



## Transcript

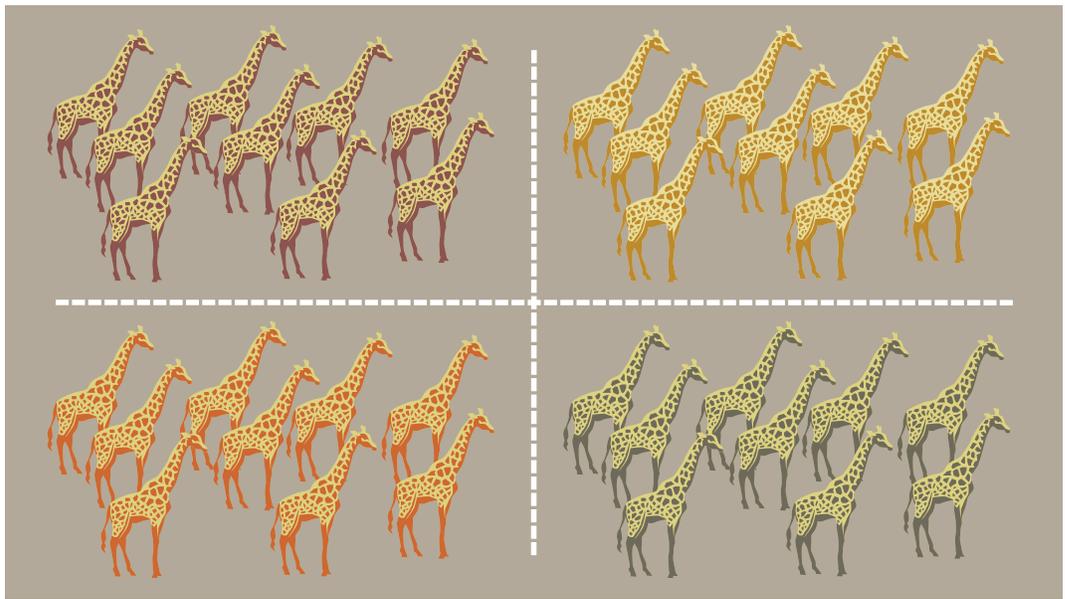
### [Giraffes...4 Species or 1?](#)

**Lucas Meers:** Faraja is one of seven giraffe we have here at the Jacksonville Zoo and Gardens. Their tongues can grow to be 20 inches long and are prehensile, meaning they can grasp. Not only do they have long tongues, but giraffes are also the tallest mammals in the world. Giraffes are instantly recognizable from their distinguishing coat patterns, their long necks, and these crazy weird things sticking out of their head called ossicones. Take a look at this giraffe skull. You can see that the ossicones are actually part of the skull itself. In this way they are like horns, such as on this kudu, but unlike horns, which have a keratin sheath covering the bone, ossicones are instead covered with skin and fur.

Currently, scientists consider all giraffe to be part of the same species, *Giraffa camelopardalis*, with the different kinds of giraffes considered subspecies like listed here. Differences in ossicones, variations in coat colors and patterns, as well as where they live in Africa, are some of the criteria scientists have used to separate giraffes into different subspecies. But recently, scientists from three countries published new DNA research and came to a different conclusion, giraffes are genetically separated to the point that they are actually four distinct species.

The northern giraffe with three subspecies, the southern giraffe with two subspecies, the Masai giraffe, and the reticulated giraffe, the kind we have here at the Jacksonville Zoo and Gardens. In some ways this genetic research may not be much of a surprise. Different giraffe populations live in different locations across the African continent and these separated populations have distinct coat patterns and coloration. Even though some of these populations have ranges that overlap, there is very little mating between them.

When different populations breed with each other gene flow occurs between them. This gene flow helps keep their genetics similar enough to keep them the same species. However, when populations do not interbreed over very long periods of time the populations become genetically isolated and can diverge from one another, forming distinct species. This genetic evidence from giraffes suggests that the divergence into four different species happened over a million years ago at a time when the populations may have become separated. This genetic evidence for four distinct species is revealed in the differences in the As, Ts, Cs, and Gs of the genomes. This recent genetic work is powerful. Multiple parts of the genomes from all types of giraffe across the African continent were analyzed.



Julian Fennessy, one of the scientists involved in this work and head of the Giraffe Conservation Foundation in Namibia, was recently at the Jacksonville Zoo and Gardens.

**Julian Fennessy:** Four species of giraffe or one? You know, this is the question that's come up lately and based on our conservation work and working closely with geneticists in Germany, we've been able to show that there's really four distinct populations. While they look distinct—I think physically they look very distinct, they have different numbers of ossicones as well in the different areas, and if they are distinct then we need to manage them very distinctly. For biodiversity reasons we shouldn't be mixing them up, so that was the baseline of why we did this work. Hopefully, moving forward, we can continue that work, better understand the different populations and the genetics is really the foundation of the future.

**Lucas Meers:** Genetic analysis is being used more and more to understand populations as well as the evolution of a wide range of animals, and over the past decade genetic research has been revealing secrets about giraffes, such as the relatedness of the African populations and the possibility of multiple species.

No one study is definitive, and the debate over how to categorize these animals will continue. However, the conservation implications of this study are clear. You see, if all giraffes are considered the same species, then their wild population numbers may not be considered dire, but if they truly are four distinct species then their outlook changes considerably.

**Julian Fennessy:** Currently we estimate about a hundred thousand giraffe in Africa and that's been a decline of more than 40% in the wild. So if we look at different types of giraffes, some of those species have declined by almost 95% in those three decades. Then we've got the next group of reticulated giraffe that have declined by, give or take, almost 80% in the wild in three decades.

**Lucas Meers:** Wow.

**Julian Fennessy:** We just didn't know those numbers are dwindling. They've already gone extinct in at least seven countries in Africa.

**Lucas Meers:** Wow.

**Julian Fennessy:** These declines are massive and this is really a silent extinction that's going on and this is something that we need to be able to share and hopefully we can get partners on board further to help us do something now.

**Lucas Meers:** Look at it this way, Forrest is our youngest reticulated giraffe. Over the past 30 years, eight out of every 10 reticulated giraffes in the wild disappeared due to hunting and habitat loss, and sadly, only 9,000 reticulated giraffes are now left in the wild.

Recognizing these massive declines, the International Union for Conservation of Nature recently listed giraffes as vulnerable to extinction. Here at the zoo, it is our hope that when visitors see these animals in person, they will strengthen their appreciation for endangered animals and support saving species.

You too can help save giraffes by adopting one. To find out how go to [giraffeconservation.org](http://giraffeconservation.org) and click *Adopt a Giraffe*. Donations to the Giraffe Conservation Foundation will be used to help Julian save giraffes across Africa and help prevent their extinction.

**Julian Fennessy** The Giraffe Conservation Foundation is the only organization in the world that focuses solely on the conservation and management of giraffe across the whole of Africa. We work closely with governments, with non-profit organizations, research institutions - across Africa to better understand A, where are the giraffe, what are the threats, and then from understanding that, we help to look at action planning and be able to develop strategies to be able to start pinpointing what those issues are, how we can fund it, and how we can provide that technical support.