Regional Response to the Vulture Crisis : A Symposium

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Vultures have been ever-present in South Asia; however, in recent years they virtually disappeared. It has been reported that the present vulture population is probably below ten thousand – a sharp decrease of 99.9% in the last 20 years. IUCN has listed three species viz., *Gyps bengalensis*, *Gyps indicus* and *Gyps tenuirostris* as Critically Endangered. Diclofenac, an anti-inflammatory drug used to treat livestock has been identified as the cause of the vultures' dramatic decline. If a vulture feeds on an animal that has died after a few days of being treated with diclofenac, there is a very high chance it will die.

The Ministry of Environment and Forests and Central Zoo Authority (CZA), Government of India organized a two-day *Symposium on Developing a Regional Response to the Conservation of South Asia's Critically Endangered Vulture Species,* at India Habitat Centre, New Delhi, 3-4 May 2012, in collaboration with Wildlife Institute of India, Dehra Dun, Bombay Natural History Society, Mumbai and IUCN, International Union for Conservation of Nature. A range of participants from Bangladesh, India, Nepal and Pakistan attended this programme.

During the inaugural of the symposium, P.R. Sinha, Director, Wildlife Institute of India welcomed the gathering and the representatives from neighbouring countries. Ms. Aban Marker Kabraji, Regional Director, IUCN Asia Regional Office, Bangkok during the inaugural address said three species of vultures endemic to South Asia that was once found in millions about 100 years ago is now Critically Endangered and declined to 99%, the cause primarily due to diclofenac. The best way to save the species is to remove the poison and restock the species.

Dr Jagdish Kishwan, Addl. DGF (WL), Ministry of Environment and Forests, Government of India said that India has eight vulture breeding centres now, including all three Critically Endangered species and providing financial support through CZA. The decline of vulture population in India has been checked but restocking will require dramatically more resources and efforts to bring them back. He stated that this symposium would not end with suggestions but would become a reality at regional level with IUCN. Member Secretary, CZA, B.S. Bonal gave the vote of thanks.

The two-day programme had five technical sessions that started with the overview of the current status of vultures Chaired by Asad Rahmani, BNHS and Co-chaired by Ravi Singh, WWF India. Chris Bowden, Chair of the IUCN SSC Vulture Specialist Group gave a talk on the Vulture population trends and current status in the wild at global and regional perspectives. He highlighted the dramatic decline in populations of three vulture species in South Asia since the 1990s. Further surveys in India and Nepal in 2011 indicated that populations of all three species of vulture remained low, but the decline had slowed and may even have reversed for *G. bengalensis*, both in India and Nepal. He also reported that the most recent available information indicates that the elimination of diclofenac from the vultures' food supply is incomplete, so further efforts are required to fully implement the ban of diclofenac.

Rhys E. Greens, University of Cambridge and Royal Society for the Protection of Birds, UK presented a regional update on the use of diclofenac and other emerging veterinary formulations. His study between 2004-2008 that includes sampling before and after the ban on the veterinary use of diclofenac in India, imposed in 2006 showed little change in the prevalence and concentration of diclofenac in ungulate carcasses between the survey before the ban and the one conducted soon after its implementation. However, both the prevalence and concentration of diclofenac had fallen markedly following the implementation of the ban in 2007-2008. Continued efforts to remove diclofenac from vulture food sources are necessary for future recovery. His study in 250 veterinary and general pharmacies, after the ban on veterinary diclofenac, in 11 States in India, between November 2007 and June 2010, indicated twelve different classes of NSAIDs on sale for veterinary use in 176 pharmacies. He also said that availability of large vials of diclofenac meant for human use and containing much larger quantities of the drug than is needed for a single human dose, to pharmacies, is making the treatment of large ungulates with human diclofenac much easier than it would be if only small vials of human diclofenac were available. Of the other drugs on sale for veterinary use only meloxicam has been tested sufficiently and established that it does not cause mortality of vultures. He concluded that replacement of toxic veterinary NSAIDs by safe drugs is incomplete. The use of other drugs such s Ketoprofen may bring additional problems and mortality of vultures.

