

[crickets]

[cymbal plays]

[chime]

[music plays]

[DEMILLE:] Oh! There's coming, it's coming.

[music plays]

[NARRATOR:] For over 40 years, Joyce Poole has been studying elephant populations in Africa. She is one of the world's experts on elephant behavior and communication. Her work has taken her to Gorongosa National Park in Mozambique where she is working with local scientists.

[DEMILLE:] The big guy, it's coming.

[POOLE:] He was the same guy on the camera traps, he was in the farms.

[POOLE (on camera):] I'm studying the status of the Gorongosa elephants, looking at how they have and are recovering from a period of heavy poaching.

[NARRATOR:] Many of the large mammals, and over 90% of Gorongosa's elephants, were killed during a civil war that lasted from 1977 to 1992.

[POOLE:] So even though it's twenty years, we can see that there are real scars on this population.

[NARRATOR:] The scientists are monitoring a peculiar characteristic, one that they have also seen in other African parks. Some elephant populations seem to be missing their tusks.

[NARRATOR:] Since 2008, the Gorongosa Restoration Project has been protecting wildlife in the park and monitoring their recovery. The elephant population is slowly growing back to a healthy size.

[NARRATOR:] By studying the recovery of Gorongosa's elephants, Poole observed that many females lacked tusks.

[POOLE:] The first day I was here in 2011, I met a group of fifty elephants; most of them were tuskless. So, I knew kind of straight away when I came here that, that there was a high proportion of tusklessness.

[music plays]

[NARRATOR:] Tusks are a pair of elongated teeth -- the incisors -- that continue to grow throughout an elephant's lifetime. Elephants use their tusks to strip bark off trees, and dig holes for water and minerals.

[music plays] Males use them in contests against other males to win over females.

[POOLE:] Elephants use their tusks all the time. For males, tusks are really important, because males are fighting one another for access to females. And if you don't have tusks, you risk being severely wounded. So there's a very strong selective pressure among males for tusks.

[NARRATOR:] Because tusks are so critical to the survival of males, tuskless males are extremely rare. But a proportion of female elephants are typically tuskless. In populations less affected by poaching, tuskless females are only 2 to 6 percent of the total number.

[POOLE:] Tusklessness, just like having tusks, is a natural trait. And it's inherited. Like bigger ears or smaller ears or green eyes or blue eyes, it's an inherited characteristic.

[NARRATOR:] During the civil war in Mozambique, large-tusked elephants in Gorongosa were killed for their ivory which was sold to buy arms and ammunition. More of the tuskless female elephants survived.

[POOLE:] Here in Gorongosa among the older age class-- that is, the ones who were already adults during the war, when there was heavy poaching-- they are fifty percent tuskless.

[NARRATOR:] Poaching selected for tuskless females.

[POOLE:] It ends up with a higher proportion of tuskless animals who then reproduce, and tend to produce tuskless offspring.

[NARRATOR:] Surveys conducted by Poole and colleagues indicated that 33% of females 10 to 20 years old are tuskless. No tuskless males have been found.

[POOLE:] Any animal who's under twenty was born after the war. So they are not a consequence of poaching, or at least not directly, but they would be a consequence of maybe being born of tuskless mothers.

[NARRATOR:] Poole has observed large tuskless populations in other African countries where elephants are heavily poached to support the ivory trade.

[POOLE:] Somewhere like the Selous, in Southern Tanzania, Queen Elizabeth. Both of those populations went through heavy poaching in the 80s and Selous again now, and they have also very high levels of tusklessness. In this day and age, now, with all the poaching that's going on, actually the tuskless elephants are at an advantage, because they are not being targeted for their tusks.

[NARRATOR:] The insatiable demand for ivory is driving complex changes in elephant populations. Not only are elephant numbers decreasing across the African continent due to habitat loss and poaching, but elephant traits are also changing as a result of this ongoing threat.

[music plays]