

Losing our

Vultures: Lappet-faced Vultures in Africa

By Peter Hudson



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Giant birds induce fascination and sometimes fear. The Lappetfaced vulture is Africa's largest vulture. Its size and bald head are its calling cards, and they can be easily distinguished in a melee of scavenging birds around a carcass in the African savannah.

In this edition of PT Aware, Dr. Peter Hudson takes us through the interesting biology of the Lappetfaced vulture and the primary threats they are facing.

Increasing human activities and livestock farming and the unrestricted use of veterinary drugs have led to a massive decline in the vulture population worldwide and the Lappet-faced vulture is no exemption. Accidental poisoning is another cause of concern, and the increasing use of insecticides may be of impact too.

There is evidence that the ban on the veterinary use of certain drugs in the Indian subcontinent has slowed down the rate of decline, and the hope is that Africa and the wider world follow suit.

We thank all our readers for trusting us with insightful stories from the natural world. PT Aware brings you the best from the world of natural science, conservation, and wildlife photography. The inspiring images in this edition are by Mary Ann McDonald and Dr Peter Hudson.

Our next edition will focus on Sloth Bear. We eagerly await your photography contributions for this.





FOUNDERS' NOTE

Welcome to the latest edition of PT Aware.

In last few months we have witnessed the impact of climate change on worldwide, documented through the lenses of dedicated photographers and various news platforms. March 2024 has been a stark reminder of our changing world, with unprecedented events capturing headlines: from the early thawing of Arctic ice endangering polar wildlife, to unusual storm patterns disrupting migratory birds across continents.

In April 2024, the global impact of climate change became increasingly evident. Record-breaking temperatures accelerated glacier melt in Greenland and the Antarctic, contributing to rising sea levels and heightened flood risks in coastal regions. Severe drought conditions persisted across the western United States, fueling early-season wildfires with devastating ecological consequences. Meanwhile, abnormal rainfall patterns in Southeast Asia disrupted agricultural cycles, threatening food security. These events underscore the urgent need for robust climate action to mitigate further environmental degradation and protect vulnerable ecosystems and communities worldwide, highlighting the interconnectedness of climate phenomena across continents.

We invite you to engage with these stories, to better understand the intricate links between climate change and biodiversity. Your awareness and action can make a difference. Together, let's inspire change and contribute to safeguarding our planet's future.

Hermis Haridas & Nisha Purushothaman Founders - Paws Trails Explorers

THE STORY

Losing our Vultures: Lappet-faced Vultures in Africa By Peter Hudson

Images by: Mary Ann McDonald & Peter Hudson

(Conservation Director, Paws Trails)





Peter Hudson is a scientist, photographer, and conservationist. He undertook his first scientific expedition to Africa at the age of 21 and has been a regular visitor ever since. Passionate about nature, he manages his own 36-hectare nature reserve in Pennsylvania which is home to bears, bobcats, and other animals.

In his professional career, Peter is the Willaman Professor of Biology at Penn State University. The focus of his research has been the infectious diseases of wildlife and in particular how new diseases emerge. For the past 11 years, he has been working on how and why viruses move from bats to humans in an attempt to predict when viral spillover occurs. He has also been studying the wolves in Yellowstone, tortoises in the Mojave Desert, and bighorn sheep in Idaho.

Peter is the Conservation Director at Paws Trails and uses his skills as a scientist and educator to increase awareness about conservation issues. He is supported by two interns at Paws Trails: Hayden Kissel and Shreya Menon. He is also heavily involved with the Random Good Foundation that undertakes storytelling for social change. He is an adjunct Professor at The Nelson Mandela African Institute of Science and Technology based in Arusha, Tanzania, and a Fellow of the Royal Society.

The world's population of vultures are showing a precipitous decline in abundance with more than 60% of vultures currently threatened with extinction. Here we focus on the plight of just one species, African's biggest vulture, the Lappet-faced vulture (*Torgus tracheliotus*) and consider them in the global context.

If you have ever had the pleasure of watching vultures descend onto a carcass in the African savannah then I suspect the first thing you will notice is the astonishing way the large plains vultures simply drop from the sky. Birds you could not see because they were at such high altitude now plummet past you and land into the fray of squabbling, blood covered vultures as they scramble for every bit of meat or offal from a kill. The second thing you notice is that not all the vultures are the same, there are two similar species in the fray, the most common being the white-backed vulture and then there is also Ruppells Griffon vulture. Sitting at the back of the melee is a much larger vulture, with a bald head and large pink skin folds hanging along the side of its head, somewhat imperious but ready to take what they want from the annoying white-backed vultures. This is the lappet-faced vulture, Africa's largest vulture, with a wing-span approaching 3 meters (9 feet). The featherless head is a clear adaptation to keeping the blood-spattered head relatively clean and they are the dominant species. I was always told by vulture biologists that this is the

species that will often arrive first to open the carcass with its strong bill and then this lets the other two species get access. In reality, I often notice them holding back and letting the other species rip away at the carcass and then they just march over and grab a morsel of sinew or cartilage and throw it down their throat.

The vultures of the African savannah

Vultures are of course scavenging birds, but lappet-faced have been known to kill weak smaller animals like gazelles and they bring many golden jackals back to their nests, so presumably killed them. While the smaller vultures focus their attention on the heavy concentrations of prey species, waiting to spot another vulture dropping onto a kill, the lappet-faced vulture will soar over huge distances, looking to be the first vulture on the carcass. They have a huge wing surface area relative to their body weight (thereby reducing wing-loading) compared to the other species so this allows them to efficiently stay aloft for long periods of time using little energy and an ability to utilize weak thermals (rising hot air) and so allowing them to see and arrive at the kills before the other vultures. Some propose this can be an advantage to the smaller species, since the lappet-face will have torn through the tough hide before they arrive, and this allows access for the smaller species so it is interesting to speculate on how the guild of

scavenging species may facilitate each other. Nevertheless, their main competitor must surely be the hyaenas who can rapidly demolish and remove much of the food, not allowing the vultures to get much other than a few tidbits.