Richard Cuthbert, RSPB said, *in-situ* conservation efforts have focused on two main methods: the establishment of 'vulture safe zones' and the use of 'vulture restaurants'. Vulture safe zones have undertaken a broader programme of work including undertaking conservation education and advocacy programmes and most crucially eliminating the use of diclofenac and promoting meloxicam. In order to provide an effective diclofenac free area vulture safe zones must be large with a radius of at least a 100km and area 30,000 km^2. Long-term monitoring of vulture numbers and accurate monitoring of the prevalence of diclofenac in ungulate carcasses and in pharmacies is essential for measuring the effectiveness of these activities for protecting vultures.

In continuation, Homi Khusrokhan, President, BNHS talked about regulations and the pharmaceutical sector. He stated that decline of vulture population can only be arrested and reversed over the years if more stringent regulations are introduced and enforced. It needs the concerned efforts of the government, environmental organisations,

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pharmaceutical industry, practitioners of veterinary medicine and greater awareness of people engaged in farming and animal husbandry.

Mr. B.S. Bonal, CZA and Dr. Vibhu Prakash, BNHS gave an update on *ex-situ* vulture conservation in India. They reported that the South Asia Vulture Recovery Plan, formulated in 2004 strongly recommended the establishment of scientifically managed Conservation Breeding Programmes for the three Gyps Vultures. The CZA encouraged four zoos to adopt the breeding programmes including Sakkarbaugh Zoo (Gujarat), Van Vihar Zoological Park (MP), Nandankanan Zoological Park (Odhisa), and Nehru Zoological Park (Andhra Pradesh), by providing initial funds for the establishment of off-exhibit breeding. Dr. Vibhu gave a detailed report about the three vulture conservation breeding centres at Pinjore (Haryana), Raja Bhat Khawa (West Bengal) and Rani (Assam) constructed by the respective state governments in collaboration with the BHNS.

In the second technical session, Chaired by Homi Khusrokhan, BNHS and co-chaired by B.S. Bonal, presentations were given by the four range countries of vulture to review progress in implementing national vulture recovery and action plans. Monirul Khan from Jahangirnagar University briefed on the status and conservation of vultures in Bangladesh. He reported that once common White-backed vulture population has declined sharply and now Bangladesh may hold one thousand vultures. Though veterinary use of diclofenac is banned from October 2010, the country is yet to have a national vulture Action Plan.

Maheshwar Dhakal representing Department of National Parks and Wildlife Conservation, Nepal gave a detailed talk on vulture conservation in Nepal. The Nepal government took major steps towards banning the manufacture of diclofenac, establishing conservation breeding centres and endorsing and implementing the Vulture Conservation Action Plan. The Action Plan emphasizes both *in-situ* and *ex-situ* conservation throughout the country with strong focus on scientific research and capacity building of conservation partners and local communities. The Government of Nepal has established a Vulture Conservation Breeding Centre in Kasara, Chitwan National Park.

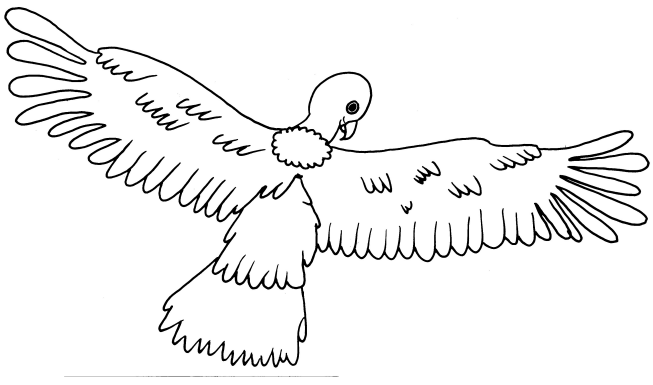
Pakistan representative Mr. Mushtaq Ali Memon, Secretary to the Government of Sindh Forest and Wildlife Department, Pakistan gave a detailed report on Vulture conservation status in Pakistan. According to his report a recent population survey of vultures across 77 sites in Pakistan, conducted by WWF Pakistan between November 2010 and April 2011, revealed that the active breeding of *G. bengalensis* and *G. indicus* are primarily restricted to Nagarparker area, including the Karunjhar hills along the south western border of the Sindh province.

