

## *Vulture, lion, cow, cowherd*

*A long-read essay for Vulture Awareness Day, 5 September 2020*

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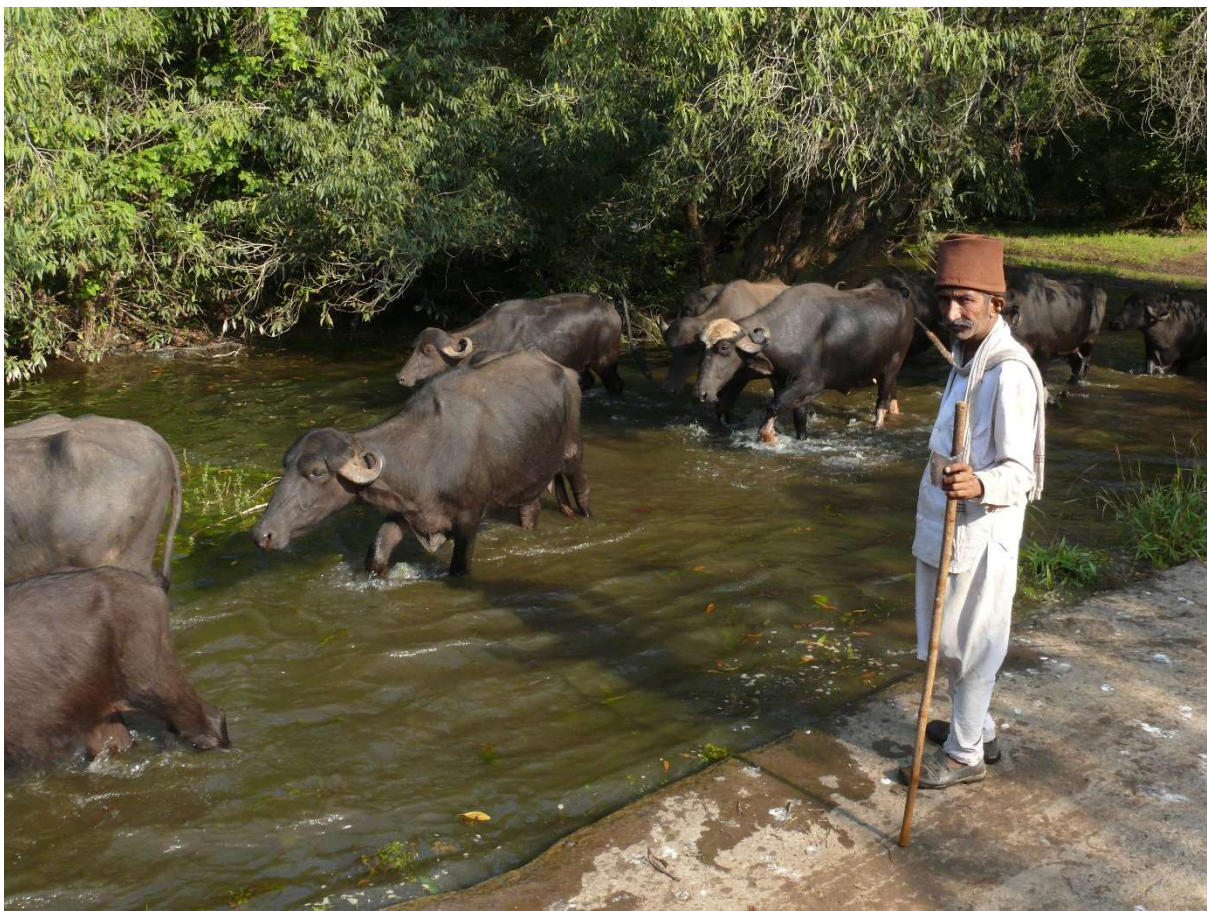
In October 2018 I visited the [Gir Forest](#) in Gujarat, India where I was met by Manisha Rajput, my guide and fixer for the research I wanted to do for my book [Framing Nature – conservation and culture](#). Gir is home to the world's only remaining Asiatic lions. From the brink of extinction a century ago, the lions are making a sustained comeback, leading to daily encounters with the Maldhari people and their livestock. With Manisha's help I spoke to women, men and children as they explained how the occasional loss of livestock and even the rare cases of injury to people, led not to recrimination, only an increased determination to coexist. I was there to report on this extraordinary relationship, and found that vultures also have a part to play.



