

The Asian Vulture Crisis

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The Gyps vultures of South Asia are large birds with relatively unknown, foraging, reproductive, migratory and dispersal patterns. Populations of Gyps vultures on the Indian subcontinent were considered very abundant as recently as the late 1980s and early 1990s, and among the most common raptors in the world. Vulture declines were first noticed in 1996 in Keoladeo National Park in central India and by the year 2000 the three Asian Gyps vultures were listed as critically endangered. Population surveys estimated that the three species of Gyps vultures (*Gyps bengalensis*, *Gyps indicus*, and *Gyps tenuirostris*) had suffered declines in excess of 95%. These three species represent half of all raptors classified in this most precarious state of imminent global extinction.

The declines initially sparked fears of a new pathogenic infectious disease. However, in 2003 and 2004, two major scientific breakthroughs allayed fears of viral or bacterial threat. These breakthroughs concisely outlined the nature of the problem, and the steps that would be necessary to remedy it. The first came from The Peregrine Fund's team of biologists, who had been working on the problem for nearly three years. The team, led by Rick Watson and Lindsay Oaks, identified renal failure, and the build up of uric acid crystals

on the internal organs as the almost universal (85%) symptom in necropsied vultures. Eliminating the possible causes of renal failure in birds the team found their culprit among the region's recently introduced veterinary pharmaceuticals.

Diclofenac is a non steroidal anti-inflammatory (NSAID) drug administered to livestock on the Indian subcontinent. Diclofenac is administered for many of the same reasons that a human might take aspirin or ibuprofen, it masks nominal pain and discomfort and gets us back on our feet. Diclofenac is widely used in the region in the veterinary treatment of domestic livestock, carcasses of which are the vultures' primary food source. In a part of the world where livestock play integral roles in the livelihood of many rural people, the drug diclofenac translates into a healthy and efficient work force. At 50 cents (US dollars) per treatment, it is also a cheap drug. Sales of the drug in India exceeded 10 million doses in 2004, and it is manufactured and distributed by more than 45 companies in the region.

The second major breakthrough in the case came from Rhys Green, at the Royal Society for the Protection of Birds. Building on the proof that diclofenac was the cause of renal failure in the vultures, Dr Green designed a model to determine what percentage

of carcasses found in the wild needed to contain diclofenac to cause major species decline. His model, which accounted for vulture feeding frequency, toxicity of diclofenac (birds can die of a single exposure), and frequency of contaminated carcasses, demonstrated that only one contaminated carcass in 250 was necessary for the observed population crashes. Actual sampling of carcasses revealed that nearly one in ten had sufficient levels of diclofenac to cause renal failure in a Gyps vulture.

Attendees of a summit meeting, convened in Kathmandu by The Peregrine Fund (TPF) and Bird Conservation Nepal (BCN) in February 2004 agreed on a course of action which included banning veterinary use of diclofenac to remove the threat from the environment; establishing three captive populations of each of the three species of vulture for safe-keeping and to initiate a captive breeding programme; and eventually releasing the captive bred vultures once contaminants were removed from their environment.

Nearly three years later, data from the Asian Vulture Population Project AVPP, a Peregrine Fund initiative to monitor the last remaining colonies of the Asian Gyps vultures, show that two of the largest breeding colonies (~1400 breeding pairs) have been extirpated, and only about 40 breeding pairs remain at the largest known remaining colony of *G. bengalensis*. The only ban

in place restricts use of diclofenac by government employed veterinarians in the Indian State of Gujarat. A video documentary, *The Last Flight* from All Time Productions, prompted the Prime Minister of India in March 2005 to promise a national ban on the drug within six months. Fifteen months later the drug controller of India requested the ban to be implemented within three months, and some manufacturers have responded.

In the days following the summit meeting ERWDA, the Environmental Research and Wildlife Development Agency of the United Arab Emirates, came forward and offered to collect members of all three species of endangered vulture, and fly them back to Abu Dhabi where they would be cared for in state of the art facilities by people trained in raptor care and management. This generous offer represented a significant expenditure of resources on the part of ERWDA, but after much vacillating, the offer was rejected by Pakistani authorities. Unstated reasons suggest that national pride led Pakistani officials to stop relocation of the last remaining Pakistani Gyps vultures outside of their national borders. An ulterior motive, if there is any, is not known.

Recognizing the slow pace of government action, and its limited effectiveness given the relative ease of acquiring and administering the drug even in regions where it has been banned,

The Peregrine Fund and its partners have undertaken a more grassroots approach to reducing diclofenac use in the field. The Peregrine Fund, together with the Bombay Natural History Society is attempting to appeal to the sensibilities of veterinarians and livestock owners, urging them through public information dissemination to curtail the use of diclofenac. (An English language example of a public information flyer is included in this issue)

The recent approval of meloxicam as a substitute for diclofenac is a promising step towards reducing contamination of the vulture's food sources. Meloxicam is a NSAID with the therapeutic value of diclofenac, and not toxic to vultures. Drawbacks to meloxicam include its currently limited distribution and much higher price.

Experimental provisioning by The Peregrine Fund at Toawala vulture

colony near Multan, Punjab, Pakistan suggests that vultures provided food will reduce the distance at which they forage and limit their feeding to mainly the clean food provided and thus reducing mortality. It is a short-term strategy, but important at this time to sustain enough birds in the wild until long term solutions can be enacted.

Vultures have been widely used in South Asia as a natural carcass disposal method and their loss represents not only loss of biodiversity but also loss of important ecological, economic, and human health and cultural resources. Unfortunately, while the plight of these vultures is obvious, their ecological importance is high and the steps needed to save them are clear, the AVPP shows that vulture populations continue to decline at a rapid rate. Political inertia means that the AVPP may monitor these large birds into extinction.

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Asian Vulture Population Project

Assist The Peregrine Fund's Asian Vulture Population Project by submitting breeding information about vultures in South Asia (species, how many nests, how many chicks, geographical location, etc.). Visit the Asian Vulture Population Project at: www.peregrinefund.org/vulture