Dr. P.C. Tyagi, Faculty, WII delivered the status report of vulture conservation in India. He stated that the National Board for Wildlife (NBWL), chaired by the Prime Minister, made a resolution in March 2005 'to take steps to phase out veterinary diclofenac within six months'. Several inter-ministerial initiations have also focused on streamlining the loose ends to control the use of human diclofenac in the veterinary sector, as well as to promote alternate safe veterinary drugs as a substitute for diclofenac. India formulated the National Action Plan for Vulture Conservation in 2006. As part of it one of the most significant initiatives has been the BNHS_RSPB and Haryana Government Collaborative vulture conservation programme at Pinjore. The Pinjore centre has acted as the fountain head and two more centres have been established at Buxa (WB) and Rani (Assam). Now Central Zoo Authority has established several centres in Junagadh, Bhopal, Bhubaneswar, Hyderabad and Ranchi. A network of institutions has been constituted, including Zoological Survey of India, Central Zoo Authority, Centre for Environment Education, Indian Veterinary Research Institute, Wildlife Institute of India and SACON to work collaboratively to address vulture conservation issues in a professional manner.

Day 2:

Technical Session Three was chaired by Mr. Hem Pande, Joint Secretary, MoEF. Dr. B.C. Choudhury, WII gave a well-defined talk entitled Birds and Ecosystem with Special Reference to Vultures. He listed a series of multiple ecosystem services provided by birds in general such as: Insect pest control in agriculture and forestry, control of vermin and other potential creatures, pollination of flowers, seed dispersal and regeneration of forest trees, food for man, manures, bio-indicators, aerodynamic studies, traditionally used as messengers in communication, use of feathers, aesthetic and recreational values and scavenging in urban, rural and wilderness environments. Vultures as scavengers contribute a variety of ecological services in different ecological settings. They keep the wilderness healthy and hygienic, assist managers in locating kills, as well as dying and diseased vulnerable prey, facilitates terrestrial scavengers in their feeding ecology, and controls spread of wild disease pathogens, particularly important in grassland, desert, savannah, and dry deciduous scrub forest. In rural and urban landscapes as a scavenger vulture is a major contributor in rapid ingress and disposal of livestock carcasses from the human landscape, assists and keeps landfills, abattoirs and other such facilities free from livestock carcass remains and compliments the sun light dependent natural decomposition of carcasses. Counting the cost of vulture decline related ecological services provided, he highlighted the study report of Markandya 2008, and stated that an increase in the population of feral dogs and other human commensal, facultative scavengers and disease spread to humans and domestic livestock and their management cost was estimated to be $ 34 bn. over the year 1993-2006. Additional cultural cost to the Parsi sects which rely on vulture for corpse cleaning was estimated to be $ 1.6 mn. during the same period.

Mr. Khojeste P. Mistree, Bombay Parsi Panchayat gave a talk entitled, Vultures in the Parsi Tradition. He explained briefly the innate link between conservation beliefs underlying classical Zoroastrian theology and what is today referred to

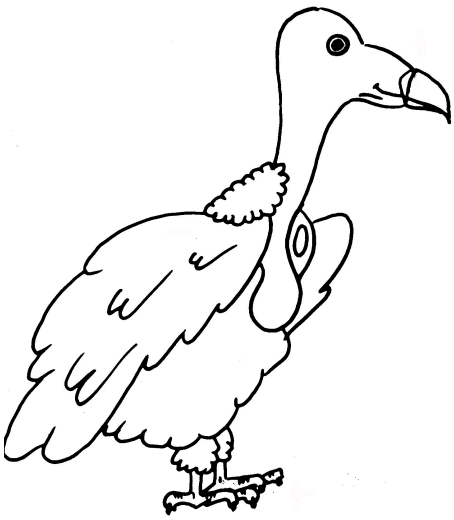


as ecology. In addition to the Zoroastrian theological paradigm he briefly explained the cardinal principles of the faith such as dualism, the saws of purity and the belief that the negation of life is the temporary triumph of evil over the forces of good. He also explained the unusual method of disposal of the dead through exposure to the sun and birds of prey as an ecology reality, as practiced by the Parsis. He said the importance of the vulture and its role with regard to the disposal of Parsi corpses, where *Towers of Silence* are in use, not only fulfils the religious needs of the Parsis but also is an inherent commitment to promote conservation and ecology by a miniscule urban community living in Mumbai.