Maldhari *nes*, Gir Forest © Laurence Rose

Originally the Maldhari were nomads from Sindh and Rajasthan, and other parts of Gujarat. They eventually settled in the grasslands of Saurashtra and Kutch and came to be known by

their tribal name after settling in and around the formerly more extensive forested lands of the Junagarh district of Gujarat. Although they are a recognised tribe, with certain rights enshrined in law, the name Maldhari is in reality an occupational term – keeper (*dhari*) of livestock (*maḷ*) – that can apply to people from a variety of castes and communities. The community is scattered through the Gir, in homesteads called *neses*, typically occupied by one large extended family or two or three couples and their children.



Maldhari herdsman © Laurence Rose

Across India, dairy herds – buffalos or cows – and the millions of street-cows return from their pasturings and wanderings back to their villages, *neses* and city byres during a gentle hour when the dust kicked up by their hooves is tinted by the colours of the setting sun. It is known as cow-dust hour, and we chose that time to visit Vaniavav, a *nes* that was home to Hardabhai, his son Meraman, Meraman's wife, Janaben, Mahesh, their son, and Mina, Payal and Jalpa, their daughters.

I watched the buffalo milked and corralled for the night, and listened to milk ringing the metal pails, Meraman's tenor voice calling from across the compound, with a questioning inflexion and Janaben's bell-like answering cadence. Grunts and lows from the animals. *Pic! pic!* from red-wattled lapwings. I was standing under an overhanging roof, on a raised verandah, at the edge of a five-foot drop down into the courtyard which was packed with buffalo. Hardabhai, the silver-haired, yellow-moustached, decades-weathered head of the family, joined us and sat opposite Manisha on a cot that rested against the back wall. He was immediately provided with a stainless steel saucer of hot buffalo milk which he balanced by the rim in the raised tips of his left-hand fingers, between two of which was also wedged an inch of roll-up. He looked tough and fit and old and tired at the same time. He was dressed entirely in white *kediyu-chorno*. The *kediyu*, a long-sleeved smock-shirt, pleated at the chest and reaching to the waist, was grimy from the day's sweat and dust. The *chorno*, wide pantaloons tied loosely at the ankles, were a bright, cleaner white than I would have expected.



For forty-five minutes Hardabhai spoke, with occasional responses in Gujarati from Manisha, and rarer pauses during which Manisha attempted to summarise in English. At some point Janaben finished her duties, and gradually, she became more involved in the conversation. I found myself listening intently to the music of it. The old man's rapid, baritone voice, each short burst descending in pitch and separated by a one-second pause, the younger woman's voice gently commanding attention by its beauty of tone – the slightest of rough edges to a succession of delicate chimes – and its melodic shapeliness. Hardabhai never

interrupted his daughter-in-law, but from time to time punctuated her voice line with a thin slurp from his milk-dish.

Manisha managed to squeeze the words ‘now he’s talking about the loss of vultures’ into a rare interstice in the monologue, but the conversation moved on before I could learn what it was Hardabhai had to say about them. Meraman arrived and sat next to his father, and his own son, Mahesh, a boy of about thirteen, sat between them. Then finally the conversation turned to the subject I had come to talk about, an incident two years ago, when Meraman was attacked by a lion and hospitalised; this story can be found in *Framing Nature*.

As we drove through the darkness the six miles back to Sasan Gir, the village where we were staying, Manisha relayed what Hardabhai had said about vultures:

“We told the Forest Department people that we were observing that we are losing vultures, but they dismissed our concerns. Then some years later they started asking us if we had noticed that there are fewer vultures and we said ‘bloody hell, so many years back we were telling you that we are losing vultures. You didn’t notice, but we who live in the jungle, we notice every little thing.’ We notice the vultures disappearing because now it is more difficult to track down the carcass of any animal that goes missing, as we don’t have the vultures to show us where to look.”



In thousands of towns and villages across India, Nepal, Pakistan and Bangladesh, where once over 100 million white-backed, Indian, slender-billed and red-headed vultures provided the fastest and cleanest carrion disposal system in the world, there is now a glut of dead meat. From the first official recognition of the problem, there followed the fastest decline to the brink of extinction ever recorded: in the case of the white-backed vulture, 99.7% of its population disappeared in the ten years between 1993 and 2002, with further decline since. There was a frantic need to deploy global ecological and veterinary expertise to find the cause. Eventually, the culprit was found to be renal failure caused by the birds’ rapid accumulation of the veterinary (and human) drug diclofenac. As India’s wealth has increased, the luxury of anti-inflammatories became affordable to more people, who instinctively shared the benefits with their beloved and revered cattle. They medicated elderly animals as they entered the final stage of life, spending their last days in traditional cattle shelters where vultures were welcomed as an essential component of the cycle of life and death. But diclofenac is poison to vultures.



