

# Report from the 2nd meeting of Saving Asia's Vultures from Extinction (SAVE)



**Norling Resort, Kathmandu 5-6 November 2012**



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# 1. Summary of updated recommendations

## 1. Preventing injectable human diclofenac being produced in vials or ampoules larger than 3ml:

- through Government legislation (India to lead, but in all four countries)
- through responsible pharmaceutical industry response
- through combined pressure from conservation and veterinary circles

*There is clear evidence that human diclofenac is being illegally used on a large scale by veterinary practitioners. Making diclofenac for human use available only in small vials (appropriate for human use) should significantly reduce this misuse.*

## 2. Establishing vulture safety-testing protocol and for all veterinary painkillers (NSAIDs) and embedding this within the Government system such that unsafe drugs are not permitted or available.

- protocols established, facilities designed, & birds available
- mechanism agreed that will mean that any unsafe drugs (such as ketoprofen and aceclofenac already known to be unsafe but in use) are not licensed and indeed banned from veterinary use

*There are worrying increases reported this year in veterinary ketoprofen (already proven to be unsafe) and other untested veterinary drugs in all countries and no apparent moves to prevent this except in Nepal where a partial ban is in place.*

## 3. Provide full support and information to the newly created 'Regional Steering Committee' and facilitate the lead from this important initiative in achieving the priority actions committed to in the Regional Agreement at Government and wider levels.

**Where possible look for ways to coordinate with meetings etc.**

## 4. Establishing a network of 'Provisional Vulture Safe Zones' across South Asia is key to saving Gyps vultures, with the goal to confirm their diclofenac-free status as 'Vulture Safe Zones' and engage a wider partnership of Government and NGO involvement in creating these.

## 5. The breeding and release programme is inextricably linked with the creation of effective Vulture Safe Zones – with soft-releases planned not earlier than in 2-3 years time, and subject to stringent criteria being satisfied regarding diclofenac levels within 100 km radius.

## 6. Gaining the necessary support and funding for the above priorities needs more emphasis from within South Asia as well as internationally in order to ensure the overall objectives.

## 2. Programme and attendees

### 4<sup>th</sup> Nov 2012

Arrival of participants and Dinner

### 5<sup>th</sup> Nov

09.00 Chairman's welcome followed by formal opening of the meeting by Mr Megh Pandey, Director General of National Parks and Wildlife Conservation, Nepal and welcome from incoming Chief Executive Officer of Bird Conservation Nepal, Sushila Nepali.

09.00 - 15.00 SAVE TAC and FACC Review Meetings (in parallel session)

15.30 - 18.00 Full forum discussion of Vulture Safe Zone development and summaries of points arising from TAC & FACC by respective chairs

15.00 – 18.00 Review of Vulture Safe Zones development

### 6<sup>th</sup> Nov

08.30 – 11.00 Review of drugs safety-testing for vultures and additional topics arising from TAC and FACC sessions to SAVE full forum

11.00-12.00 Adoption of review points by SAVE (including development of Advocacy strategy)

13.30 Update on Regional Steering Group & GEF. Relationship with SAVE

14.00 Fundraising review

14.30 Final review of TAC and FACC discussion points in open forum followed by formal closure of the meeting by the chairman

16.00 Closed SAVE Board meeting

19.00 Reception & Dinner with invited guests

### Participants:

Ian Newton (SAVE); Megh Pandey (DNPWC), Jemima Parry-Jones (ICBP), Juddha Gurung (NTNC), Sushila Nepali (BCN), Ishana Thapa (BCN), Chris Bowden (RSPB); Richard Cuthbert (RSPB), Rhys Green (UC&RSPB), Vibhu Prakash (BNHS), Mohini Saini (IVRI), Anil Sharma (IVRI), Toby Galligan (RSPB), Sachin Ranade (BNHS), Ram Jakati (SAVE FACC), Uzma Khan (WWFPak), Monirul Khan (TUBan), Maheshwor Dhakal (DNPWC), Devendra Swarup (SAVE FACC), Ganga Jung Thapa (NTNC), BC Choudhury (SAVE FACC), Soumya Sundar Chakraborty (BNHS), Sagar Paudel (BCN), Khadananda Paudel (BCN), Percy Avari, Chiran Pokheral, Sarita Jnawali (NTNC), Yam Malla (IUCNNep), JB Karki (DNPWC).

**Apologies/unable to attend:** Andrew Routh, Nick Lindsay, Mark Taggart, Anand Chaudhary, Bed Khadka, Yadvendradev Jhala, Chris Parish, Campbell Murn, Homi Khusrokhhan, Michael Krause, Asad Rahmani, Tim Stowe, Simon Mahood, Ananya Mukherjee, PR Sinha, A Bonal, Naresh Subedi,

### 3. SAVE Membership, website and updates

#### Full list of membership of SAVE

**Chairman** – Prof Ian Newton

**Board – Core members** of BNHS, BCN, NTNC, ICBP, RSPB have nominated:

Asad Rahmani, Sushila Nepali, Juddha Gurung, Jemima Parry-Jones and Tim Stowe respectively.

**Project Members** – Zoological Society of London, Hawk Conservancy Trust, WWF Pakistan, Wildlife Conservation Society, The Peregrine Fund.

**Programme Manager** – Chris Bowden

**Technical Advisory Committee (TAC)** - Richard Cuthbert (Chair)

Vibhu Prakash, Rhys Green, Anand Chaudhary, Andrew Routh, Campbell Murn, Chris Parish, Mohini Saini, Naresh Subedi, Mark Taggart, Jemima Parry-Jones, Monirul Khan, Khadananda Paudel.

**Fundraising, Advocacy and Communications Committee (FACC)** - Ram Jakati (Chair)

Homi Khusrokhhan, Asad Rahmani, Devendra Swarup, BC Choudhury, Uzma Khan, Nick Lindsay, Michael Krause, Yadvendradev Jhala, Anil Sharma, Chris Bowden.

**Supporting Members** – none yet formalised

**Government Members** – none yet formalised, one in process

**Associate Members** – new category to be established

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**SAVE Website** – [www.save-vultures.org](http://www.save-vultures.org) was launched 16 November 2011

The site has been developed substantially since the launch with assistance of a volunteer at RSPB (and we are very grateful to Mr Nigel Bush for his ongoing help!).

**Who looks at SAVE website?** The numbers of visitors have increased during the year, from an initial 120/month to 550/month (a marked increase since April 2012, but continued increase thereafter). Initially, most visitors were from UK, India and USA, but this quickly changed to being led by India, followed by UK, Nepal, USA and Pakistan by the end of the year.

Funds raised from the SAVE donate button 15 Nov 2011 – 1 Nov 2012 = £2,650 (GBPounds)

SAVE Board email account: [board@save-vultures.org](mailto:board@save-vultures.org)

SAVE Contact email account: [contact@save-vultures.org](mailto:contact@save-vultures.org)

## 4. Chairman's opening remarks and 2012 overview

*Professor Ian Newton first welcomed everyone to second meeting of SAVE and thanked our Nepalese hosts. Noting this as the first SAVE meeting with all four vulture-range countries represented, including Monirul Khan from Bangladesh and Uzma Khan from Pakistan.*

This has been a year of considerable achievement and progress for SAVE. In May, government representatives of the four vulture-range countries and SAVE representatives met in Delhi to draft a regional agreement and declaration on vulture conservation. This was particularly important because governments and conservation NGOs have now declared their common objectives, not just in general terms but in several specific details of what needs to be achieved. This co-operation between governments and SAVE continued at the Convention on Biological Diversity Conference of Parties at Hyderabad in October, where there were multiple events on vulture conservation and planning of a possible bid for funding from GEF, which IUCN is co-ordinating.

We saw the first evidence that vulture declines have slower or even stopped from surveys conducted by SAVE partners in Pakistan (just published in Bird Conservation International) and also in India and Nepal (to be published in PLoS One on Wednesday). These encouraging signs involve all three of the critically endangered species.

There were successes in conservation breeding and management. It is striking that in all the countries the vulture conservation breeding centres are performing well in keeping their vultures alive and healthy - mortality rates continue to be encouragingly low. In Nepal a second colony aviary was built. In Pakistan the captive group of OWBV has been expanded to 19 birds. In India, the Indian government made its first substantial financial contribution to conservation breeding. Breeding at the BNHS Vulture Conservation Breeding centres was better than ever. Twenty-six juveniles were fledged, including all three species. All three BNHS centres bred vultures (the Assam centre for the first time) and the Junagadh Zoo in Gujarat also fledged two OWBV - the first success outside the BNHS network in India. That makes a total of 62 young vultures produced since the programme began. This success highlights the need to restore suitable conditions for vultures in the wild - we need to move rapidly towards re-introductions.

Vulture Safe Zones (VSZs) continued to expand in Nepal, where they were first developed. Work continues on the development of several VSZs in India. Pakistan is establishing their first VSZ in Sind Province.

During the discussions in Delhi in May, a talk by BC Choudhury on the ecosystem services formerly provided by vultures made everyone aware of the need to expand the connections between SAVE and government agencies, including the health ministry. Towards this end, Dr Jakati has been establishing and strengthening high-level contacts with the health ministry and the drug controller's department. Important challenges remain in getting NSAIDs toxic to

vultures banned from veterinary use and in removing human diclofenac – especially the large 30 ml vials. There was some progress on the latter in May when the large drug company Intas announced that it would cease production of 30 ml vials but this will only be effective once all companies do so. However, the toxic drug ketoprofen continues in legal use in India, though Nepal does not permit veterinary use, and aceclofenac- a pro-drug of diclofenac- has not yet been banned.

Work continued with our partners at IVRI both in the monitoring of NSAIDs and in testing their safety to vultures. Research led by IVRI discovered that diclofenac is associated with visceral gout, kidney damage and death in the cinereous vulture and the steppe eagle. This is the first evidence that diclofenac harms species other than Gyps vultures. IVRI also led continuing efforts to obtain government funding for safety testing on vultures of several NSAIDs in veterinary use whose effect on vultures is uncertain. We hope that this will go ahead, based at Pinjore, in the coming year.

Despite all this evidence of progress, much remains to be done in the coming year. We have yet to make real progress in establishing a mechanism by which NSAIDs with harmful effects on vultures are banned and to ensure safety testing of all NSAIDs before their veterinary use is approved. This is essential- otherwise our good work will all be undone by another compound with similar devastating effects to those of diclofenac. Further support, if possible from government partners, is also required for the ongoing costs and maintenance of vulture conservation breeding centres to ensure their long-term viability.

I now warmly welcome Mr Megh Pandey, Director General of National Parks and Wildlife Conservation, Nepal to deliver his address and looking forward to a very productive meeting to elaborate the next steps in the process of conserving the vultures.