Vibhu Prakash, spoke on the BNHS initiative on the *Tower of Silence*. He explained that it is possible to bring the vultures back to the Towers of Silence by initiating a vulture conservation breeding programme. The breeding programme at the Towers of Silence will contribute significantly to the nation-wide programme of *Gyps* species of vultures. Initially it will be tried with the surrogate species, Himalayan Griffon, which is still common and subsequently, on successful keeping, White-backed vulture and Long-billed vulture will be kept. The onus of making sure that the cadavers do not contain the drug diclofenac will be on the community, which can easily be achieved through an active awareness programme within the community.

Panjrapoles are traditional cattle camps run by the Jain community in Gujarat. Kartik Shastri, Bird Conservation Society, Gujarat highlighted the potential role which can play in the conservation of vultures. It has been observed that vulture populations are higher in the regions of Gujarat where there are permanent feeding sites of *Panjrapoles* (carcass dump sites). Building upon these traditional institutions as a strategy could prove highly beneficial for vulture conservation.

Mr. B.M.S. Rathore, Joint Secretary, MoEF and Mr. S.K. Patnaik, Member CZA chaired technical session four. As part of this session, Chief Wildlife Wardens of different States of India presented the status of vulture conservation initiates. Mr. Sharma, CWW, Orissa; Mr. M.A. Waheed, Curator and DCF, Hyderabad Zoo, Mr. S.K. Goyal, PCCW (WL), Gujarat, Mr. A.K. Malhotra, CWW, Jharkand; Mr. R.K. Sapra, CWW, Harynana; Mr. Satpal Dhiman, DFO, Shillong, and Dr. Sharma, IVRI presented their reports on the status of vulture conservation and initiatives in their respective states.



Technical session 5 was chaired by Ms. Aban Marker Kabraji IUCN Asia and R.K. Jakarti. This session had two presentations. Ms. Nita Shah spoke on the role of advocacy in vulture conservation. Advocacy has significantly contributed to the major achievements in vulture conservation in India. Intense outreach, advocacy, ground work, dialogues, initiatives with multiple concerned ministries of Health, Agriculture, Commerce, Chemical and Fertilizers and research assisted in formulation and making of policies.

In continuation of this Dr Scott Perkin, Head, Regional Biodiversity Conservation Programme IUCN, spoke on Current regional initiatives on vulture conservation and the way forward. He reviewed the potential for a new regional vulture conservation programme in South Asia. The status of existing regional vulture conservation and recovery initiatives, including the activities of SAVE (Save Asia's Vultures from Extinction). The talk was also synthesized the recommendations for regional action that have emerged from the discussion and presentations over the course of the two-day symposium.

Dr Jagdish Kishwan, Additional DGF (WL), MoEF, Government of India, chaired the concluding session and Ms. Aban Marker Kabraji, Regional Director, IUCN Asia Regional Office, Bangkok acted as the co chair. Dr. T.P. Singh, Deputy Regional Director, IUCN Asia Regional Office presented the regional declaration on vulture conservation. At the end of the symposium, a regional declaration of vulture conservation was presented and adapted by the representatives of all four governments and the participants (Appendix I). A regional Steering Committee also was proposed.

Appendix I

Regional Declaration on the Conservation of South Asia's Critically Endangered Vulture Species

Delhi, 4 May 2012

We, the Government Representatives taking part in the *Symposium on Developing a Regional Response to the Conservation of South Asia's Critically Endangered Vulture Species*, held in Delhi from 3-4 May 2012, hereby adopt this regional declaration: Government of the People's Republic of Bangladesh, Government of India, Government of Nepal, Government of Pakistan

RECALLING that vultures are specialized scavengers that provide a critically important ecosystem service by removing carcasses of livestock and wild animals, and carrion from the environment;

FURTHER RECALLING that vultures are an integral part of the cultures of South Asian countries, and play a central role in several of the region's ancient religious traditions;

RECOGINZING that South Asia's populations of long-billed vulture (*Gyps indicus*), slender-billed vulture (*Gyps tenuirostris*) and white-rumped vulture (*Gyps bengalensis*) have declined by more than 99 per cent since the early 1990s;

NOTING that IUCN (International Union for Conservation of Nature) has listed all three species as Critically Endangered on the IUCN Red List;

FURTHER NOTING that IUCN called for urgent measures to be taken to conserve these species, in Resolution 3.079 on the *Conservation of Gyps Species of Vultures in South and Southeast Asia*, adopted at the IUCN World Conservation Congress in Bangkok in 2004;