Slender-billed vulture, Nepal © Laurence Rose

As vulture numbers plummeted, the thirty thousand strong Indian Parsi community suffered an immediate social and spiritual crisis. For two and a half thousand years, their funerary rites enlisted the vultures to dispose of the flesh of their dead, who were lifted onto tall *Dakhmas*, or Towers of Silence, to avoid contaminating what they regarded as sacred earth, and to attract the vultures. Fire is also considered sacred, so cremating the remains of loved ones was out of the question. But alternative solutions have remained elusive, and now the Parsi have had little choice\* but to adopt burial or cremation, in traumatic acts of sacrilege.

The only beneficiaries have been scavenging dogs, whose numbers have increased by 7.25 million as a result of the loss of vultures, along with the leopards who in turn prey on the dogs. In 2008 environmental economist Professor Anil Markandya and his collaborators estimated that

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\* Specially-designed solar concentrators can burn a body in three days without flame, but are extremely expensive. Vultures can reduce a body to clean bone in less than an hour; other scavengers such as dogs leave the job incomplete. Other impacts of reduced, slower or incomplete animal carcass disposal include water contamination and increased outbreaks of bacterial diseases such as anthrax.

at least 47,398 additional human deaths from rabies resulted directly from the loss of vultures between 1992 and 2006.<sup>1</sup>

Following the realisation that diclofenac – a class of drug known as NSAID or non-steroidal anti-inflammatory drug – was causing the vulture crash, steps were quickly taken to avert a horrific extinction. The drug was banned for veterinary use in India on 11 March 2006; Nepal followed suit in August 2006, and Pakistan shortly thereafter. A replacement drug, meloxicam, was quickly developed and found to be safe after tests were carried out on vultures in captivity. However, the veterinary use of another NSAID, ketoprofen, which is known to be toxic to vultures, remains legal and has increased. Aceclofenac, an NSAID that is likely to be metabolised into diclofenac after being administered to cattle, is also starting to be used.



Manisha and I arrived back at Sasan Gir to find someone waiting for us. Vikram Dhadhiya, a 33-year-old herdsman had finished his duties and caught a lift into the village along the road closest to his *nes*. We had seen him earlier in the day, with his buffalo, and we stopped the car so that Manisha could greet the friend she had known since he was a young teenager. Manisha had been in the first wave of an eventual force of more than fifty female forest guards appointed by Narendra Modi in 2007. She spent six months camping alone in the forest in the early part of her time as a ranger, and would start each day with a breakfast of Kellogg's Puffed Rice. Invariably Vikram would appear to share this strange and exotic foodstuff. Speaking through Manisha, Vikram said:

“In our Hindu mythology, lion is a form of Vishnu, one of our gods, who took his incarnation and became Narasimha, half lion, half human. Only lucky people see the lion, otherwise he is hiding himself out of sight. When we are growing up, when our parents see a lion, they will teach us how to behave with the lion, what is his discipline, what is our discipline, and how we have to live in coexistence, what are the rules and regulations of coexistence. But the *leopard* is an animal without trust, you cannot trust him ever, ever in your life. The leopard is a very clever animal, very flexible, he will touch you, kill you and then go. You cannot catch him. Our parents warn us about leopards, to stay wary of this animal, something we are never taught about lion. The leopard is a very cunning animal, the lion is a very royal animal. Leopard will always attack a human whenever he gets the chance. But lion, he'll never attack the human unless and

until we have crossed all the limits, we have disturbed them, otherwise they are not going to attack us. Lions usually move out of the way if they are resting on the track and someone walks by, or else you just walk round them.”

I asked Vikram about vultures.

“When one of our cattle is lost, or weak, or left behind, how can we find it? How do we know if it is alive? We climb a hill and look for vultures. Vultures have the best eyesight in the world. If they find a carcass, they will lead us to it, but after losing vultures we can no longer find our dead cattle.

