

Wild dogs didn't go extinct in east Africa after all

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African wild dogs.

In 1991, conservationists announced with dismay that endangered African wild dogs had gone extinct from the Serengeti-Mara region of east Africa. Now the latest genetic study reveals that this proclamation may have been premature – it turns out they almost certainly didn't go extinct at all.

A team of UK and US researchers genetically analysed a rare bounty of samples taken both from the dogs before their apparent extinction, and from new packs that naturally re-established in the area ten years later in 2001.

To their surprise, they found that almost all of the new dogs are genetically related to the original Serengeti-Mara population, meaning that some dogs must have persisted undetected in the region after 1991.

"The data suggest that there wasn't complete extinction in the region, which is encouraging," says Dr. Barbara Mable from the University of Glasgow, who led the study.

Mable and colleagues from the universities of Glasgow and California also discovered that the disappearance of the dogs in the early 90s had almost no effect on the genetic diversity of the population.

"The diversity maintained in the recolonising populations suggests that they could make a good recovery," adds Mable. "Their numbers have increased rapidly after 2001."

Despite this welcome news, scientists are still puzzled about why the dogs disappeared in the first place, and then why they turned up again ten years later.

"Our findings still can't explain the puzzling cause of the disappearance of so many packs of dogs from the monitoring area. One possibility is that animals remained or moved to areas outside of the Serengeti national park that weren't monitored regularly," says Mable.

"The terrain in this region is pretty inaccessible, and is marked by a density of trees, bushes and grasses, so it isn't easy to keep track of wild dogs, which tend to be on the move a lot."

When the Serengeti-Mara packs first disappeared, there was much heated debate about the likely cause. Critics claimed that handling by veterinarians and conservationists may have accelerated their decline by somehow helping to spread rabies and distemper from domestic dogs to wild dogs. "But this is highly implausible and there was no concrete scientific evidence to support these claims," says Mable.

Indeed, the shock of the dogs' assumed extinction led the authorities to

ban anyone - include veterinarians - from handling them. While this might have seemed like the best approach, the flipside of this stance meant that rabies and distemper vaccination programs designed to help safeguard this endangered species were held up.

So when it emerged that scientists had collected samples from the Serengeti-Mara wild dogs before 1991 and after their return in 2001, Mable and her colleagues were keen to investigate. They wanted to see if they could get to the bottom of the dogs' 1991 disappearance.

African wild dogs have huge home ranges, travelling as far as 250 kilometers to establish new packs. This led the researchers to come up with three possible suggestions for the ancestry of the new dogs.

Either the original population went extinct in 1991, and the re-established pack came from a completely different population; the original population didn't go extinct at all; or the new population is a mixture of dogs from the original packs and new migrants.

Mable and her colleagues discovered that most of the new dogs are related to the original pack, but they also found that dogs from completely different populations had made it into this new population.

"The dogs didn't return to the Serengeti itself, which may be because they're avoiding the growing lion population there," says Mable.

"Our results highlight the importance of long-term field projects like this one to keep track of the genetic ancestry of endangered animals," she adds.

African wild dogs have been classed as endangered by the IUCN Red List of Threatened Species for 22 years. Ongoing conflict with people, limits in the availability of their favourite prey - such as Impala, Greater

Kudu, and Thomson's Gazelle - and habitat fragmentation, seems to responsible for their continued decline.

The study is published in *Conservation Genetics*.

More information: Clare D. Marsden, et al., Inferring the ancestry of African wild dogs that returned to the Serengeti-Mara, *Conservation Genetics*, published online 25 December 2011, [DOI 10.1007/s10592-011-0304-z](https://doi.org/10.1007/s10592-011-0304-z)

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