Professor Ian Newton, SAVE Chairman, 5 November 2012



## **5. Sub-committee updates and agreed action points**

### **a. Technical Advisory Committee (TAC)**

*The following topics were discussed and agreed upon by the SAVE Technical Advisory Committee and other involved participants of the vulture programmes in India, Nepal, Pakistan and Bangladesh, at the Second Annual SAVE meeting in Kathmandu, 4-6 November 2012.*

#### **Progress with technologies:**

##### **Dipsticks, ELISA, LCMS testing in Asia, LCMS testing in the UK.**

- Further testing (in November/December 2012) will determine the reliability and accuracy of dipsticks, however even if they prove to be accurate they are more of a lab based technique than is desirable and will not allow large-scale testing of carcass samples in the field.
- Given the range of NSAIDs toxic to vultures (diclofenac, ketoprofen and potentially other molecules) the emphasis for analytical methods should be the “gold standard” LCMS approach that can most accurately quantify and detect 10+ NSAIDs.
- Developing a reliable LCMS methodology in Asia is still desirable and we will work with laboratories in the region to see if a multiple NSAID LCMS method can be found.
- Concerns for the toxicity of nimesulide means that we need to evaluate residue levels of this compound in cattle liver and kidney tissues.
- Training organisations and partners in Pakistan and Bangladesh on carcass sampling methods will be desirable in order to obtain baseline data from these countries.

##### **Progress with vulture conservation breeding centres**

- Recording of data in the centres is better placed than last year, particularly for the Nepal centre, where time spent by Thalita Calvi assisted updating existing databases.
- Nepal has completed a second colony aviary and perching, nesting ledges, placement of nesting branches, feeding and movement of birds into aviaries is now in place to maximise prospects for successful breeding in 2012/13.
- Incubation training course delivered in September in Nepal for staff from Indian, Pakistan and Nepalese centres, but plans for incubating eggs should take place after 1-2 years of natural breeding attempts. Using incubators in Nepal will depend on a reliable electricity supply (not simple!)

##### **Veterinary support for the centres and how can this be made sustainable and long-term.**

- Support for the project from international vets is better placed than a year ago with up to 3-4 UK vets placed for regular visits and if required for emergency visits to assist the breeding centres.
- Good national vets (in India, Pakistan and Nepal) are in place at the centres and training of biologists for routine veterinary work (health checks, taking blood etc) has helped increase capacity for undertaking work.
- Continued training of vets, such as for health checks of birds, is required to maintain

skills and knowledge, and combining this training with between centre visits is useful.

### **Reducing the costs of feeding birds in the breeding centres and making this more reliable.**

- Reducing costs is probably wishful thinking, but making the food supply more reliable is essential.
- Putting out contracts for tenders (to supply goats or buffalo) could be one way for making the prices more competitive. Also consider working more closely with local communities for supplying buffalo and goats, with goat breeds that produce twins obviously desirable in terms of numbers.
- Consider rearing of pigs as an alternative food source (widely used in South Africa for feeding captive vultures) which could be cheaper and reared by local farmers. However we still recognise a need for a mixed diet.
- We will be trialling small scale rabbit breeding as a food supply at the Pinjore in 2012/13 as a supplementary food source for the centre. This option should be explored in Nepal and consider finding local contractors for this work. Pakistan has previously utilised guinea pigs for feeding at centre however there are relatively high mortality rates and Pakistan is also thinking of trialling rabbit farming.
- Regardless of source of food, keeping all livestock for 10 days prior to slaughtering to ensure absence of diclofenac (and other NSAIDs) remains essential for vulture food sources.
- In connection with this determining residue times for other NSAIDs (e.g. ketoprofen/nimesulide) is important in order to ensure that these are completely eliminated within the 10 day holding period.

### **Training for keepers, vets, field biologists, advocacy officers, local NGOs and VSZ staff.**

- Increasing capacity of staff for work at the breeding centres has proceeded well with training of vets and biologists undertaken over last year.
- Further training required with individual training requirements identified for each country. These include:
  - Nepal: training in post-mortem analysis of vultures, data-storage, analysis and report/paper writing (initial training in November 2012), training for keepers (updated in September 2012),
  - Pakistan: advocacy training for VSZ work, collection of cattle carcass samples, veterinary health checks/treatment (in collaboration with Hawk Conservancy), sexing of birds in centre,
  - Bangladesh: collection of cattle carcass samples,
  - India: standardisation collection of data on colony monitoring within VSZ sites, training on data-management, analysis and writing (provided in November 2012).
- Continued training visits between partners is desirable which has proceeded well for the breeding centres and in VSZ visits.

### **Thoughts and plans for future vulture releases.**

- Identified the need for technical research and development for monitoring of releases, including most critically tracking tagged birds and ability to quickly find and recover any mortalities. This will be put in place during planned and future tracking of wild birds in the region (e.g. red-headed vultures and possibly long-billed vultures in

India/Pakistan).

- Releases are dependent on their being F2 generation birds bred in captivity – this is likely in the near future for captive birds in the Pinjore centre (hopefully in the 2012/13 or 2013/14 breeding seasons).

### **Measuring the cost and impact of the loss of vultures.**

- Collecting data on the economic costs of the loss of vultures is recognised to be very difficult. But we will seek information on disposal costs of carcasses, dog numbers and rabies control programmes.
- Will analyse existing data on dog numbers at carcass dumps and from road transects in India.
- Planning to undertake research on the disease risk from the loss of vultures by identifying what pathogens are present on decomposing carcasses (by culturing), and can test prevalence of pathogens in soil from large carcass dumps versus feeding sites within vulture safe zones.
- Repeat socio-economic studies within Bharatpur District, Rajasthan, India, following similar methods to an earlier study undertaken by BNHS.

### **Progress on safety testing further NSAIDs to Gyps vultures.**

- MoEF in India have requested IVRI submit a proposal and detailed protocol on safety testing in collaboration with BNHS. This includes in vivo testing in birds and in vitro testing using an immortalised vulture kidney cell line. Waiting to hear from MoEF and when funds received then construction of small aviaries, capture of birds (Himalayan Griffon) and trials will proceed.
- Initial NSAIDs to be testing are paracetamol, analgin, nimesulide and ibuprofen.
- Testing of ketoprofen and aceclofenac will not be undertaken as it is recognised that these are already toxic (ketoprofen) or likely toxic (aceclofenac) for vultures. Banning of these compounds still required.
- Deliberate poisoning events targeted at predators (e.g. leopards) are recognised as a source of additional mortality of vultures, however tackling this issue is extremely difficult and a wider-scale problem for all wildlife.
- Recognise that our priority for this should be to accurately quantify the extent of its occurrence in order to evaluate the likely threat to current and future vulture populations.

### **Ethics committee**

- The group have decided to establish a project ethical review committee for any research work involving experimental testing in cases where ethical reviews are not already covered by partner organisation (e.g. IVRI has an ethics committee which will review NSAID safety testing proposal within India). Other projects will be independently reviewed by the ICBP ethics committee.

### **External research requests for captive birds**

- Requests for undertaking research on birds within the breeding centres should be reviewed to decide their desirability. In India the governing councils of each centre

should take this role. In Nepal a 3 person committee (BCN, NTNC and DNPWC) should receive all proposals and if required seek technical guidance from SAVE TAC and Board.

### **Numbers for release**

- We will re-model the likely number of birds to be released from the breeding centres so that this can be realistically planned. Currently release numbers are based on estimates from 2004 when it was thought that far more birds could be captured for the centres.

### **Key Actions Points (and suggested persons for follow up)**

#### **Progress with technologies: dipsticks, ELISA, LCMS testing in Asia, LCMS testing in the UK.**

- Validating accuracy and reliability of dipsticks – **Toby Galligan, Rohan Shringarpure**
- Pursue developing LCMS method in India – **Richard Cuthbert, Mark Taggart**
- Evaluating residue levels of nimesulide in livestock – **Richard Cuthbert**
- Carcass sampling and training for Pakistan & Bangladesh – **Uzma Khan, Monirul Khan, Toby Galligan**

#### **Progress with vulture conservation breeding centres**

- Databases for vultures in Nepal breeding centre – **Khadananda Paudel, Chris Bowden**

#### **Veterinary support for the centres and how can this be made sustainable and long-term.**

- Deciding on veterinary training requirements and delivering this – **Vibhu Prakash, Uzma Khan, Khadananda Paudel, Andrew Routh, Jemima Parry-Jones**

#### **Reducing the costs of feeding birds in the breeding centres and making this more reliable.**

- Evaluate costing of contracting for goats and buffalo meat supply for centres – **NTNC (Nepal), Vibhu Prakash**
- Evaluate potential for buying/rearing pigs for centres – **NTNC (Nepal), Vibhu Prakash, Uzma Khan/Campbell Murn**
- Trial rabbit breeding at Pinjore – **Vibhu Prakash**
- Evaluate residue times for other NSAIDs – **Richard Cuthbert**

#### **Training for keepers, vets, field biologists, advocacy officers, local NGOs and VSZ staff.**

- Detailing training requirements, staff to receive training and preferable timing of training for India, Nepal, Pakistan and Bangladesh – **Vibhu Prakash, Khadananda Paudel, Uzma Khan, Monirul Khan**

#### **Thoughts and plans for future vulture releases.**

- Technical research, development and training for tracking birds and rapidly finding dead birds – **Toby Galligan, Rhys Green, Jemima Parry-Jones, Chris Parish**

#### **Measuring the cost and impact of the loss of vultures.**

- Developing research plans for assessing disease risk and pathogen prevalence at carcass dumps – **Vibhu Prakash, Rohan Shringarpure**
- Analysing dog numbers in India – **Vibhu Prakash, Richard Cuthbert**
- Repeating socio-economic studies around Bharatpur, Rajasthan – **Vibhu Prakash, Richard Cuthbert**

#### **Progress on safety testing further NSAIDs to Gyps vultures.**

- Assess means to quantify vulture mortalities from deliberate poisoning events – **Khadananda Paudel, Vibhu Prakash, Richard Cuthbert, Rhys Green**
- Taking forward NSAID safety testing in India – **Mohini Saini, Vibhu Prakash**
- Establishing an immortalised vulture kidney cell line – **Mohini Saini**

#### **Ethics committee**

- Setting up ICBP ethics committee to oversee SAVE work (when not already covered) – **Jemima Parry-Jones**

#### **External research requests for captive birds**

- Form 3 person committee for Nepal (BCN, NTNC, DNPWC) for reviewing requests – **Khadananda Paudel**

#### **Numbers for release**

- Modelling numbers of vultures for breeding and release from the captive centres – **Richard Cuthbert, Rhys Green, Vibhu Prakash**

Minutes prepared and circulated 30 November 2012 by Richard Cuthbert  
(email [richard\\_cuthbert@yahoo.co.uk](mailto:richard_cuthbert@yahoo.co.uk) for any further details or clarification).

