



INADVERTENT EXTINCTION

The sight of circling vultures has long been regarded as an omen of death. Few of nature's signs are as universally recognized as the slow, spiraling flight of these giant scavengers. Since the new millennium, however, the sight of vultures circling has taken on a new meaning – signaling one of the world's greatest wildlife catastrophes.

Vulture populations in south Asia and India, once numbering in the tens of millions, have seen declines of 95-to-99 percent, and without a sustained, successful intervention, Indian white-backed, long billed and slender billed vultures could be facing extinction within the next ten years.

The early stages of their population freefall was first observed 15 years ago by Indian ornithologist Vibhu Prakash, who saw the birds sitting listless in the trees, their long necks hanging, before falling from their perches to the ground. Despite a digestive system capable of consuming anthrax-tainted meat without consequence, vultures were dying from some kind of poisoning.

Vibhu's observation sparked an international research effort and in 2003, a research team led by The Peregrine Fund presented definitive findings singularly attributing vulture deaths in India to the veterinary use of diclofenac – an anti-inflammatory drug (NSAID). Used predominantly to treat livestock on the Indian subcontinent, diclofenac was found to be highly toxic to vultures, causing kidney failure within days of feeding from a tainted

carcass. And because vultures typically feed in large groups, every cow that died with the drug in its system was impacting dozens of birds.

Today, where millions of vultures once flourished, only a few thousand remain. In the hot climate of India, where cattle are revered and historically taken to the outskirts of a city or town after death, vultures once played a critical role in preventing disease through the consumption of rotting flesh. As their numbers have declined, other scavengers and feral dogs have moved in, raising the potential spread of diseases to both human and wildlife population.

But progress is being made to halt the vulture death spiral. In a remarkable show of unity, international conservation groups worked together and with local governments in India, Pakistan and Nepal to phase out the use of diclofenac and replace it with meloxicam, a safe and effective NSAID alternative. Diclofenac has now been officially banned for veterinary use in all three countries, and vulture populations in these areas are being closely monitored. Throughout the region, conservationists are also now working to provide “clean” feeding stations for vultures, and captive breeding programs have been established in Pakistan and India, with another planned for Nepal.

While progress is being made – some cattle farmers still continue to use diclofenac in treating their animals – the

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How Treating Livestock Brought Three Species of Asian Vultures to the Brink of Extinction

By Laura J. Ellis and Dr. Todd Katzner



crisis facing vulnerable populations of vultures in other parts of the world continues. These populations are smaller and more isolated than those in south Asia, making undocumented but catastrophic declines possible for those species facing habitat loss and a scarcity of food resources, and environmental poisons.

Adding to the conservation challenge, there is almost no information on the true size of vulture populations in any part of their new or old world range. This is largely because vultures are among the most difficult of raptors to count. Although they are reasonably faithful to colony sites, individuals breed irregularly, non-breeders are itinerant, and all vultures can travel hundreds of kilometers to feed.

To help conservationists gain a better picture of vulture numbers, Dr. Todd Katzner, director of conservation and field research at the National Aviary, in partnership with Dr. Nancy Clum of the Wildlife Conservation Society and Yula Kapetanakos of Cornell University, and with funding assistance from the Association of Zoos & Aquariums (AZA) Conservation Endowment Fund grant, are employing an innovative technique to help provide accurate counts of vulture populations in Cambodia and Kazakhstan.

Traditional measures of tracking these birds require capture, marking and recapturing individual birds – a process that requires exceptional effort. The technique developed by Dr. Katzner and Dr.'s Jamie Ivy and Andrew DeWoody at Purdue University instead uses noninvasive measures to collect data on these birds.

For the past several years, Katzner and his fellow researchers have been analyzing DNA gathered from feathers shed at vulture feeding sites in the Tian Shan Mountains of Kazakhstan and in

Cambodia. The feathers are trimmed and exported to Cornell, where Kapetanakos, a graduate student and member of the research team, analyzes the feathers and identifies individual birds.

The resulting data is enabling Dr. Katzner and his partners to generate reasonable estimates of the size of vulture populations and evaluate how well individual vultures are surviving in the context of an ever-increasing human population. In time, this information will be provided to conservation groups to aid in their work.

While few biologists believe that vulture populations will ever return to their former millions, the successful action and cooperation between researchers, conservation groups and local government demonstrated in India illustrates that much can be achieved when good science, shared goals, and a willingness on the part of government to make swift and definitive changes come together.

Humans have deliberately caused the extinction of many species; the story of how we have inadvertently brought about the imminent extinction in the wild of three species of Asian vultures is therefore a particularly poignant reminder that as the dominant force on the planet, we have a moral obligation to do all we reasonably can to ensure their survival.

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