide roughly 1,900 children with conservation education outreach, we were thrilled to work with our long-term supporter Partners in Conservation to build the Bisate Learning Center in Rwanda. Located in the village nearest the park where the gorillas range and where most of our Rwanda staff and their families live, the learning center will provide a community of more than 20,000 individuals with their first access to computers and a library.

In another 2014 milestone, the Fossey Fund hosted 187 University of Rwanda second- and third-year students at Karisoke for field courses in primatology and conservation biology, the largest number since the program started in 2004. With support from Cleveland Metroparks Zoo, we also supported and supervised eight third-year biology students from the university in their senior thesis research.



Tara Stoinski, Ph.D., became Fossey Fund president and CEO in 2014.

Your support was crucial

Our work in 2014 was made possible by our loyal members, partners, donors, sponsors, and other supporters. We are extremely grateful to have your support and to know that you are with us in all of this important work. We look forward to continuing this historic journey together, as we approach the 50th anniversary of the Karisoke Research Center in 2017, and prepare for another half century of success!

Thank you!

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

Dian Fossey Gorilla Fund Financial Summary: Fiscal year October 2013–September 2014

Support & Revenue

Contributions & Interest:	\$3,552,359
In-Kind Revenues:	\$589,415
Total:	\$4,141,774

Expenses

Program Services:	\$3,260,644
Administration & Fundraising:	\$446,550
Total:	\$3,707,194



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