## 5. Sub-committee updates and agreed action points

### b. Fundraising, Advocacy & Communications Committee (FACC)

**FACC Attendees:** Ram Jakati, Chris Bowden, Dr. Swarup, BC Choudhury, Ganga Thapa, Sushila Nepali

**Additional Observers:** Maheshwar Dhakal, Sarita Jnawali, Megh Pandey, (Ananya Mukherjee via Skype), Ishana Thapa, Yam Malla, Sagar Paudel, Monirul Khan, (+Uzma Khan in summary session)

**FACC Apologies:** Y Jhala, N Lindsay, M Krause, A Rahmani.

- Elaborating the draft advocacy strategy (see below) with allocated tasks agreed as high priority and is planned follow-up for FACC during 2013.
- The following discussion points will feed in to the advocacy strategy – although they focus mainly on India, they need expanding for other range countries within the strategy.
- **Regional Steering Committee** – SAVE should maintain good communications mainly through IUCN, to fully mobilise its potentially very powerful membership to highlight the stated objectives in the **Regional Agreement** and proactively pursue the priority actions required.
- Reducing diclofenac in the environment remains the over-riding priority– and acknowledging that a major source of diclofenac is the **large vials of human diclofenac** which are being illegally used, – actions agreed from last meeting to get large human diclofenac vials banned are top priority and the key channels outlined below:

#### **Government level approach:**

- **Central Govt** (India): BNHS & engage newly created Regional Steering Committee
  - Recent contact with Indian Health Secretary (BNHS/FACC delegation) showing hopeful signs - to follow-up – and reach Drug Controller Gen India via Secretary.
  - Continued engagement/efforts with MoEF
  - Include a branded 'safety-mark' for vulture-safe drugs in the discussions
- **Regional/state Govt** [state Drug Controllers met so far: Punjab, Haryana, Himachal Pradesh, UP, Uttarakhand, Rajasthan and Gujarat, but needs multiple follow-up along with other relevant senior officials and using full FACC support]
- **Veterinary services** and institutions – a programme of visits linked to VSZ work wherever appropriate to be developed within the strategy and engaging key FACC members (notably DS and AS) in the process
- 

#### **Pharmaceutical Industry approach:**

- Letters are drafted for sending out to all companies alerting them to the issue and highlighting responsible companies pre-emptive withdrawal of the large vials

- Inviting others to take up this cause
- Further letters needed to meloxicam producers to request reduction in market pricing of meloxicam products
- Presentation is available for contact meetings with OPPI & IDMA + IPA (South Asia/India Pharma umbrella bodies) – need to program these meetings
- Take up offers to use pharma industry channels of communication eg Intas offer to supply materials through their outreach programmes

#### **Pharmacies and other locally focused approach:**

- Ongoing need for VSZ-level monitoring work (questionnaires, pharmacy surveys etc & workshops) to find out situation in the field and also to engage local/regional NGO involvement.

#### **Additional points:**

- The human diclofenac labelling (not for veterinary use) needs fully enforcing and non-compliance needs highlighting and action prompting from the authorities. More attention is needed on this last point
- Vet practitioners need fully informing and convincing – involving and engaging veterinary associations etc.
- Fully utilise the new Wildlife Protection Amendment Act 2011 which should strengthen options to enforce these measures. Options for prosecuting pharmacists need full investigation.
- Reducing the price of meloxicam (to increase uptake) is a priority and one that SAVE can at least make direct approaches to request the industry directly.
- Greater involvement of legal advisors thought to be something that SAVE should consider and take up. Having penalties for contravention of current measures clearly laid out and publicised will be helpful.
- Mobilising **safety-testing of other NSAIDs** on the market and poised to enter market Considering facilities and history to date, the safety-testing should proceed as quickly as possible in India (although it could equally in principle be carried out in any of the four range countries)
- Mechanism to ensure this results in non-licensing of vulture-unsafe NSAIDs is not sufficiently clear, but dependent on the hopes for the IVRI proposal and involvement in India which is the key option. Full support is needed by SAVE partners and beyond to facilitate this process.

#### **General points:**

- Priority for using tagged birds with associated online publicity to highlight any birds that die due to diclofenac as powerful advocacy tool – but note this does require quick response to find and test corpse of any tagged bird that dies. This should be feasible and is considered worth putting effort in for this.

- Endorsement of VSZ approach as a key component to complement the high level advocacy, and noting the important opportunities that should be pursued for a trans-boundary approach
- Highlighting contraventions to existing legislation requires prosecutions and strong publicity. Revisiting undercover journalism approach as well as rigorous follow-up mechanisms.
- The need to update national vulture action plans for India and Nepal is urgent along with the creation of Action Plans in Pakistan and Bangladesh.
- Funds for vulture work have been allocated by eg Nepalese Government (and this is undoubtedly the case in all 4 countries) but more efforts are required to make the best use and mobilisation of such. Greater involvement of Government staff in SAVE meetings to be encouraged to facilitate this.

### **Fundraising**

- Funding proposals involving trans-boundary components – agreed that SAVE partners should be encouraged to consult one another prior to submission of proposals, at least between the countries concerned.
- For all the above actions, a need to coordinate and engage fully the newly created RSC. Also noted that an approach to SAARC is appropriate for additional (mainly political) support and immediate follow-up was planned during the meeting.

## 5c Draft Advocacy strategy

### **An advocacy strategy (note this is draft in progress) for SAVE partners to support the conservation and recovery of Gyps vultures in South Asia.**

#### **Background**

Vultures used to occur in huge numbers throughout the Indian subcontinent. As recently as 1990, the total number of oriental white-backed vultures, long-billed vultures and slender-billed vultures in India and Nepal was about 40 million. Now, the total vulture population is probably below 10,000 – an astonishing drop of 99.9% in just 20 years. All three species are listed as critically endangered.

Intensive research has identified the cause of this decline as the use of diclofenac, an anti-inflammatory drug used to treat livestock. It is highly poisonous to vultures, who die if they feed on an animal that has died within a few days of being treated.

Responding to this decline, conservation NGOs, especially BNHS, and now as the SAVE partnership have:

- Persuaded the Governments of India, Nepal, Pakistan and Bangladesh to ban the veterinary use of diclofenac;
- Established conservation breeding centres – now holding and successfully rearing vultures of all three species;
- Identified a safe and effective alternative drug (meloxicam); and
- Developed and begun to implement the concept of ‘vulture safe zones’.

More information on this work is available at [www.save-vultures.org](http://www.save-vultures.org). The work of the NGOs, who form part of the SAVE partnership, has also won the support of National and State Governments who are also committed to vulture recovery and have contributed funds to a some of the projects above. Moreover, the four Governments of South Asia have now agreed a “regional declaration” (see annex) and are co-ordinating work on this issue via a joint Regional Steering Group Committee.

Despite all this progress, however, there is much more to do – if we are to secure the full recovery of these iconic species. Much of this will require that Governments (national and state) as well as other official bodies and decision-makers play their part. To ensure that this happens, the SAVE partners will continue to press Governments and others to live up to their responsibilities. This strategy has been developed to better co-ordinate our advocacy work, and make it as effective as possible.

#### **What is “advocacy”?**

Advocacy, for the purposes of this strategy, is the process of compiling and communicating information to decision-makers, in a form that is suitable and compelling to that decision-maker. This is carried out so as to persuade that decision-maker to do something (e.g. change policy, adopt a different approach) that, in the absence of the advocacy, they may not have done.

In this case, decision-makers will be those responsible, in national or state governments or their agencies, for the legal and policy decisions needed to support vulture recovery – as well as those who indirectly influence these decisions.

#### **An advocacy strategy**

This is a means to plan or co-ordinate advocacy work. It is a means to define precisely our advocacy objectives, and devise the means to achieve them (get from A to B). A strategy thus helps ensure ‘focus’, while also being able to have several themes, these can be inter-related and better co-ordinated. It also

needs to be time-bound, have clear targets and a means of measuring success. Finally, a strategy should be agreed and 'owned' by all the potential participants.

Thus, a strategy provides a means to build on existing advocacy successes and current efforts, but to make forthcoming efforts "greater than the sum of their parts" and, therefore, more efficient/effective.

### **Objectives**

Advocacy objectives for vulture recovery fall into three themes:

1. The ban
  - (a) To ensure that diclofenac remains banned for veterinary use; and
  - (b) To ensure the introduction of vulture-safety testing of other NSAIDs, and of a procedure to ban other unsafe drugs.
2. Implementing the ban
  - (a) To ensure the effective implementation of the diclofenac ban and, if necessary, of other unsafe drugs; and
  - (b) To prevent 'leakage' of human diclofenac into veterinary use.
3. Vulture safe zones
  - (a) To establish and win recognition for a network of vulture safe zones; and
  - (b) To ensure robust monitoring of VSZs to demonstrate their safety for vultures and permit release/re-introductions, as and when appropriate.

These objectives may be secured via bilateral contacts with the primary decision makers, or through engagement with multilateral processes such as the Regional Steering Committee.

In the pages that follow, each of these objectives – and the advocacy needed to achieve them – is set out in more detail. This includes identifying the primary decision-makers, the indirect influencers, the processes and tools needed to progress. This will be completed with a plan for who will lead each engagement. These are the aspects of the strategy that require further input, discussion and agreement.

### **Primary decision-makers**

For our objectives, the primary decision maker will often be a senior official of the appropriate national or state government. In some cases, the appropriate Minister, Secretary or Commissioner may be our primary decision-maker.

### **Indirect influencers**

These include, but vary according to objective/issue:

- Ministers
- Other parliamentarians
- Senior officials across other departments – MOEF, Health, Agriculture, etc.
- Government agencies – WII, IVRI, CZA etc.
- Pharmaceutical industry – individual companies, business associations, etc, covering manufacturers, distributors and retailers.
- Vets – individually and their associations
- Farmers – individually and their associations
- Vet Colleges and advisors
- Media – both news and specialist
- Influential, "connected" individuals and religious groups.

In all cases, the strategy should encourage use of the “multiplier effect” – that is, try not to communicate e.g. with every farmer, but communicate with a agency/process that can is manageable but that “multiply” our message to every farmer.

