

The return of the quagga



When I was 12, in 1970, I wanted to become a game warden in Africa. I wasn't exactly sure what the job entailed, but I knew wardens looked after Africa's national parks, cared for its wildlife, had Land Rovers and binoculars, and chased off poachers. With any luck, my chosen park would also make me a consultant to Hollywood, and at last the world would be able to watch a Tarzan film without any of the "wrong animals" in it. Honestly, weren't those New World monkeys running through the trees? And why was Tarzan riding an Asian elephant? But I never became a game warden, Tarzan-film biology never improved, and, more importantly, new research tells us that, since 1970, parts of Africa have lost 85% of their large mammals.

Taking the figures for 69 species of these mammals (big herbivores, mostly) recorded in 78 African protected areas between 1970 and 2005, Ian Craigie of Cambridge University and his colleagues developed an index to quantify the management success of these reserves in terms of maintaining large-mammal diversity. Their results make for grim reading. Translated into everyday language, Africa's large-mammal populations have declined an overall 59% over this 35-year period. In southern Africa, large-mammal populations have actually increased by 24% – wonderful news. But in eastern Africa, land of the Serengeti and the Masai Mara, the losses are 52%, and in western Africa they reach a staggering 85%.

"The decline in eastern and western Africa is probably due to a mixture of reduced financial and personnel resources to protect wildlife, loss of habitat at the hands of a growing human population, and over-hunting – particularly in western Africa, where the bushmeat trade is a huge threat", says Craigie. "The difference in southern Africa is that protected areas typically have more financial resources and their large-mammal populations are managed with tourism in mind. They show that we can maintain and even increase such populations if management is appropriate and resources are sufficient. But many eastern and western African reserves will need urgent support if they are to maintain their biodiversity."

Apparently not content with the rise in large-mammal numbers in southern Africa, The Quagga Project (www.quagga-project.org) has actually been trying to bring a whole subspecies back from the dead. Zebra-striped at the front end and decidedly unstriped at the rear, the quagga – originally thought to be a discrete species – once roamed

across southern Africa in huge herds. Shot mercilessly to remove it from the plains where European settlers wanted to graze their livestock, the quagga was gone by the early 1880s. In the late 1960s, however, Reinhold Rau, a taxidermist with the South African Museum in Cape Town, began to think that quaggas might in fact have been a subspecies of the plains zebra. As a subspecies, and not a species in its own right, could the quagga be bred back from the plains zebra? Could it be resurrected from extinction?

In the 1980s, testing of quagga nuclear DNA obtained from hides held in museums showed that Rau was right; the quagga was indeed a subspecies of the plains zebra. Thus, in 1987, The Quagga Project was born, with the goal of resurrecting the quagga through the selective breeding of its plains zebra cousins. In 2005, comparisons of quagga and plains zebra mitochondrial DNA – something that could not be done back in the 1980s – would reconfirm their subspecies relationship.

The project has not been free of controversy. Might not real quaggas have had other genes, apart from those coding for coloration? Would, therefore, these quaggas really be quaggas or just quagga facsimiles? But even quaggas would have genetic variation; so, is it not a quagga if it looks like a quagga? The project steers carefully

through the storm by stating its aim is to retrieve "at least the genes responsible for the quagga's characteristic striping pattern".

Although evermore quagga-like individuals are being bred, Rau died before he could see his dream fully realized. However, his work carries on. "The Quagga Project is the endeavor of a group of dedicated people in South Africa to bring back an animal from extinction and reintroduce it into reserves in its former habitat", explains Craig Lardner, the Head Coordinator of The Quagga Project. "This 'quagga revival' is a world first, and has catapulted South Africa into scientific history. The Quagga Project has afforded us a very rare second chance to save a [sub]species."

But perhaps it affords us more than that: an opportunity to atone for the greed that led to the quagga's extermination. Such atonement, however, will not be available for all of Africa's large mammals: you cannot breed *species* back from nowhere. So, there is but one option – we must not let them disappear in the first place.

Adrian Burton



Nearly there – one of the most quagga-like foals born to date.