The Mountain Gorilla Veterinary Project: Providing Health Care to a Wild Gorilla Population

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Throughout the world non-human primates are in trouble, being among the most endangered mammalian species. The mountain gorilla (*Gorilla gorilla beringei*) of East-Central Africa is one of the most highly endangered primates, with only 600–650 individuals remaining in two isolated forest habitats in Rwanda, Uganda and the Democratic Republic of Congo (DRC, former Zaïre).

The Mountain Gorilla Veterinary Project (MGVP) is a project of the Morris Animal Foundation, a non-profit organization that funds animal health-related research around the world. The Mountain Gorilla Veterinary Project was created in 1986 in response to a request by the late Dian Fossey to provide veterinary care to these threatened animals. Originally named the Volcano Veterinary Center, the project’s name was changed in 1995 to reflect its expanding role in the three countries and its broadening focus of gorilla population and ecosystem health. The project has two primary goals: to provide health care for the gorillas and to conduct gorilla health-related research. Providing health care to individuals of a wild population is generally not considered cost-effective. However, when a population’s numbers decline to the level seen with the mountain gorillas, each individual, particularly females, become genetically important to the population as a whole.

The most prominent of the mountain gorillas’ two habitats, the Virunga Volcanoes region, is formed along the three countries’ common borders by three protected areas: Volcanoes National park in Rwanda, Virunga National Park in the DRC and Mgahinga Gorilla National Park in Uganda. This is where the late Dian Fossey spent nearly 30 years conducting her renowned behavioral research. The second habitat, Bwindi Impenetrable National Park, is located approximately 30 km North in Uganda.

The mountain gorillas face a number of threats to their continued existence. Political and military unrest has plagued the region for many years and continues today with war raging in the Congo. Following the genocide and civil war in Rwanda in 1994, rebel activities throughout the Virunga region were heavy as rebels operating in the DRC used the forest of the national parks as their shelter and staging area for attacks into Rwanda. This and subsequent reaction by military forces posed a serious threat to the gorillas.

Habitat loss has had perhaps the greatest impact as the forests have been whittled away over past decades. In the 1970s a World Bank project resulted in the decommissioning of a large portion of the park in Rwanda for planting pyrethrum, a plant used in pesticide production. Within the past year there was reported to be another challenge to the park when certain elements pushed to open more of the park to human settlement. Though the parks are officially protected, use of the forests by local people continues, as they enter the park to chop firewood, plant crops and hunt.

These two island habitats are surrounded by some of the highest human population densities in the world (300–400 people per km²) which continue to grow at more than 3.7% annually. Since man and the great apes share about 97% of their genetic makeup, they are susceptible to many of the same diseases: tuberculosis, influenza, measles, polio and intestinal parasites, to name but a few. Many of these diseases
are known to be present in human populations in the region. But local people aren’t the only potential source of infection for the gorillas. Originally habituated to allow behavioral research, the mountain gorillas have since been habituated for tourism. Those very tourists and researchers, as well as veterinarians and park personnel, may also pose a disease threat. Tourists come from around the world to view the gorillas, without any guarantee of being screened for infectious diseases. Today nearly 70% of the gorillas ranging in Rwanda are habituated for research or tourism. The more contact there is between humans and the gorillas, the greater the risk of disease transmission. The gorilla population is largely immunologically naïve; having not been exposed to certain diseases, they have no immunity to them. Thus, if such a disease were to enter the gorilla population, it could run its course unchecked, with possibly devastating consequences.

In order to allow the mountain gorillas as natural an existence as possible, MGVP veterinarians limit “interventions” or direct manipulation of the gorillas to instances that are deemed potentially life-threatening to an individual or to the population, with particular emphasis on human-induced problems. Most interventions are conducted to remove poachers’ snares, some to treat other injuries or illnesses. In years past, direct poaching of the gorillas was a major problem. In recent years, however, the poachers’ snares are typically set for other animals, such as duikers or monkeys; gorillas are snared when they inadvertently wander into the trap. Typically made of wire or rope, snares wrap tightly around fingers, toes, hands or feet, causing amputations and infections that, if not treated, could result in death.