### **Advocacy “toolkit”**

This includes, but varies according to objective/issue:

- 1:1 meetings
- Events – receptions, side-events, talks, etc
- Exhibitions/displays
- PQs/letters to MPs
- ‘Village Parliaments’, village elders, etc
- Website, social media
- Skits, dramas, films
- Paid advertising
- Celebrities – cricket, Bollywood?
- Public Interest Litigation

With:

- Leaflets, documents, briefings
- Powerpoints, films
- FAQs and addressing counter-arguments
- Economic and social arguments

We could (should?) press for a Government-led information campaign.

### **Objective 1(a)**

To ensure that diclofenac remains banned for veterinary use.

(Note: this objective is, to some extent, ‘academic’ as it has been achieved, but is included for completeness and in case of any efforts, by others, to reverse the decision).

#### **Primary decision-maker:**

- Drug Controller General of India
- ? Nep
- ? Pak
- ? Ban

#### **Indirect influencers:**

- Minister for Health
- Other Ministries (ie Chemicals and Fertilizers, Agriculture, etc)
- Other senior officials
- Parliamentarians
- Media
- Pharmaceutical industry – individual companies, business associations

### **Objective 1(b)**

To ensure the introduction of vulture-safety testing of other NSAIDs, and of a procedure to ban other unsafe drugs.

This means that the Ministry of Health and/or the Drug Controller system instigates a system by which the safety to vultures of NSAIDs is tested before they can be licensed/allowed for veterinary use. It will also need the introduction of a system to replicate the diclofenac ban for any other drugs found to be unsafe.

This objective might also include a sub-objective related to the promotion of 'safe' drugs, such as meloxicam, and efforts to understand and resolve any limitations (e.g. by formulation changes) so that safe alternatives become more favoured.

**Primary decision-makers:**

- Ministry of Health (India)
- Drug Controller General of India
- Director General, Department of Drug Administration, Nepal
- ? Pak
- ? Ban

**Indirect influencers:**

- Pharmaceutical companies and industry associations<sup>1</sup>

**Objective 2(a)**

To ensure the effective implementation of the diclofenac ban and the prevention of licensing of other vulture-unsafe drugs.

This objective means ensuring the ban is working – that is, that the “not for veterinary use” label is present, prominent and respected, and where any evidence to the contrary is available that action (including enforcement measures) is taken.

**Primary decision-makers:**

- State drug controllers
- Pharmaceutical companies
- Vets – and their associations

**Indirect influencers:**

[to add]

**Objective 2(b)**

To prevent 'leakage' of human diclofenac into veterinary use.

This objective means securing measures to prevent the misuse of human diclofenac in livestock. The primary sub-objective will be to secure a ban on manufacture and sale of the 30ml multi-dose vials; such a ban (or as an interim measure?) should include preventing retailers/wholesalers selling large injectables to hospitals/pharmacies.

However, this will also need to be complemented with other advisory and enforcement measures, including in particular consideration of making human diclofenac available only on prescription and/or the issue of preventing over the counter sale without receipts.

**Primary decision-makers:**

- Ministry of Health/Drug Controller General of India
- Director General, Department of Drug Administration, Nepal
- ?Pak
- ?Ban

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<sup>1</sup> Although it should be noted, with interest, that these bodies in India are currently pre-occupied with issues of labelling and pricing in relation to trade name/chemical formulation

**Indirect influencers:**

**Objective 3(a)**

To establish and win recognition for a network of vulture safe zones.

This objective means securing an understanding of the needs for a network of VSZs, as well as their identification by relevant national and state authorities. In particular, it is important that these zones are recognised formally by the MoEF and State Forestry Departments, and that this includes ‘taking ownership’ of their existence and objectives.

**Primary decision-maker:**

- Gol Ministry of Environment and Forests, and State Departments
- .
- Department of Drug Administration, Nepal? Pak
- ? Ban

**Indirect influencers:**

- Local conservation partners.

**Objective 3(b)**

To ensure robust monitoring of VSZs to demonstrate their safety for vultures and permit release/re-introductions, as and when appropriate.

This objective means ensuring that the network of VSZs are well promoted, that work is carried out to ensure that such areas are “diclfenac-free” – by monitoring both pharmacies and carcasses, and that the relevant national and state authorities are committed to enforcing this status.

**Primary decision-maker:**

- National and state governments to provide funding support to SAVE partners to undertake work.

**Indirect influencers:**

- Local conservation partners, environmental NGOs.
- State and local government bodies able to provide support (or hinder progress!)

**Action Plan** (NB more actions to be added, and then fill in the lead and support person/organisation for each action)

- Note that some of these actions may apply only to India, but many for all 4 countries -

Objective	Outcome sought	Action	Lead	Support	When?
<b>1(a)</b>	Ban maintained	Monitor any lobbying for change			

<b>1(b)</b>	Safety-testing regime introduced	Proposal from IVRI to be expedited			
	Procedure of banning unsafe drugs introduced				
	Ketoprofen banned				
<b>2(a)</b>		Send in vials not labelled 'not for veterinary use' to DC (state)			
		Monitoring outcome			
<b>2(b)</b>	Ban on multi-dose vial	Follow-up meeting with Health Secretary	Letters from Dr Jakati & BNHS	Drafts from Vibhu/Chris	By end of year
		MOEF			
<b>3(a)</b>	VSZs declared	VSZ declared/sought in Gujarat			
		VSZ declared/sought in Uttar Pradesh			
		VSZ declared/sought in Uttarakhand			
		VSZ declared/sought in Jharkhand/			
		VSZ in Nepal			
		VSZ declared/sought in Assam			

		VSZ declared/sought (others)			
<b>3(b)</b>	Monitoring of pharmacies	Monitoring conducted by NGOs			
		Press Governments to fund and/or take over monitoring			
	Monitoring of carcasses	Monitoring conducted by NGOs			
		Press Governments to fund and/or take over monitoring			

[Note – we are grateful to Mr Lloyd Austin, head of Conservation Policy RSPB Scotland for assistance in developing this]

## 4. Country updates summary from partners

### 1 & 2. Vulture population surveys in India and Nepal

**Reporters:** Vibhu Prakash, Khadananda Paudel, Richard Cuthbert

A nationwide road-transect survey of vultures was undertaken in India during 2011, repeating previous road-transects from the early 1990s and from 2000 onwards which have formed the basis of our knowledge of the size and scale of the decline in resident *Gyps* vultures. Road transect surveys were also undertaken in lowland districts of Nepal in 2011 (and 2012) and build on previous lowland surveys which now total eight surveys from 2002 to 2012. The surveys results for Nepal from 2002 to 2011 were written up and published in the journal *Bird Conservation International* in 2012 and indicate the scale of the declines (91%) for white-backed vultures in Nepal over this period and the scarcity of other species of vultures in the country. The paper's title, authors and abstracts is copied below.

The 2011 surveys in India were completed and combined with results survey results from Nepal, and the results were analysed and written up for publication. The resulting paper is now in press with the journal *PLoS ONE*, and the paper's title, authors and abstract are below. We will aim to coordinate a press release in the UK, India and Nepal in order to publicise these results.

Ongoing annual surveys are being undertaken in Nepal and were completed in 2012 and will continue with support and funding from the RSPB. Nationwide surveys in India will be repeated in 3-4 years time in order to further assess the potential recovery of *Gyps* vultures in the region.

In press with PLoS ONE (published Nov 2012)

**Title: The rate of population decline of resident *Gyps* vultures in India and Nepal has slowed**

Vibhu Prakash, Mohan Chandra Biswakarma, Richard Cuthbert, Anand Chaudhary, Ruchi Dave, Mandar Kulkarni, Sashi Kumar, Sachin Ranade, Rohan Shringarpure, and Rhys E. Green

#### **Abstract**

Populations of Oriental White-backed Vulture *Gyps bengalensis*, Long-billed Vulture *Gyps indicus* and Slender-billed Vulture *Gyps tenuirostris* crashed during the mid 1990s throughout the Indian subcontinent. Previous road transect surveys in India, initially conducted in 1991-1993 and repeated in 2000, 2002, 2003 and 2007, revealed that the population of *Gyps bengalensis* had fallen by 2007 to 0.1% of its numbers in the early 1990s, with populations of *Gyps indicus* and *Gyps tenuirostris* combined having fallen to 3.2% of their earlier level. A further repeat survey was conducted from March to June 2011 and analysed to calculate recent population trends. Results from a similar road transect survey, conducted in seven years between 2002 – 2011 in western Nepal, indicate that the population of Oriental White-backed Vultures in 2009 had fallen to 25.4% of its 2002 level. However, numbers counted increased by 30.8% between 2009 and 2011.

The results indicate that populations of all three species of vulture remain at a very low level, but that the rate of decline has slowed and might even have reversed for *Gyps bengalensis*, both in India and Nepal. However, the rarity of vultures means that estimates of the most recent population trends are necessarily imprecise, so it is possible that slow declines may be continuing. The degree to which the decline rate of *Gyps bengalensis* in India has slowed is in accord with the effects on population trend expected from a reduction in the prevalence and concentration of the drug diclofenac in carcasses of domesticated ungulates since the ban on its veterinary use was introduced in 2006. The most recent available information indicates that the removal of diclofenac from the vultures' food supply is incomplete, so further efforts are required to fully implement the ban.

Published in Bird Conservation International (2012) 22:270–278, doi:10.1017/S0959270911000426

### **Population trends of critically endangered *Gyps* vultures in the lowlands of Nepal**

ANAND CHAUDHARY, TULSI RAM SUBEDI, J.B. GIRI, HEM SAGAR BARAL, ISHWORI CHAUDHARY, KHADANANDA PAUDEL and RICHARD J. CUTHBERT

#### **Summary**

Three species of resident *Gyps* vulture are threatened with extinction in South Asia due to the contamination of domestic ungulate carcasses with the drug diclofenac. Observed rates of population decrease are among the highest recorded for any bird species, leading to total declines in excess of 99.9% for the Oriental white-backed vulture (*Gyps bengalensis*) in India. Vultures have declined in Nepal, however quantitative information on the rate and scale of decreases is unavailable. Road transect surveys for vultures, following the same route, methodology and timing, were undertaken in lowland areas of Nepal in six years from 2002 to 2010. Transects followed Nepal's East-West highway and covered 1010 km across five regions (from the far east to far west of Nepal) in three surveys, and 638 km across three regions in the remaining three surveys. Slender-billed vultures (*Gyps tenuirostris*) were very scarce, with none recorded in 2010 and a maximum of five in 2002. White-backed vultures were most commonly recorded, but decreased from 205 to 66 birds over the survey period, with an estimated annual rate of decline of 15% a year. If population decreases commenced in Nepal in the same year as in India, then white-backed vultures in Nepal have declined by 91% since the mid 1990s. Few resident *Gyps* vultures remain in Eastern and Central regions of Nepal, with just one, nine and six birds recorded in the three surveys. The majority of threatened *Gyps* vultures in lowland Nepal are now found in Western and Mid Western regions, where conservation efforts have been focused in the last five years. Removing veterinary diclofenac from across the country and continuing managing effective "vulture safe zones" are essential to conserve Nepal's remaining vulture populations.