“The animals we see, like lion and leopard, we can observe what is their mating period, what is their behaviour, what is their daily pattern, where do they live. But animals we don’t see, we have no knowledge of them. Birds, we see them as a beauty, sometimes we observe their different ways of nesting. Like those birds that make different kinds of nests from mud.\* I don’t know what it is, but I see it. We know some of them, like crow, like vulture, like cattle egret, which are related to our life. We know their behaviour, we see changes in their behaviour. And if you people are telling us that this is bulbul, this is myna, then we know it, otherwise we don’t have much experience with them. We just see and cherish the beauty.”

The warm night thrummed with cicadas, katydid and crickets. A long way away, an Indian thick-knee hurled its javelin of a cry into the darkness. I reflected: that along with the rabies crisis and the Parsis’ sudden cultural paroxysm, there was a smaller, quieter, undocumented casualty of vulture loss – that the hard lives of the Maldhari had become that much harder.



Birds have always been central to Indian culture, and both oral and literary traditions demonstrate a detailed cultural understanding of their lives. Over 3,000 years ago, the *Yajurveda* referred to the habit of the Asian koel of laying its eggs in other birds’ nests, the first specific mention in world literature of the phenomenon known as brood parasitism. Even earlier literature used the name *Anya-Vapa* for the koel, which has been translated as "that which was

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\* Manisha explained that he was referring to different species of swallow, whose nests differ in design between species.

raised by others", suggesting that brood parasitism, while not referred to directly, was understood a thousand years before the *Yajurveda*. The koel is much loved to this day for its song and is revered in the *Manusmriti*, an ancient decree that protects it from harm. The poet Kalidasa noted that koels sang with particular abandon at the gathering of the monsoon clouds and so devoted a paean to the bird in his epic poem *Meghadhoot*.

This traditional reverence has meshed seamlessly with an appreciation of the role of birds and other wildlife in providing essential services in contemporary life. Vultures' role as scavengers became ever more essential as South Asia's human population burgeoned. Their loss has been felt across the region and across society.

In 2020, the first comprehensive assessment of the status of birds in India was published. It analyses data for 867 species contributed by more than 15,000 birdwatchers. Current annual trends could be estimated for 146 species and of these, nearly 80% are declining, with almost 50% declining strongly. Just over 6% are stable and 14% increasing. 21% have Restricted or Very Restricted range sizes. Put simply, 101 Indian bird species are a cause for 'high concern'.

*The State of India's Birds* renders in stark graphics the apocalyptic crash in vulture numbers. Its lists and tables employ a colour-coding system that means that the most cursory glance is enough to understand the individual trajectories and the collective flow of the birds' fortunes. Against each bird's name are coloured rectangular symbols, like a decorator's paint swatch. One vulture, the slender-billed, is restricted in range to a relatively small area of the sub-Himalayan north and there is insufficient data to make a formal assessment. Next to the names of three others, the red-headed, white-rumped and Indian vultures, is a pleasant pinkish grey rectangle indicating that their distribution ranges over a 'moderate' proportion of the country. It is the long- and short-term trends in their populations that are the cause for greatest concern: 'strong decline' meriting them symbols the colour of congealing blood.



[www.stateofindiasbirds.in](http://www.stateofindiasbirds.in)



The tragedy that is often labelled ‘the Indian Vulture Crisis’ is really a South Asian crisis. The Indian populations of vultures are the largest in the world, and it is not surprising that India is where the decline was first noticed. The social implications, for the Parsi community, for the Hindu keepers of cow sheds and, less visibly, for tribal livestock herders like the Maldhari, were immediately and deeply felt. But the loss of vultures is being felt from Iran to Cambodia and, in an unprecedented coalition, any political differences between affected countries have been pushed aside in the interests of the region’s vultures. [SAVE – Saving Asia’s Vultures from Extinction](#) – is an international programme that unites scientists and officials from Bangladesh, Cambodia, India, Nepal and Pakistan.



Cinereous, slender-billed, white-backed and Himalayan griffon vultures, Nepal © Laurence Rose

In Nepal, creating the world’s first Vulture Safe Zone at a breeding colony close to Chitwan National Park led to an increase in the number of nesting birds from 17 to 45 pairs in the first three years. This programme first focused on removing all available stocks of veterinary diclofenac from within 50km of the breeding colony and replacing it with the vulture safe drug meloxicam. This was followed up with an extensive awareness programme on the importance of vultures. Workshops for farmers, vets and pharmacists spread the word about the

problems with diclofenac. The final element of the programme is to attract vultures into the safe area and to retain those already there. Safe food is provided by establishing a cow shelter in the villages surrounding the vulture colonies. These farms buy old cattle known to be diclofenac-free at the end of their working lives. When they die, their carcasses are provided to the vultures.

