If the 1990s saw an alarming dip in India's vulture population, the last decade showed its reason. Today, there are reasons to believe that the 'ultimate scavenger' is on a comeback trail, says **K S Gopi Sundar**

The bald phoenix

The dog and crow populations in India appear to be increasing — both in the villages and in the cities. Good news, given that both are 'scavengers'. But behind it lurks a disturbing suspicion: has this been because of a recent decline in the number of another scavenger species: the vultures?

Well, it need not be the case. In fact, the picture can even be encouraging. D S Dadwal, the range forest officer at Himachal Pradesh's Pong Dam, recounts the results of his recent vulture surveys. A whopping 17 breeding colonies of five vulture species, he says, are going strong — more than 250 young birds have flown from these nests in the last six years.

Kukki Sharma, a conservationist, has been surveying breeding colonies of three vulture species in Bundi, Kota and Bhilwara districts of Rajasthan for the last seven years. He says that he has watched the populations of the resident species slowly soar back. In one observation recently, over 100 vultures fought over two cattle carcasses.

My surveys in Uttar Pradesh show that the small Scavenger Vultures remain widespread with excellent breeding success. Young White-rumped and Long-billed Vultures were seen in surprisingly good numbers in the Uttar Pradesh terais. Clearly, many pairs continue to breed here. These few data sets, along with others in Gujarat, Karnataka, Madhya Pradesh, Haryana and Punjab, are part of a happy realisation: vultures continue to persist and breed in the wild in India despite their catastrophic decline caused by veterinary drugs.

Cattle — cows and buffaloes — are the lifeline of a vast proportion of Indians in rural areas. Traditional Hindu thinking does not permit eating cattle, especially cow meat. Instead, dead and skinned cattle are discarded into areas outside of villages or towns. Until recently, large flocks of huge vultures resided in these locations and helped by eating up the dead cattle. The bones were then picked up for use as lime in brick-making and a range of other products. Vultures used trees in villages and protected parks like the Keoladeo Park in Rajasthan's Bharatpur to nest in. This system performed ably as a unique and efficient example of human-wildlife coexistence.

In the 1990s, Dr Vibhu Prakash of the Bombay Natural History Society noticed that vultures in Bharatpur displayed unusual behaviours. They appeared weak, drooped their heads, and soon died in very large numbers. In less than five years, Bharatpur lost over 90 per cent of its vultures. Dr Prakash and his colleagues scrambled to bring this catastrophe to the world's notice. Scientists and naturalists in other parts of India, Nepal and Pakistan responded. The decline of vultures appeared not to be restricted to Bharatpur, or even Rajasthan — three entire species of vultures had disappeared from the Indian subcontinent!

Post-mortem tests showed the birds suffered from visceral gout leading to their death. Meanwhile, cattle carcasses began to accumulate, and many villagers began dumping them into rivers and canals to avoid the stench and the risk of disease. In 2004, Dr Lindsay Oaks of Washington State University and her colleagues in Pakistan tested organs of both vultures that died from the mysterious cause, and vultures that seemed healthy. All the dead vultures had large concentrations of the veterinary drug Diclofenac in their system. When live vultures were injected with small doses of this drug, they developed the exact same symptoms, died and post-mortem results showed gout in their internal organs. Diclofenac appeared to be the cause of the near-extinction of the vultures in south Asia.

Reacting rapidly to this research, Dr Susanne Schultz from the Royal Society for Protection of Birds (RSPB), along with experts from the BNHS, Cambridge University and BirdLife International, carried out a survey in India and Nepal. They found dead vultures and cattle carcasses had a high concentration of Diclofenac everywhere. Diclofenac, a non-steroidal, anti-inflammatory drug used on animals and humans, was being used heavily and widely on cattle, and appeared without much doubt the cause of the widespread vulture decline. Dr D Swarup of the Indian Veterinary Research Institute and other colleagues from the BNHS, RSPB, Cambridge University and Aberdeen University also moved swiftly to find out an alternate drug with the same curative properties of Diclofenac, but did not affect vultures. In 2006, they discovered that the drug Meloxicam performed as well as Diclofenac on cattle, but had no negative effects on vultures. Late last year, Dr Cuthbert and his team found that Ketoprofen, another anti-inflammatory drug with widespread veterinary use, also badly affects vultures — though is less harmful compared to Diclofenac.

Diclofenac was produced in a very large quantity and was consequently much cheaper than Meloxicam. The pharma industry requires to undergo a major change in the production side of things to ensure the safety of vultures. BNHS and other non-profits have established captive-rearing facilities for vultures. Chicks reared here will grow without fear of being poisoned, and with time, there will be enough to begin repopulating the wild. Small pockets of vultures, however, continue to persist in many locations in the country. This provides hope that the change in the veterinary drug will be able to assist the vultures to make a comeback. In addition to research and lobbying to replace Diclofenac, conservation non-profits are setting up "vulture restaurants" in many locations. Carcasses are carefully monitored and only those without the harmful drugs are being put out to increase safe foods for the vultures.

The decline of vultures has badly affected the Parsis, who dispose their dead by placing the bodies atop a tower. Scavenger birds like vultures eat the bodies and avoid their putrefaction. With the disappearance of vultures, bodies either putrefy, forcing Parsis to use captive vultures or "solar concentrators" to speed up the process of decomposition, and even forcing some to bury bodies. However, no alternative method appears to be good.

Villagers continue to dump cattle carcasses at the original sites, and into rivers and canals. In the absence of the large vultures, these have provided a continuous source of food to other scavengers — primarily crows and dogs. Therefore there are unusual surges in their populations. The smaller Scavenger Vulture too appears to be less affected by Diclofenac and also finds food in these carcasses.

The scavenger story is still playing itself out in the south Asian countryside, and in the corridors of power. It is a striking example of tenuous human-wildlife connections in even seemingly sustainable examples. Very small changes in habits — here, the use of Diclofenac — can set off cascading effects in undesirable directions to the detriment of both humans and natural systems. Careful surveys have located many breeding colonies from which many young vultures are raised each year. But it remains to be seen if the large vulture, the ultimate scavenger, will once again soar the Indian skies in their erstwhile numbers.

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Small pockets of vultures continue to persist across the country. The smaller Scavenger Vulture too appears to be less affected by Diclofenac that used to kill them in a big way