

Vulture death mystery explained?



An exciting development in the search for the reason why vultures belonging to the *Gyps* genus have declined by more than 90% in parts of South Asia (see e.g. *World Birdwatch* 20(4): 6; 24(1) 14–15) in the last 10 years was announced at a meeting of raptor biologists in Hungary recently. Lindsey Oaks, from Washington State University working with The Peregrine Fund, presented information on the causes of death of several vultures from three colonies in Pakistan.

Autopsies on dead birds found they were frequently suffering from gout – like the human condition, caused by uric acid crystallising in the body. Oaks found that birds with gout had high levels of an anti-inflammatory painkilling drug, diclofenac, in their kidneys, whereas dead vultures without gout had undetectable levels. It appears that this drug, used for human medicine for decades, has recently been introduced as a veterinary medicine in India and Pakistan.

Whilst these results could explain vulture deaths in the studied Pakistani colonies, many issues require explanation if diclofenac is responsible for vulture declines in India, where the Bombay Natural History Society (BNHS, BirdLife in India) has been working with the RSPB (BirdLife in the UK) and the Institute of Zoology (London) to investigate the phenomenon, funded by the UK Government's Darwin Initiative.

Debbie Pain, Head of International Research at RSPB commented "Whilst diclofenac could be the breakthrough we've been waiting for, we can't yet assume that it is responsible for the vulture declines in India. Much investigation needs to be done, and we are working on this with BNHS and IoZ as a matter of urgency."

Vibhu Prakash, Principal Scientist at



White-backed Vultures *Gyps bengalensis*, once a common sight in India, are increasingly rare. (Inset) A sick vulture at the Vulture Care Centre displays the classic neck-drooping symptom.

BNHS outlined some of the anomalies under investigation "The experimental results from Pakistan suggest that diclofenac has a rapid effect on birds, with death following several days after exposure. Observations from the field and from our recently opened Vulture Care Centre in India document the birds experiencing a state of prolonged illness before death, often lasting for several weeks. Additionally, lesions more characteristic of infectious disease than a contaminant have been found in several vulture carcasses in India. Diclofenac is thought to be excreted by mammals within a few days. A high proportion of cattle across India would therefore have to be treated shortly before death for vultures to be exposed and to decline on such a large scale. Diclofenac is also considered toxic to certain other bird species and to dogs. However, of all the scavenging species present at cattle carcasses, only populations of *Gyps* species appear to be severely affected and dog

populations have increased noticeably at sites where *Gyps* vultures have declined."

BirdLife is very concerned that should the declines in India prove to be caused by an infectious disease and not diclofenac, it could spread through migratory Griffon Vultures *Gyps fulvus* to other vulture populations across the Middle East, Europe and Africa. Should diclofenac prove to be an important factor in India, however, spread is unlikely, as long as the drug's use in veterinary medicine can be prevented. Until this is shown to be case – and results of tissue sample analysis from dead Indian birds are keenly awaited – BirdLife is keeping an open mind on the matter.

Additional information can be found in: Prakash *et al.* (2003). *Biological Conservation* 109(3): 381–390; Pain *et al.* (2003) *Conservation Biology* 17 (3): 661–671; Cunningham *et al.*, (August 2003) *Animal Conservation* in press.

Suzanne Shultz



UK Environment Minister, Elliot Morley (right) at the opening of the Vulture Care Centre in northern India, in February 2003. The Centre is a joint initiative by the Bombay Natural History Society (BNHS, BirdLife in India), the Haryana State Government, the RSPB (BirdLife in the UK) and the Institute of Zoology (IoZ London), with help from the National Bird of Prey Trust and funded by the UK Government's Darwin Initiative and Haryana State Government. The Centre is being used to house sick vultures to study the illness, and to investigate possible causes of the declines. (Left to right: Vibhu Prakash (BNHS); Debbie Pain (RSPB), Andrew Cunningham (IoZ), Mr Jakati (Haryana State Government) and Elliot Morley).