

The Cape Mountain Zebra: From Near Extinction to Possible Return There

The Cape Mountain Zebra, often affectionately addressed by locals as GT donkeys or ponies in pajamas, faced extinction at the start of the twentieth century or early 1930's. Hunting, exportation and habitat destruction reduced these species to less than 400 individuals scattered throughout Craddock, Kammanassie and Gamkaberg districts in South Africa. But after decades of careful conservation, climate change not only threatens these species through devastation of its habitat but future conservation efforts may place its very existence at risk.

Cape Mountain Zebra are endemic to South Africa. Originally thought to be analogous with the Hartman's Mountain Zebra in Namibia, distinct genetic markers have resulted in both species being listed as distinct subtypes.

Smaller in both size and stature to its plains relative, Cape Mountain Zebra stand between 11 and 12 hands high, or roughly the size of a Shetland pony. They are therefore the smallest of all Zebra subspecies, with two distinctive identifying features, other than their size.

Their unique stripes are narrower and therefore more numerous over their head, neck, shoulders, forelegs and body. Their stripes do not progress all the way down and over their flanks or belly, leaving the coat there white, while the stripes over their sacral area combine to form a gridiron pattern. On their quarters and hind legs, their stripes run horizontal and are broader, progressing all the way down their legs to their hooves, unlike other subtypes whose stripes stop at or above the knee and just below the hock. Their stripes, although varying in size, progress from narrow and fine on the head and neck to large and broad on the quarters. They have smaller, dark muzzles with brown coloring directly above and over the nose. Cape Mountain Zebra do not have shadow stripes; shadow stripes are shorter, individual or irregular stripes that do not join up with other stripes.

The second unique feature is the flap of excess skin under their neck, known as a dewlap, which is larger and more prominent than other subspecies.

Conservation efforts to preserve these species were already initiated in July of 1937 when the Mountain Zebra National Park near Craddock, in the Eastern Cape, South Africa, was established. However, its founding population was almost completely eradicated by 1950, with only two stallions remaining. Over the next decade and a half, eighteen zebra were donated to the park to assist with broadening the gene pool: the first eleven in 1950 by Mr. H. L. Lombard, with another six later donated by Mr. P. Michau in 1964.

Both the Gamka Mountain Reserve and the Karoo National Park undertook conservation efforts, with each managing and breeding their own sub-populations. These efforts have resulted in an increase in species numbers, from little more than a few hundred in the 70's to almost five-thousand in 2016; as noted in the Department of Environmental Affairs' Biodiversity Management plan for Cape Mountain Zebra. This feat also resulted in the Cape Mountain Zebra, being down-listed from Appendix I to Appendix II with CITES (Convention on International Trade in Endangered Species). The Species however remains listed as vulnerable.

But when the effects of climate change are considered, things start to unravel.

Between 2015 and 2018 the Eastern Cape, Kwa-Zulu Natal and the Western Cape suffered a crippling drought that threatened water security for human and animal alike. Animals within affected nature reserves and wildlife parks were relocated while thousands of livestock animals owned by locals succumbed to the harsh conditions.

According to a document published by the Western Cape Provincial Government, South Africa in 2015 recorded its lowest annual rainfall in over a hundred years, or since 1904.

While studies conducted and published by SANParks (South African National Parks) disclose the effects of climate change, over several decades, in their parks. Other than reduced annual rainfall, the document included temperature alterations, habitat changes and alien plant invasion.

Drought, being the localized and conspicuous indicator of climate change, has a devastating effect on any natural habitat. After the initial plant destruction or die off, the ground is laid bare and allows for soil erosion. The absence or reduction of endemic plant life also provides alien plant species the opportunity and space to establish, or even choke out prevalent plant life. The age-old adage, “*Nothing grows faster than a weed,*” comes to mind. This is further exacerbated when these areas are utilized for grazing; often resulting in pastures or fields and camps being overgrazed.