Since white-backed and lappet faced vultures both live in the same habitat it is interesting to compare their biology. The lappet-faced look huge because they have such large wings, but their body mass is only 25% greater. For every lappet faced there are 10 white-backed vultures. The white-backed nest in lose colonies in treetops along water courses, often nesting when the wildebeest are passing through so they get access to more food while the lappet-faced nest on remote trees and raise their young during the dry season when there are few herbivores out on the plains, other than the Thompson gazelles. Counter to this is that the young are in the nest for almost four months and remain close to the nest for months afterwards so breeding at a tough time for rearing may mean that the young birds have reasonable access to food when they are trying to become independent of their parents.

Poisoning threats

In Asia we have seen a catastrophic decline in many of the smaller vulture species with abundance of several species falling by more than 95%. While there is always a combination of factors involved in a decline of a species and usually embraces loss of habitat and resources there is often one dominant factor. In the case of Asian vultures this has been the use of the nonsteroidal anti-inflammatory veterinary drug called diclofenac, a group of compounds that act mush like ibuprofen. Essentially it

is used to treat aches and pains in humans, reducing issues with joints, muscles, and bones. In cattle it is used to treat a range of problems including lameness, pain during calving. Diclofenac is highly toxic to vultures, even in small amounts and causes kidney failure which means the uric acid (which is the white part of bird feces) builds up in the bird's body and crystallizes around their internal organs, effectively causing visceral gout. Since vultures congregate at carcasses to feed on the same body, it only takes a relatively small proportion of treated cattle to be available as carcasses containing the drug to cause serious mortality.

The good news is that many countries on the Indian subcontinent have banned diclofenac and there is evidence that this seems to have slowed down the rate of decline. There is now an alternative drug available for treatment called meloxicam that is not toxic to vultures and so should really replace diclofenac. The bad news is that despite the ban, pharmacies are still selling diclofenac in India. Also in Europe the EU decided to let individual countries decide whether to ban it and countries like Spain and Italy have not banned its use and now vultures have been found dying of diclofenac in Spain. In Africa, the drug has been promoted and experiments have shown that the different species in Africa also appear to be vulnerable and are

in Indian vultures. There is mounting concern that it could be used increasingly in Africa. Of course, the vultures that inhabit much of the Masai Mara and the Serengeti would not be exposed to this drug while feeding on free-living ungulate species, but they would be exposed from cattle carcasses and of course in more rural areas away from game reserves most of the dead carcasses will be domestic animals. Lappet-faced vulture population and threats The lappet-faced vulture population is thought to be about 5700 mature birds and appears to be declining at fairly fast rate. In IUCN and the conservation world we look at rates of decline over a period equivalent to three generations. As such, with small mammals this might be over a period of a few months but with elephants that have a generation time of 22 years it is 66 years. Rates of decline of lappet-faced vultures in Africa are estimated at 80% over three generations, which in time is 45 years. At the turn of the century there was little concern about African vultures but by 2002 lappet-faced vultures were declining and listed as "Vulnerable" (facing a high risk of extinction) and because of further rapid declines was upgraded to Endangered (facing a very high risk of extinction) in 2015. In the Masai Mara the population declined by 50% over just 20 years, in Botswana by 84% over three

exhibiting the clinical signs observed

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Photo by: Mary Ann McDonald

generations and in Arabia at 79% over three generations.

The use of diclofenac in Africa is not clear, although a survey in 2007 in Tanzania to establish the extent of diclofenac use for veterinary purposes raised concern and the need for an awareness-raising campaign in East Africa to seek solutions to its use in livestock. While the level of diclofenac is probably much lower in Africa than India the cattle system is decidedly different since cows are sacred in much of India and really die from natural causes at an older age than cows in Africa. Moreover, we have seen major changes in the management of livestock. Animals are now routinely vaccinated and treated against many infectious diseases to increase the survival and value of livestock. Many sick animals are now sold off or sent to the abattoir as opposed to being abandoned so there are simply fewer cows dying in the open where they are consumed by vultures and so the level of resource availability for vultures in Africa has fallen.

One of the other important issues in Africa includes accidental poisoning with strychnine which farmers use to kill predators and scavengers. This was a major issue in the Masai mara when in 2015 two Masai farmers allegedly poisoned the lions of the marsh pride. Since then, there have been agreements and understanding to reduce the conflicts. In some areas farmers have started using the insecticide carbofuran, which has also contributed to significant mortality of vultures and other scavengers. Moreover, the lappetfaced vulture is often mistakenly persecuted as a livestock predator, for example, one deliberate poisoning incident in Namibia killed 86 vultures.

In summary

I think the situation for the plains vultures of Africa is not good and is well illustrated by the situation with lappet-faced vultures. They die from direct and indirect persecution, sometimes aimed at predators but they are also facing a loss of available carcasses as the global population of natural herbivores is falling and the livestock industry no longer abandons dying animals.

Vultures sit in a worrying position within the ecosystem, they are increasingly relying on the natural predators to provide them with food and yet these predators are falling in abundance, the area over which they can get natural food is shrinking, the livestock carcasses are becoming less available, toxic drugs are used in livestock and the poisoning of carcasses to kill predators is hitting the scavenging vultures. I know I am seeing less vultures than I did just 10 years ago so worry that watching and listening to the evocative sounds of vultures cleaning up a carcass will become a thing of the past.

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UPCOMING EDITION SLOTH BEAR