### **3. Vulture monitoring by The Peregrine Fund: 2011-2012 seasons**

**Reporter:** : Munir Virani

#### 2011 Results

The focus of our vulture work in India is in the central Indian states of Madhya Pradesh and Rajasthan where we have been observing vulture breeding activity consistently since 2002. Our aim is to evaluate whether or not the Indian government ban in 2006 on the manufacture and sale of veterinary diclofenac is effective. Numbers of occupied nests are measured every December and then subsequently revisited in March and April of the following year to record numbers of nests that have successfully fledged chicks. Our study areas in both states range from India's premier protected areas within Tiger Reserves, to non-protected areas comprising agricultural areas and historical monuments. Our survey sites in Madhya Pradesh are Bandhavgarh National Park and its environs, Gidh Pahari (Mountain of Vultures), the villages of Jukehi and Kymore, the sixteenth century town of Orchha, and Gwalior Fort. In Rajasthan, our survey sites include Ranthambhore National Park, the Chambal Bird Sanctuary in Kota, and the villages of Kaushaldhara, Nimli, and Bodal. Vulture surveys in India were conducted by Munir Virani with assistance

from Patrick Benson. In Pakistan, our vulture work is conducted by Jamshed Chaudhry in Nagar Parkar located in the south-eastern region of the country.

Over the last four breeding seasons, the mean number of occupied Long-billed Vulture (LBV) nests within protected and non-protected areas in India has remained fairly stable at 216 (range 201-241) and 169 (range 154-188), respectively. For comparable sites, rates of decline of LBV nests in protected areas have dropped significantly from 31% before the diclofenac ban to only 4% post-ban. In non-protected areas, the rate of decline in LBV nests has dropped from 35% (pre-diclofenac ban) to 14% (post-ban). Although it has only been four breeding seasons since veterinary diclofenac was banned, our results are somewhat encouraging and support recent research by our Indian partners who have shown a reduction in available diclofenac to vultures from their study of diclofenac residues in carcasses.

### 2012 Results

Based on our previous year's results that have shown stable trends over the last four field seasons in populations of Long-billed Vultures (LBV), breeding surveys in India were not conducted in 2011-12 season but will continue in 2012-13 season to evaluate conservation results. In south eastern Pakistan, Jamshed Chaudhry continued to collect data on populations and nest occupancy of LBV in Nagar Parkar district in the 2011-12 season. By comparing populations trends before (2003-06) and after the ban on veterinary diclofenac (2007-12), our data and models have shown that vulture abundance, nest occupancy and nest productivity declined by 61%, 73%, and 95%, respectively, in the 3 years before the diclofenac ban, and then increased one to two years after the ban by 55%, 52%, and 95% and have remained stable since then. Jamshed has also recorded stable trends in numbers of occupied nests of Oriental White-backed Vultures (OWBV) in the same area at between 30 and 36 nests over the last three breeding seasons. In Nepal a grant was provided to Krishna Bhusal to build on his surveys of occupied nests of OWBV and Himalayan Vultures (HV) in Arghakhanchi District. Over the three-year breeding period (2010-12), Krishna's data has shown that numbers of occupied nests of OWBV fluctuated between 15 and 21 nests while those of HV showed a gradual increase from 28 to 36 occupied nests. At Koshi Tappu National Reserve in Nepal, we funded Hem Sagar Baral and his team who recorded 42 nests of OWBV during the 2010/2011 breeding season. Although our results are encouraging, we still remain cautious about interpreting them, emphasizing the need for continued systematic long-term data collection for a slow-reproducing and long-lived species to accurately measure population trends and determine the effectiveness of the diclofenac ban. Our paper entitled "Populations of the critically endangered Long-billed Vulture in Pakistan increase following the ban on diclofenac in south Asia" was accepted in the scientific journal *Bird Conservation International*.

**\*Surveys of prevalence and concentration of toxic NSAIDs in the food supply of wild vultures in India. (report incorporated elsewhere)**

#### **4. Surveys of prevalence and concentration of toxic NSAIDs in the food supply of wild vultures in Nepal.**

**Reporters:** Richard Cuthbert and Toby Galligan

At the first SAVE meeting (Pinjore 2012), the TAC discussed the need to continue cattle carcass surveys to monitor the prevalence and concentration of vulture-toxic NSAIDs in the food supply of wild vultures in

Nepal. The TAC also agreed that the effect of saturated salt (NaCl) solution (currently used as a preservative for carcass samples in Nepal) on depletion of diclofenac in tissue needs to be established.

Due to the lack of carcass dumps in Nepal, and thereby random distribution of carcass in the PVSZ, BCN employs a network of skimmers to collect carcass samples. Between July and November 2011, 17 skimmers in 8 districts collected 108 samples. In 2012, BCN attempted to improve this sampling rate. Sagar Paudel implemented a well thought-out work plan with the ambitious plan to attract 100 skimmers in 12 districts to collect 50 samples each between January and December 2012. To date, 18 skimmers in 8 districts have added 232 samples. After 1.5 years, the total number of carcass samples collected in Nepal is 412.

The project and research to evaluate the effect of NaCl on the depletion of diclofenac in tissues has been planned for immediately after the 2<sup>nd</sup> SAVE meeting. Amir Sadaula, Toby Galligan and Mark Taggart will compare the depletion rate of diclofenac in various tissues (ie liver, kidney, muscle and intestine) stored in various preservatives (ie NaCl solution, acetonitrile, formalin and ethanol) against freezing at -20°C from samples of tissue from buffalo dosed with diclofenac. Briefly, in Nepal tissues will be immediately frozen at -20°C and stored for a week before being transport to UK in an insulated box. On arrival in the UK, the samples will be immediately stored in the various preservatives outlined above. Subsamples will be tested for diclofenac on arrival and at 1, 2, 4, 6 and 12 months. A report will be finished in early 2014.

This experiment is dependent on gaining permission to import samples into the UK for analysis. Mark Taggart is currently discussing with colleagues the possibility of undertaking the experiment at a laboratory with the necessary quarantine level. It is hoped that we have permission to import before the second SAVE meeting so that samples can be brought back to the UK in December 2012.

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## **5. Surveys of the availability and provenance of toxic NSAIDs to livestock owners in India**

**Reporters:** Richard Cuthbert and Toby Galligan

At the 1<sup>st</sup> SAVE meeting (Pinjore 2011), the TAC discussed the need to continue pharmacy surveys to monitor the availability and provenance of vulture-toxic NSAID to livestock in India.

In 2012, Vulture Safe Zone Teams in four Provisional Vultures Safe Zones in India commenced a three-stage pharmacy survey, where Stage 1 and 3 are undercover surveys; and Stage 2 is an open survey. The survey design will enable measurement of pharmacist response to the diclofenac ban and awareness raising. Within each PVSZ, approximately 40 settlements were selected using a random stratified sampling design and one pharmacy in each settlement was repeatedly surveyed through the three stages. Except in Stage 2, where only half of the selected settlements were surveyed, but more than one pharmacy in these settlements were surveyed to spread awareness. Presently, Stage 1 is complete and Stage 2 is underway.

In Stage 1, settlements were surveyed across districts and 3 states (Uttarakhand, Uttar Pradesh and Jharkhand). An undercover surveyor (either a local man or a field assistant) asked pharmacist for a painkiller for a sick cow. Seven types of NSAID were recorded:

Stage 1: NSAIDs available in pharmacies across settlements as revealed by undercover pharmacy surveys

NSAID	% Settlements
Diclofenac	60.7
Meloxicam	16.4
Piroxicam	10.7
Nimesulide	5.7
Mefenamic acid	3.3
Metamizole (Analgin)	1.6
Paracetamol*	14.8
None	3.3

\*as a second ingredient for meloxicam, nimesulide, piroxicam and mefenamic acid

Preliminary results for Stage 2, from settlements across two states (90% from Jharkhand and 10% from Uttar Pradesh East), revealed pharmacist response to the diclofenac ban. Here, an apparent vulture conservationist asked pharmacists to show them all livestock painkillers in stock. In Jharkhand, where extensive awareness raising has occurred, all seven pharmacies that offered diclofenac in Stage 1, did not offer this in Stage 2 (ie 37% of pharmacies surveyed in Stage 2). In Uttar Pradesh East, where targeted awareness raising has only begun, of the three pharmacists surveyed at both stages, all offered diclofenac at Stage 2 and two offered diclofenac at Stage 1 despite likely stocking meloxicam as determined in Stage 2.

Stage 2: NSAIDs available in pharmacies across settlements

NSAID	% Pharmacies
Diclofenac	35.3
Meloxicam	50.0
Piroxicam	0.0
Nimesulide	8.9
Mefenamic acid	2.9
metamizole	2.9
phenylbutazone	1.5
Paracetamol*	13.2

\*as a second ingredient for meloxicam, nimesulide, nemoclyde and mefenamic acid

Interestingly, despite the fact that meloxicam was stocked in more pharmacies than diclofenac (Stage 2), diclofenac is offered more often than meloxicam (Stage 1). For comparison with previous results, 70 and

36% of pharmacies stocked meloxicam and diclofenac, respectively, in 11 states between 2007 and 2010.

Stage 2 of the pharmacy survey will be complete by December 2012; and Stage 3 will be complete by March 2013. RSPB and BNHS will analyse the data and prepare an article for publication in 2013.

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## **6. Surveys of the availability and provenance of toxic NSAIDs to livestock owners in Nepal**

**Reporters:** Richard Cuthbert and Toby Galligan

At the first SAVE meeting (Pinjore 2012), the TAC discussed the need to continue pharmacy surveys to monitor the availability and provenance of veterinary NSAIDs in Nepal.

BCN undertook two types of pharmacy survey in Nepal in 2012:

First, pharmacies were surveyed across districts in the western mid-hill region for the first time. An open approach involving a government official and awareness raising was used. Four types of NSAID were found: meloxicam in 53% of pharmacies; nimesulide in 41% of pharmacies; 8 brands (meloxicam and nimesulide) with paracetamol as a second ingredient; and 1 brand (meloxicam) with mefenamic acid as a second ingredient.