RECALLING Aichi Biodiversity Target 12, which calls for all countries and stakeholders to prevent the extinction of known threatened species by 2020 and to improve the conservation status of those species most in decline;

FURTHER NOTING that these rapid declines have been caused by human activities, in particular, the use of diclofenac (a non-steroidal anti-inflammatory drug) in the livestock sector;

COMMENDING the important steps that have already been taken by Governments, scientific bodies, non-governmental organizations, international organizations and the private sector, including:
The ban on veterinary diclofenac in Bangladesh, India, Nepal and Pakistan;
The establishment of conservation breeding centres in India, Nepal and Pakistan;
The initiation of "vulture safe zones" together with safe vulture feeding sites in several countries;
Promoting research and monitoring of the vulture population.

FURTHER COMMENDING the activities of SAVE (Saving Asia's Vultures from Extinction) and its members for their notable contributions to vulture conservation in the region;

RECOGNIZING the need to intensify and significantly expand the aforesaid efforts in order to ensure the recovery of South Asia's wild vulture populations;

ALSO RECOGNIZING that there is an important need for enhanced regional collaboration, information sharing, exchange of experiences and lesions learned on conservation of vultures in South Asia;

We, the participants at the symposium on Developing a Regional Response to the Conservation of South Asia's Critically Endangered Vulture Species, held in Delhi from 3-4 May 2012, hereby agree to:

1) **STRENGTHEN regional cooperation, by:**
- Establishing a South Asian Regional Steering Committee for Vulture Conservation;
- Taking active steps to enhance information sharing and exchange of experience among all vulture range countries, in all aspects of *in-situ* and *ex-situ* vulture conservation in South Asia.

2) **STRENGTHEN vulture conservation breeding and reintroduction programmes, by:**
- Ensuring rapid dissemination of information relating to successful techniques and approaches amongst all centres in the region;
- Seeking to maintain and increase the level of financial and technical support for conservation breeding received from Governments, international organizations and donors, so as to deliver the objectives for the annual production of captive-bred young;
- Planning and implementing the necessary measures required at release sites.

3) **CREATE AND MAINTAIN a non-toxic environment for vultures, by:**
- Removing diclofenac and other toxic NSAIDs completely from the vulture food chain, through measures including enhanced enforcement of the ban on veterinary use of diclofenac and eliminating its "leakage" from human use by urgent measure and legislation as appropriate against multi-dose vials of human diclofenac;
- Identifying and preventing the veterinary use of other non-steroidal anti-inflammatory drugs with similar toxicity to vultures as diclofenac, such as ketoprofen and aceclofenac (a pro-drug of diclofenac);
- Continuing efforts to identify, promote and adopt safe alternatives to diclofenac, such as meloxicam;
- Monitoring and assessing the impacts and effects of other livestock drugs on vultures, leading to active steps for preventing use of the drugs that have negative impacts on vultures;
- Fully enforcing the legal ban on the manufacture of veterinary formulations, retail sale and use for veterinary purposes of diclofenac.

4) **STRENGTHEN *in-situ* conservation measures, by:**
- Increasing the number, size and effectiveness of national "vulture safe zones" within which special efforts are made to remove all toxic veterinary drugs from the food chain of vultures;
- Cooperating to create trans-boundary vulture safe zones, knowing that political borders do not stop vultures from crossing international borders while searching for food;
- Enhancing the protection and management of vulture habitats and vulture roosting and nesting sites.

5) **CONTINUE AND EXPAND strategically-designed awareness and advocacy campaigns, aimed at building support for vulture conservation amongst all stakeholders at local, national, regional and international levels.**

6) **STRENGTHEN monitoring and research, by:**
- Continuing and expanding efforts to monitor vulture populations and breeding success on a regular and repeatable basis using road transect surveys and nest monitoring;
- Continuing and expanding efforts to monitor and quantify diclofenac and other toxic drugs in cattle[1] carcasses;
- Determining the safely and toxicity of veterinary NSAIDs, if necessary by experiments on captive vultures;
- Promoting studies on all possible causes of decline of wild vulture populations;
- Promoting studies on vulture behaviour and ecology.

7) **CONTINUE to develop and foster active partnerships amongst Governments, research institutions, civil society, private sector and international organizations to further accelerate vulture conservation in the region**

[1] refers to all domesticated ungulates