When an intervention is indicated, MGVP veterinarians work with protected area authorities and other conservation partners to provide the best possible care. The risk of prolonged anesthesia and the tremendous potential for disease transmission precludes removing gorillas from the forest for treatment. All procedures must be performed on-site. Because the precise nature of an ailment cannot be determined until the animal is examined, MGVP veterinarians must be prepared for any eventuality. All equipment—for anesthesia, wound treatment, blood and other sample collection, even surgery—must be carried to the site. Local porters are hired to help, providing a vital service in exchange for much-needed income. Sometimes an escort from armed park rangers or soldiers is also necessary.

After getting authorization from park authorities, the team gets under way. The trek can be long, lasting up to several hours, and is often over difficult terrain. With the expert assistance of the national parks’ gorilla trackers, the gorillas are located. After identifying the ill or injured individual—and carefully noting the location of other gorilla group members—an anesthetic is delivered by dart. Working quickly, the animal’s condition is assessed, snare removed and wounds treated. Often antibiotics are administered. Samples are also collected: blood for health assessments and disease studies, hair for genetics and nutritional assays, urine for establishing normal parameters and feces for parasite and bacterial investigations. The animal is carefully monitored throughout the procedure, often using portable cardiac monitors and blood chemistry equipment. With all this completed and the anesthesia wearing off, the gorilla is guided back to the safety of its family group.

When a gorilla dies, whether from human-induced injuries or from natural causes, MGVP veterinarians will perform a postmortem exam. Tissue samples will be collected and the cause of death determined. Such exams provide vital information about the gorillas, whether alerting scientists to the appearance of an infectious disease in the gorilla population or simply determining normal values for the species.

In order to learn more about these animals, MGVP veterinarians also conduct gorilla health-related research. Because interventions occur only a few times per year, most research is conducted using non-invasive samples, such as feces or urine. With the continuing encroachment of human populations, determining the types of parasites and diseases the gorillas have been exposed to can give important information regarding the impact of humans on the population. This research has recently identified in the
gorillas a type of *Cryptosporidium* (an intestinal parasite) previously restricted to humans. Its appearance in the gorillas is strong evidence of the impact of human contact.

MGVP veterinarians were also involved in developing existing tourist regulations, put in place to limit the exposure of gorillas to human diseases. These include limiting tourist visits to one per gorilla group per day; limiting the number of tourists per visit to 6 (8 for some gorilla groups); limiting visits to one hour; limiting tourists to age 15 years or older; maintaining a minimum distance of 15 feet from the gorillas at all times; banning eating, drinking and smoking in proximity to the gorillas; carrying all trash out of the forest; burying human feces at a depth of at least 30 cm and banning anyone showing signs of infectious disease from visiting the gorillas. With people coming from all over the world, possibly carrying undiagnosed or sub-clinical disease, it is important for anyone visiting the gorillas to observe these regulations.

With the burgeoning human population comes the ever-increasing competition for resources. But with the human encroachment also comes a newer threat: that of disease. These animals have endured decades of assaults and managed to survive, helped largely by highly dedicated individuals. At a time when these great apes and other primate populations worldwide are facing unprecedented challenges, the Mountain Gorilla Veterinary Project provides a model for wildlife health programs. Hopefully, it is also providing a reminder of our collective goal: to see the continued existence of these magnificent creatures.

Since 1997, the Cincinnati Zoo’s Conservation Fund has provided financial support for MGVP, including the establishment of the Mountain Gorilla Biological Resource Center located at Morris Animal Foundation headquarters in Englewood, Colorado. The new center is a repository, providing safe storage for valuable blood, tissue, hair and other biological samples and making them available to scientists for future study.

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