Second, pharmacies were surveyed across settlements and districts in the western lowland region. Settlements were selected at random using a stratified design; and the survey was done undercover with a local field assistant posing as a livestock owner. Three types of NSAID were recorded:

NSAID	% Settlements
Diclofenac	4.3
Meloxicam	48.9
Nimesulide	2.1

It is likely that more nimesulide was encountered, but because of a misunderstanding in methodology, only diclofenac and meloxicam was recorded during the majority of surveys. As a result, no data was collected from 45% of settlements. It is unlikely that the majority of these pharmacies offered no NSAID, suggesting nimesulide is extremely common (an idea supported by anecdotal evidence collected by BCN), however other NSAIDs may also contribute to this figure. Notably, the two settlements where diclofenac was found were located on the Nepal-India border.

An undercover survey of the western mid-hill region is planned for December. Undercover and open surveys will continue in the above mentioned regions in 2013. Importantly, open surveys with government officials will be planned for the border settlements where diclofenac is found. Report and publication will be prepared later in 2013.

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## **7. Establishment and maintenance of Vulture Safe Zones in India**

**Reporters:** Ananya Mukherjee , Richard Cuthbert , Vibhu Prakash

### **Summary:**

The work on establishing vulture safe zones in India was initiated by holding a workshop at Parwano in November 2011 inviting local partners from the areas which were identified for establishing the safe zones. Formal initiation of vulture safe zone work in 2012 started following on from the work of local partners in Uttarakhand and Jharkhand who had already begun their work in the previous years with the help of RSPB's Darwin funds. The securing of Save Our Species funds, (a global coalition of IUCN, GEF and World Bank to support conservation of critically threatened species) was an added boost for the vulture recovery programme. Following the vulture safe zone criteria, six vulture safe zones were established in total, in the states of Uttarakhand, Uttar Pradesh (Terai East and Terai West), Jharkhand, Gujarat and Assam. One of the main aims of the vulture safe zone work has been targeted advocacy for creating a diclofenac free zone in the provisional VSZ areas.

### **Establishment and maintenance of Vulture Safe Zones (VSZ) in India.**

2012 witnessed the formal initiation of the vulture safe zone work following on from the previous year's vulture safe zone criterion agreed in the November 2011 SAVE meeting. Six zones have been provisionally, established, with signed MOUs between RSPB/BNHS and Uttar Pradesh (Terai East), (Terai West), Uttarakhand, Jharkhand and Gujarat local partners, respectively. An advocacy resource pack have been prepared by the Vulture Advocacy Officer with inputs from BNHS and RSPB earlier in the year. This has been circulated to all the vulture safe zone partners, as resource materials to be circulated whilst advocating for a vulture safe zone within their region. As there are regional language differences, partners have also been requested to translate the materials to their local language to facilitate communication amongst local people. However, it has been difficult to identify a local partner in Assam so it was decided that BNHS will carry out the vulture safe zone work there. This involved recruiting two field biologists and an advocacy person in September who will be managed by Sachin Ranade. The meeting with the Senior official of Forests, Animal Husbandry and drug controlling departments was held in Guwahati on 15 September 2012 to initiate the work at Assam. September 2012.

In Gujarat, it was difficult to have one vulture safe zone because of the geographical size of the state and so two provisional zones have been established in the region. MOUs between Ruchi Dave and Kartik Shastri (the two volunteers for BNHS working on vultures in Gujarat) have now been signed recently and vulture safe zone work has now begun officially. Both Kartik Shastri and Ruchi Dave work closely with the BNHS Vulture Advocacy Officer, Janki Teli based in Gujarat to progress advocacy work. Ruchi Dave and Kartik Shastri have had a long-term involvement with vulture work in Gujarat supported over the previous five years with funds from BNHS and the Darwin fund.

Vulture safe zone work has started and progressed in UP (Terai East and West) with vulture and NSAIDS monitoring and advocacy work. A significant milestone has been the State level workshop organised by both partners in consultation with BNHS/RSPB in May 2012. Both vulture safe zone partners in UP (east Terai) and UP (west Terai) participated in this workshop, which also included BNHS and RSPB. Quarterly and monthly reports suggest that Katarniaghat Foundation (UP East Terai partner) has completed Stage 1 and 2 of the Pharmacy Survey. Vulture monitoring data sheets have been sent by UP (Terai East) regularly to update BNHS/RSPB on the progress of work.

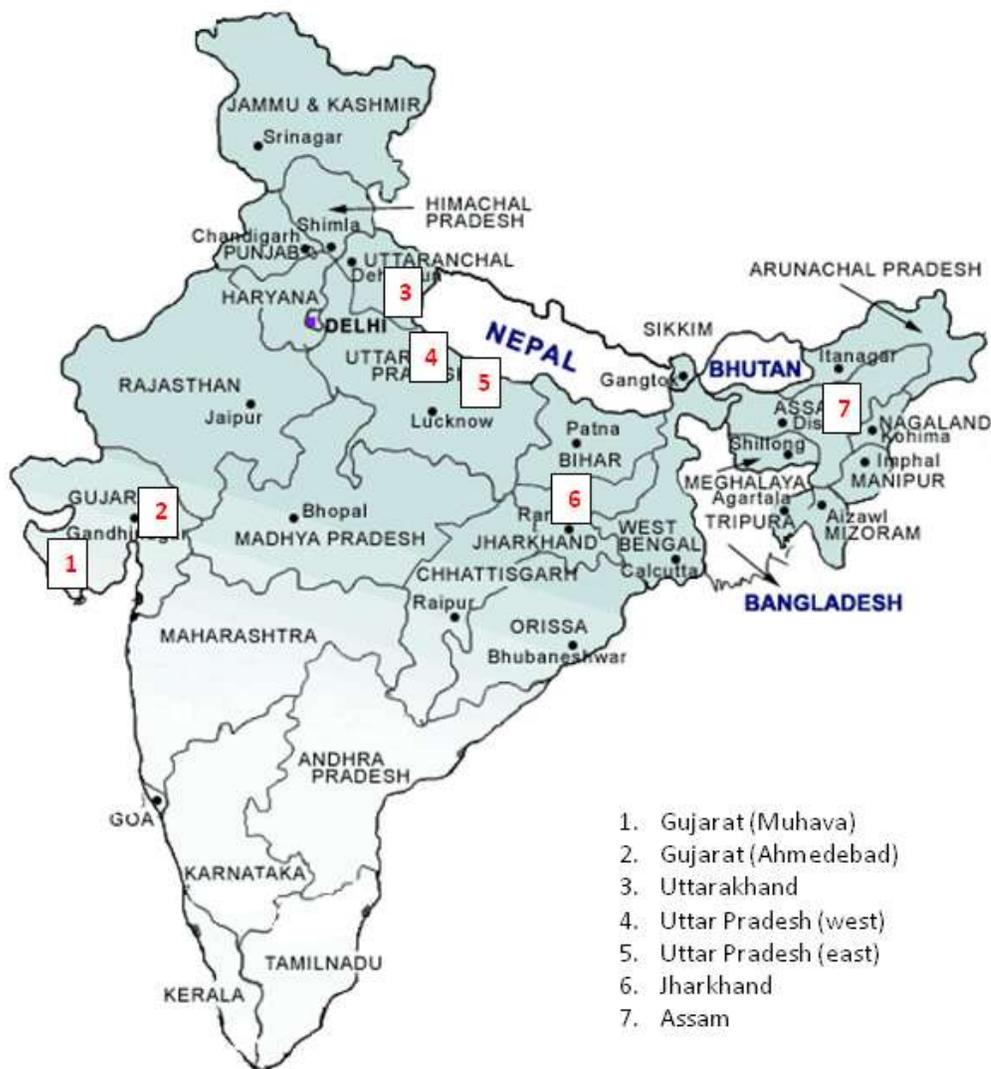
Progress of vulture safe zone work in UP (Terai West), Tarai Nature Conservation has been rather more slow and problematic. Even though they have completed Stage 1 of the pharmacy survey, vulture monitoring work continues to be irregular alongside inconsistent reporting. Such irregularities has led to a suggestion by Vibhu Prakash of hiring a field biologist for the Vulture monitoring work in the vulture safe zones to ensure that data is recorded with accuracy and precision.

There has been a lot of progress by the Uttarakhand partner, Mahseer Conservancy (MC), on the vulture safe zone work. They have completed both Stage 1 and 2 of the pharmacy survey and have regularly reported progress of their vulture monitoring, advocacy and awareness work. On the advocacy and awareness front, MC has had reasonable progress with livestock owners and herders, veterinary doctors, pharmacists and chemists and government officials and employees.

Jharkhand vulture safe zone work has progressed the most in the context of raising awareness, advocacy and vulture monitoring work. Our partner, Satya Prakash with his strong advocacy skills has managed to get the district of Hazaribag, diclofenac free. His advocacy strategy is holistic and he has successfully involved senior officials of administration and forest department and local University faculty whilst raising awareness amongst the druggists and pharmacists on the diclofenac issue. In advocating for a vulture safe drug the state government initiative to distribute meloxicam freely to the vets , has led to a widespread awareness of the issue of diclofenac killing vultures in the Jharkhand area and the need to substitute it with meloxicam. Follow up work is required to establish if the state is actually free of veterinary diclofenac or if this is being used illegally and secretly.

### **Progress on Funding**

Vulture recovery programme received a major boost with the securing of Save our Species funds in the financial year 2012. The funds are mainly for vulture safe zone work in the states of Gujarat, UP east Terai and west Terai and Assam.



1. Gujarat (Muhava)
2. Gujarat (Ahmedabad)
3. Uttarakhand
4. Uttar Pradesh (west)
5. Uttar Pradesh (east)
6. Jharkhand
7. Assam

## 8. Establishment and maintenance of Vulture Safe Zones in Nepal

**Reporters:** Khadananda Paudel & Richard Cuthbert

### SUMMARY:

#### 1. *Extent of current and newly established VSZ*

An area of 39, 122 km<sup>2</sup> (21 districts) has been officially declared as Vulture Conservation Areas. The current area of VCAs stretches along the western lowlands (from Chitwan to Kanchanpur district) and covers all six vulture safe feeding sites (VSFS) and a vulture conservation breeding centre (see Annex-1). New expansion has been targeted for western hill districts in order to make a block with more than a 100 km<sup>2</sup> radius.

*Educational materials produced and distributed.*

3000 leaflets on “*Save Natural Scavengers*” and 2000 eco-tourism promotional brochures were produced and distributed during the General Assembly of Para-veterinary Association, vulture conservation awareness workshops, IVAD and other awareness activities in 2012.

2. *Visits to Pharmacies and veterinarians*

Altogether 56 veterinary pharmacies were surveyed in mid-hills (Parbat, Gulmi, Syangja and Tanahun) with the involvement of district livestock service office officials. None of the pharmacies were found with Diclofenac. The alternative safe drug, Meloxicam Inj, was found in all pharmacies. There was also an alarming amount of use of Nimuslide as Injection (15ml, 30ml) which was found in most pharmacies. In lowland, under covered pharmacy survey was conducted in 42 pharmacies covering 9 districts. Diclofenac was found in two pharmacies (Nawalparasi and Kailali) during this survey.