The pioneering work in Nepal has been followed up with Vulture Safe Zones in Gujarat which is particularly important for vultures due to the presence of large numbers of cow and animal shelters. These sites take in many injured and abandoned animals, and in times of drought can hold up to 10,000 cattle and buffalo. Traditionally any animals that died were placed out for vultures to feed on. The charities that run them have been quick to stop the use of diclofenac and replace it with meloxicam. In Bangladesh, the government has recently gazetted Vulture Safe Zones and has started implementing regional, later to be national, bans of the unsafe ketoprofen and aceclofenac, having already banned diclofenac. Iran banned the drug as long ago as 2015 and reports in 2019 suggest the effects are holding up well. A Cambodian ban began in July 2019 while steps are underway to implement bans in Oman and Saudi Arabia.



However, even the term South Asian Vulture Crisis proves to be a misnomer. In February and March 2020 more than 2,000 hooded vultures died in a [mass poisoning in Guinea-Bissau](#), pushing the species towards the brink of extinction in Africa. Hundreds were found dead on the outskirts of two towns, Bafatá and Gabú, 30 miles apart, over a two-week period. Early suspicion fell on accidental poisoning by strychnine, which is banned in Europe but is widely used in West Africa to control the feral dog population around rubbish dumps where vultures also feed. However, as more carcasses were found, local people noticed that many had been beheaded. Conservationists realised that the scale of the deaths pointed to organised crime, supplying a clandestine cross-border trade linked to a traditional belief that the head of a vulture is a talisman against harm.

Across Africa, populations of six different species of vulture have plummeted in recent years. They are often the innocent victims when poisoned baits are used illegally to kill lions, hyenas and other wildlife. They are also killed in more cynical fashion, deliberately targeted because their rapid arrival in the air above freshly-killed animal carcasses can quickly lead police and wildlife rangers to where elephant and rhino poachers are operating. In June 2019, 537 vultures

of five different species were poisoned at elephant carcasses near Chobe national park in Botswana.

Hope for African vultures comes from Asia, from where the concept of Vulture Safe Zones is being exported. Situated in a remote corner of South Africa's Northern Cape Province, Tswalu Kalahari Game Reserve covers a vast area of unspoilt wilderness in the heart of the Kalahari. Lappet-faced vultures breed on the reserve, and white-backed vultures that breed to the north, regularly visit the reserve to feed and bathe. The reserve has been working closely with BirdLife South Africa whose global network makes importing experience from Asia possible. Measures include fitting powerlines with markers and devices to prevent collisions and electrocutions, training staff in poison response, avoiding non-steroidal anti-inflammatory drugs for veterinary purposes, using only lead-free ammunition for hunting or culling, ensuring that carcasses put out at vulture restaurants are properly vetted, ensuring that poisons are not used to deal with problem animals, and safeguarding any vulture nests built on the property.



Eurasian griffon vulture, Spain © Laurence Rose

Meanwhile, several European governments have taken a backward step and licenced veterinary diclofenac. They include Spain, home to 90% of Europe's griffon vultures. Conservationists from South East Asia to Southern Africa, as well as in Europe itself, have called for global solidarity and for Europe to urgently address its own impending vulture crisis.



In India, the vulture is worshipped as Jatayu, the vulture god of the epic *Ramayana*, who died protecting Goddess Sita. Nowhere else, as far as I know, are the carrion-eating, image-challenged vultures so revered, but they may finally become more widely appreciated at least. We must hope and trust that this happens before their loss from wider tracts across the world forces a reappraisal of their worth.

Reference:

1. Markandya, A., et al., (2008) Counting the cost of vulture decline—An appraisal of the human health and other benefits of vultures in India. *Ecological Economics*  
doi:10.1016/j.ecolecon.2008.04.020

Note:

My visit to Gujarat in October 2018 was primarily to report on the special relationship between people and lions. In the same trip I visited the slums and tribal hamlets of Mumbai to report on the interaction between people and urban leopards. This study of big cat – human interaction is written up as chapter eleven in [\*Framing Nature – conservation and culture\*](#).



Jayatu, the [world's largest bird sculpture](#) under construction in Kerala, 2013. Wikipedia