Extensive drought conditions also escalate the probability of wild fires should veld fires start. An almost abundance of dry organic matter as well as a shortage of accessible water allows these fires to lay ruin to vast expanses of already stressed habitats. The wild fire that engulfed large parts of Knysna and its endemic forest in June of 2017, as well as the numerous fires throughout the Southern Cape throughout 2018 are prime examples of this.

While these conditions are threatening enough for most species residing within these areas, perusal of intrinsic Cape Mountain Zebra habits highlight some very concerning facts that could have detrimental effects on the species as a whole.

Cape Mountain Zebra are climax (high level) grazers, they are also very selective graminivores (grass eaters). Their preference for succulent grasses such as red grass (*Themeda trianda*), locally referred to as wild oats, as well as weeping lovegrass (*Eragrostis curvula*) during their growth phase, threatens food accessibility during droughts.

This is because extensive drought not only limits the growth of these plants, overgrazing can, and does, prevent these grasses from seeding themselves. Red grass tussocks also do not tolerate continued grazing. Relatively hardy, both of these grasses naturally occur on Akasia veld, locally also referred to as “soetveld,” and are usually bountiful in supply. However, because of their lushness and high palatability they are sought after by many domestic and game species. This is also why both of these grasses are commercially grown as hay crops. For Cape Mountain Zebra, however, their palatability wanes once dried.

Drought aside, simply the occurrence or overpopulation of lower level grazing animals, such as sheep, springbuck, impala or warthogs can result in suitable grass types being grazed to lower levels than Cape Mountain Zebras’ biting high.

The direct threats to their habitat, caused by climate change or not, are not the only impediments conservation of these species faces. Since the inception of their conservation program, Cape Mountain Zebra have been faced with a crippling predicament: a very small gene pool. To overcome this limitation, conservationists have relied on the use of hybrid species and suitable enclosed areas or camps to isolate this subspecies. While this has resulted in a larger overall number of animals, it has also compromised the genetic distinctiveness of the species.

76 sub-populations. make up the approximately 5,000 strong population, with the larger, relict populations remaining within the Mountain Zebra National Park, Kammanassie and Gamka Nature Reserves. Forced relocations – due to climate change – will reduce these larger, extant groups into smaller sub-populations. and effectively scatter the larger gene pools. These relocations, due to their exigent nature, could then also result in the grouping or release of individuals with other subspecies, which would allow for cross breeding. Along with these factors is the likelihood of the species’ inevitable contact with previously unexposed conditions and diseases.

Collectively, all these probabilities paint a very bleak picture for this idiosyncratic species, as well as many others in similar circumstances.

Ignorance on the behalf of our forefathers now means that climate change has become the current and future generations' problem. No one person can reverse climate change as every person on earth, regardless of age, gender, race or origin has contributed to it. Whether you have carelessly discarded a plastic bag, a single use food wrapper or started a fire. It all adds up. Responsible use of resources and recycling should be seen as mandatory, especially to our generation.

I believe that every effort made, by every individual, to lessen our negative impact on the planet, should allow us to curtail the current generation's impact on the Earth. And in doing so save vulnerable species.

For the past five years I have actively been participating in S.T.E.M programs and competitions, particularly looking at finding simpler, greener and sustainable solutions.

In 2017, I qualified for the [SA Innovation Summit's Inventors Contest](#) with an [indoor evaporative food cooler](#). I have recently also completed my entry for the Google International Science Fair regarding the silent contribution plastics in our oceans make towards oceanic and global warming. Currently, I'm working on a water purification and small-scale power generation unit that uses solar energy or naturally produced methane gas as fuel.

Background Photo Credit:

Mark Bouter. Image taken at the Cape Mountain Zebra National Park, Eastern Cape, South Africa. Photographed on the October, 7, 2009 at 16h33 pm. Licensed for use under the [creative commons](#) license. Image was cropped, re-sized and watermarked.

Resources:

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