3. *Swapping of toxic for safe veterinary NSAIDs*

Meloxicam was exchanged with diclofenac in Kanchanpur, Kailali and Nawalparasi district. Altogether 42 vials (30 ml.) were exchanged. Also we are distributing one vile (30 ml) meloxicam to each veterinary practitioner who attend our training/workshop as a promotional activity and will be a benefit to the practitioners to attend the program.

4. *Awareness Activities/workshops*

Meetings and discussions with Jatayu Restaurant Management Committees (JRMCS) and community partners are regularly conducted (at least once in a month). Within this year, Community Awareness activities were conducted in Nawalparasi, Rupandehi, Tanahun, Dang Kaski and Kailali. About 1350 people participated in the awareness activities and more than 20 thousand people participated in an event in Dhangadhi where the message on vulture conservation was also disseminated. Village level government and non-government institutions such as Village Development Committee (VDC), CBOs, NGOs, District Development Committees (DDCs) participated in the workshops and discussed fund raising for sustainability of the restaurants. DDCs have committed to allocate some funds for sustaining vulture restaurants and district level government authorities (DDC, DLSO etc.) have supported restaurants for their income generation activities.

International Vulture Awareness Day 2012 was celebrated in 11 districts (Banke, Bardiya, Kanchanpur, Dang, Salyan, Kapilbastu, Palpa, Nawalparasi, Chitawan, Kaski and Kathmandu). About 1052 people were participated in the events. The target groups were community people, farmers and veterinary practitioners.

Provisional Vulture Safe Zone declaration workshops were conducted in Dang, Nawalparasi, Kapilbastu and Rupandehi districts. Different District Government authorities from District Development office, District livestock Service Office, District forest office, District health office, and District Agriculture office attended the workshop. Representatives from Nepal Para veterinary and livestock association district committee, community forest user groups, and Journalists also participated in the program. A total of 111 people were participated in the workshops.

5. *Provision of ungulate carcass free from toxic NSAIDs*

A total of six vulture safe feeding sites operated by BCN are providing diclofenac free food for vultures. Yearly about 1000 diclofenac free carcasses are fed by these feeding sites.

**PROGRESS ON CO-FUNDING:**

BCN has been successful in securing some of the funding. The project funded are:-

- Mohammad Bin Zayed Species Conservation Fund awarded a project “strengthening Vulture Safe Zone for the conservation of critically endangered white rumped vultures in the western lowlands of Nepal”. The total amount of the project remains USD 10,000.00 (January)
- Oklahoma City Zoo has awarded a conservation donation to support a project entitled "Vulture Safe Zone: In situ Conservation of Critically Endangered Vulture Species in Salyan, Nepal". The total amount of the project remains USD 2,500.00 (January)
- Rufford Small Grant Foundation awarded a project “Participatory conservation of critically endangered vulture species through community managed vulture safe zone in Far west, Nepal”. The total amount of the project remains GBP 5,830.00 (April)
- Oriental Bird Club (OBC) awarded a project “Community-based Ecological monitoring of critically endangered Oriental White-backed Vultures in Suklaphanta Wildlife Reserve, Important Bird Area, Nepal”. The budget for the project remains GBP 1,250.00 (June)
- Conservation Research and Foundation awarded a project “Vulture Safe Zone Management”. The budget for the project remains USD 1,000.00 (June)
- Chester Zoo awarded a project “Community Managed Vulture Safe Zone for conservation of critically endangered vulture species in Nawalparasi, Nepal”. The budget for the project remains GBP 3,000(July)

The proposals were also submitted to CLP (follow-up) \$18,000, Tourism Cares worldwide grants \$8000, National Birds of Prey Trust, UK £ 8,000, but were rejected.

## **9. Monitoring of Provisional Vulture Safe Zones in India**

**Reporters:** Toby Galligan, Richard Cuthbert & Vibhu Prakash

At the first SAVE meeting (Pinjore 2012), the TAC discussed monitoring of Provisional Vulture Safe Zones (PVSZ). It was agreed that cattle carcass sampling for the prevalence of diclofenac and other vulture-toxic NSAIDs was the primary method by which a PVSZ could be upgraded to a true Vulture Safe Zone; and that a large number of negative samples in a reasonable timeframe would be required to achieve this (ie >800 samples in a 2 year period). It was agreed that diclofenac test kits (aka dipsticks) and a network of skimmers would be one option to facilitate sampling – an approach undertaken in Nepal. To these ends, the TAC asked Vibhu Prakash, Richard Cuthbert and Toby Galligan to plan a carcass sampling methods and validate the diclofenac test kits for fieldwork.

Cattle carcass sampling in PVSZ in India has not yet begun. The plan to use a network of skimmers to collect samples has not been pursued, because Vibhu Prakash deemed based on past dealings that skimmers were unreliable for passing on information on dead animals for sampling. An alternative plan to use the Vulture Safe Zone teams to collect samples was not pursued either, because after assessment the capability and capacity of these teams, we agreed teams would not collect samples accurately or promptly. Consequently, we have agreed that trained field biologists are required to undertake sampling accurately and within a reasonable timeframe. Three teams of carcass samplers have been proposed to sample in three regions: 1) Assam; 2) Gujarat; and 3) Uttarakhand, Uttar Pradesh and Jharkhand.

The Assam team will be based at the Rani Vulture Conservation Breeding Centre and consist of drivers already employed at the centre and two new biologists recruited to help establish a PVSZ in the state. As part of the 2013 work plan for the centre, a network of informants (ie skimmers, forestry workers, village leaders, etc) will be established to locate carcasses.

The Gujarat team will be based at Pinjore Vulture Conservation Breeding Centre and consist of a field biologist, driver, vehicle and portable freezer. Gujarat has large carcass dumps, allowing the team to

sample for 2 months in the Ahmadabad and Muhava areas twice a year for two years (4 months/year). Additional, sampling can occur in areas in Gujarat of fast and slow decline (determined by the GEER foundation vulture counts) and variation in conservation activities.

The Uttarakhand, Uttar Pradesh and Jharkhand team will be based at Pinjore Vulture Conservation Breeding Centre and consist of a field biologist, driver, vehicle and portable freezer. Carcass dumps are not used in these areas, therefore PVSZ teams and a network of informants will be required to locate carcasses. The team will sample for 3 weeks in four areas (ie Corbett NP, Dudhwa NP, Katerniaghat WS and Hazaribagh) twice a year for two years (6 months/year). Local informants to assist in reporting carcasses will be found through the local NGOs that are already in the vulture work.

Monitoring in PVSZ also consists of pharmacy and vulture surveys performed by PVSZ teams. For details of the pharmacy surveys, refer to the report *on surveys of the availability and provenance of toxic NSAIDs to livestock owners in India*. For details of vulture surveys, refer to the tables attached. In 2012, Toby and Mandar Kulkarni (BNHS) have begun to build capacity in four PVSZ to collect monitoring data accurately and regularly. The response from teams has been mixed. In 2013, Toby and Mandar will work to further improve capacity in these teams.

The diclofenac test kits have not been validated for fieldwork. Following the 1<sup>st</sup> SAVE meeting, Rohan Shringarpure (BNHS) was given the task to blindly test a set of 170 carcass samples known to be positive or negative for diclofenac.

Toby has been problem solving with Mark Taggart and SENOVA (the test kit manufacturers). Immediately following the second SAVE meeting, Toby and Richard will work with Rohan and Vibhu to improve the procedure and work plan. In addition, new test kits will be taken to India to compare with those stored there in case the latter have been damaged.

Finally, the TAC agreed to pursue funding for satellite telemetry studies of vultures within PVSZs. Funds from the RSPB Vulture Fund has been used to purchase six satellite tags. In 2013, RSPB and BNHS will plan to commence a project to track vultures within PVSZ.

Table 1: Mean number of each species and observations per site across sites within each PVSZ between the given periods in 2012.

PVSZ	Sites	Obs/site	Period	WBV	LBV	SBV	RHV	EV	HGV
Jharkhand	6	6	Apr-Sep	<35	<5	-	-	<5	-
Uttarakhand	2	18.5	May-Aug	<10	-	<1	-	-	<1
Uttar Pradesh East	5	6	Feb-Aug	,15	-	<1	<1	<1	<1
Uttar Pradesh West	Data collection has not commenced								

Table 2: Maximum number of active nests, fledglings and observations per site across sites within each PVSZ between the given time period in 2012. All data are for white backed vultures except one active nest in Uttar Pradesh East that was for a slender-billed vulture.

PVSZ	Sites	Obs/site	Period	Active nests	Fledglings
Jharkhand	5	12	Jan-Oct	<60	<15
Uttarakhand	2	20	Mar-Aug	<20	<10
Uttar Pradesh East	4	3.5	Feb-May	<70	<5
Uttar Pradesh West	Data collection has not commenced				

## 10. Monitoring of Vulture Safe Zones in Nepal

**Reporters:** Khadananda Paudel & Richard Cuthbert

### SUMMARY:

#### *Colony monitoring*

Monitoring of vulture colony was undertaken in the western lowland of Nepal. Major nesting colonies are located at Pithouli and Basa of Nawalparasi, Gaidatal of Rupandehi, Lalmatiya and Bijouri of Dang, Khutiya of Kailali and bufferzone of Kanchanpur district.

This year, the highest number of white-backed vulture nests was observed in Rupandehi district were recorded. Another important nesting site was in Kailali district. In total 254 WRV nests and 3 EV nests were monitored in the 2011/12 breeding season.

Table 1 Nest numbers monitored in 2011-12 in western lowland of Nepal

Site	District/Area (km <sup>2</sup> )	Nests monitored in 11/112	Breeding success
Pithauli	Nawalparasi/2162	WRV <40, EV <5	WRV <30, EV <5
Basa		WRV <10	WRV <5
Gaidatal	Rupandehi/1360	WRV <30	WRV <20
Milan CF		WRV <30	WRV <20
Ganeshnagar		WRV <25	WRV <15
Lalmatiya CF/Hariharpur	Kapilbastu/ 1738	WRV <25	WRV <15
Lalmatiya	Dang/2955	WRV <20	WRV <10
Bijouri		WRV <15, EV <5	WRV <10, EV <5
Khutiya	Kailali/3235	WRV <45	WRV <30
Beli		WRV <25, EV <5	WRV <20, EV <5
Suklaphanta WR	Kanchanpur/1610	WRV <10	WRV 8

The number of white-backed vulture nests in and around the VSFS has fluctuated slightly in the last season, which might be due to a shifting distribution of nesting throughout the western lowlands along with the expansion of VSFs.

#### *Mortality records of vultures*

Less than 35 dead vultures were recorded within 2011. A single event in Dang district accounted for <15 Himalayan griffon, <5 white-backed and <5 cinereous vulture deaths when they were exposed to a poisoned dog which had been placed out intentionally. Similarly, <10 Himalayan Griffon died in Salyan district when they were exposed to a poisoned animal carcass. Among the total number of carcasses recovered <10 were found dead due to natural causes, with <5 birds found injured of which 3 subsequently died during or following treatment. The highest mortality was observed in the Himalayan griffon vulture. Sick or injured Himalayan griffons are often encountered in the lowlands of Nepal and often these birds have injuries or sickness leading to mortality. These birds are often juvenile or immature birds and the apparent high prevalence of deaths may be due to these young birds migrating to or from the Himalayas. A most serious mortality issue occurs in the mid-hills of Nepal, where people frequently and intentionally use poison in cattle carcasses to kill leopard and other carnivores, but accidentally vultures and other scavenging birds and mammals are exposed and poisoned. 25 of the total number of carcasses were recorded in the Nawalparasi to Kanchanpur districts in the VSZs.

In 2012, only two dead birds were recorded and both were Himalayan Griffon Species. One bird was found dead on Khaireni forest of Rampur area (Palpa district) and another was injured at Panchanagar (Nawalparasi) and died after 15-20 days (it was reared at DLSO Nawalparasi for the time).

**Table 1 : Record of dead vultures in Nepal (2011)**

Species	WRV	HGV	CV	SBV	Eg.V	Eu.V	LV	RHV	Total
No of dead vultures (2011)	<5	<30	1	0	0	0	0	0	<35
No of dead vultures (2012)	0	<5	0	0	0	0	0	0	<5

## **11. Summary of results of any studies of the toxicity of NSAIDs to vultures completed since the previous Board meeting. List publications arising from this work**

**Reporters;** Vibhu Prakash, Mohini Saini, Richard Cuthbert

### **11.1. Diclofenac toxicity in vultures and other scavenging birds**

Diclofenac was detected in 19 out of 54 vultures necropsy tissues from 2007-08 and 2009-10 survey.

In addition, we undertook post mortem and diclofenac monitoring of vultures and eagles found at a cattle carcass dump in Rajasthan, India, and assessed the likelihood for diclofenac toxicity within the Accipitridae based on each species phylogenetic relationship and scavenging likelihood. Carcasses had signs of extensive visceral gout and microscopic damage to kidney tissue cells that are characteristic of diclofenac toxicity in *Gyps* vultures. Analysis of kidney and liver tissue samples from these birds by indirect competitive ELISA indicated the presence of diclofenac residues in all birds. Reviewing evidence for diclofenac sensitivity against the phylogenetic relationship and scavenging likelihood of the Accipitridae indicated that veterinary diclofenac is potentially having a far wider impact on scavenging raptors in the region than previously anticipated.

### **11.2. Progress made with the planning and funding of safety testing within the reporting year**

An interactive meeting to develop “Mechanism for toxicity testing of new molecules to support vulture conservation in India” funded by Ministry of Environment & Forests, New Delhi was held at Indian Veterinary Research Institute, Izatnagar on 3rd August 2012 under the Chairmanship of Director, IVRI. Besides IVRI faculty, representatives from Bombay Natural History Society; Salim Ali Centre for Ornithology and Natural History; Department of Animal Husbandry and Dairying, Ministry of Agriculture; Deptt. of Pharmaceuticals, Ministry of Chemicals and Fertilizers; Ministry of Environment & Forests, GB Pant University of Agriculture & Technology participated in the meeting. The work programme was discussed in detail in the meeting and a draft of project proposal entitled “**Assessing the Safety to Vultures (*Gyps Spp.*) of Non-Steroidal Anti-Inflammatory Drugs in Veterinary Use in India**” was finalized. The proposal duly signed by Director BNHS and Director IVRI is under submission to MoEF for funding.

## **12. Vulture advocacy at national level in India**

**Reporters:** Ananya Mukherjee, Janki Teli , Chris Bowden

### **Summary:**

In order to create a strong lobby amongst key players in alliance between SAVE partners in India an agreed advocacy strategy is important in order to remove diclofenac from the food chain and more specifically by influencing legislation against multi-dose vials of human diclofenac. A strong advocacy strategy would engage key players in individual states in concurrence with our local partners or civil society organisations. Milestones which marked the progress of advocacy and awareness work in the past one year are presented in this report.

### **Vulture advocacy at national level in India**

The Symposium on developing a Regional Response to the Conservation of South Asia's Critically Endangered Vultures was instigated by IUCN with key support from Central Zoo Authority and Wildlife Institute of India and held in May 2012 in Delhi. The 1<sup>st</sup> SAVE report was a key resource at the meeting and provided important basis along with presentations for the significant outputs of the meeting. The Regional Declaration signed by all four South Asian Governments attending closely reflected SAVE priorities, including the need for human diclofenac vial size regulation, the need for safety testing of untested drugs as well as other related points.

Dr. Jakati, a senior and now retired forest official has agreed to join the BNHS team and to chair SAVE FACC in order to give a boost to the vulture advocacy work at a government level. His involvement has already enabled BNHS's Vibhu Prakash to meet with senior government officials in the state of Haryana, Chandigarh and Himachal Pradesh as well as with senior Health Ministry officials in central Government.

Attendance of the CBD CoP in Hyderabad provided opportunities for two well attended vulture side events, a presentation at a further human health and wildlife side-event and various publicity and media coverage.

At a state level, advocacy work required meeting Drug Controllers (DC) of each State including drug inspectors who need influencing in order to create pressure for the multi-dose vial size ban. The Vulture Advocacy Officer as part of her vulture advocacy work has been visiting the State Drug Controllers in the priority states. Areas covered so far are Gujarat State Drug Controller, Rajasthan State Drug Controller and Lucknow. Uttarakhand is in the pipeline.

Most of these meetings required creating awareness amongst the Drug Controllers on the issue of the diclofenac drug causing the crash in vulture population, the use of the human form of diclofenac for veterinary purposes and thereby flouting the law. Most of the Drug Controllers have responded positively and some have decided to take action by either following it up with their higher ups, or by agreeing to distribute free meloxicam in the hospitals to prevent the misuse of multi-dose vials, as is the case in Rajasthan. The Gujarat DC for example has responded by noting down the names of pharmacy companies still producing human diclofenac without a label 'Not for veterinary use' in order to take action against them.

It was also decided, in partnership with BNHS and RSPB, that holding State level workshops in priority vulture safe zone areas would help to raise the profile of vulture conservation in the respective states. These workshops have the potential of engaging government and forest officials, local partners and the Press, together creating awareness on the critically endangered status of the vultures. One such

workshop was organised in UP by BNHS/RSPB along with our local partners in the two PVSZs. There were four workshops organised (as UP is a big state) at different levels for maximum outreach and impact. The first workshop was in Lucknow where the Senior officials from the UP forest department were invited to engage in talks and discussions given by Vibhu Prakash and Asad Rahmani.

Local level workshops have also been organised by BNHS/RSPB's partners in UP in the districts of Suhelwa and Dudhwa national park in order to give vultures a wider coverage. This was organised by partners from Tarai Nature Conservation and Katerniaghat Foundation with the involvement of grassroots level actors.

It is also hoped that similar such workshops would be held in Uttarakhand, Gujarat and all the important vulture safe zone states. Jharkhand vulture safe zone team headed by Satya Prakash have been successful in showcasing the critical status of vultures in Jharkhand. His advocacy skills have been exemplary in not only raising awareness amongst various stakeholders such as pharmacists, drug association members, the local University faculty, Drug Controller, veterinary doctors in hospitals but also led to the involvement of the forest department and civil servants of the state. With such strong support, Satya Prakash has apparently phased out diclofenac from the district of Hazaribag. This claim will be subject to full verification i.e. whether his awareness and outreach programme has successfully phased out diclofenac from that particular town.

Other advocacy activities include state-level satellite communication programme in Gujarat by the Vulture advocacy officer, Janki Teli. It was a platform whereby the diclofenac message was widely disseminated at a tehsil level, amongst various stakeholders, across the state of Gujarat and also to all the local volunteers participating in state wide vulture monitoring work. Prior to the state-wide monitoring, Janki Teli was actively involved with the state Forest Department and Gujarat Ecological Education and Research Foundation regarding methodology of how to conduct monitoring and also on how to spread the message of diclofenac amongst the local stake holders.

Media has also been used by Janki Teli to disseminate information on the critically endangered status of vultures in Gujarat. These talks have been broadcasted on national television in regional languages in two 30 minute episodes on 21<sup>st</sup> and 28<sup>th</sup> of September on the program of "Paryavaran Darshan".

An important outcome of advocacy at State Level in Gujarat is that the drug commissioner of the State has already made a representation at centre based on a letter written by Janki Teli whilst advocating for a ban on the multi-dose vial size of diclofenac. A copy of this letter has been attached at the end of this report (Please read highlighted green section for the relevant information).

Finally, the provisional advocacy strategy diagram has been included with this report to illustrate the strategy plan to advocate for the vultures. It is hoped that the full strategy developed will help progress vulture advocacy work from the tehsil level to the national in order to phase out the use of diclofenac and substitute it with meloxicam. A further workshop was held in October involving 6 members of BNHS, BCN and SAVE FACC to develop ideas for a full advocacy strategy and this is now being worked up further with assistance from Lloyd Austin of RSPB (Lloyd is head of RSPB Scotland Policy).

# WHY MELOXICAM AND NOT DICLOFENAC



## Use meloxicam formulations

Safety tested for vultures and livestock

An effective NSAID for treating inflammation and pain

Slower onset of action and longer lasting relief

Meloxicam administered once in 3 days (for 20mg/ml formulations)

Selectively inhibits COX-2 enzymes with less side effects for animals

Safe and approved for pregnant animals

## Do not use diclofenac formulations

Banned veterinary drug due to its toxicity to vultures

Using diclofenac is a punishable offence

Rapid onset of action, but effect short lived

3 x daily doses are required for treatment

Inhibits both COX-1 and COX-2 enzymes, with more side effects

Not approved for pregnant animals



Photographs: ©BNHS, Aditya Roy

24<sup>th</sup> May 2012

### Agenda point for DCC.

1) It is fact that many illegal abortion being done in the country by unauthorized doctors. This is one of the reasons for imbalance in male – female child birth ratio. Female child birth rate is decreased compare to male child. In this regard it is suggested that

- MTP medicines mainly Mifeprestol and Mesopreston should be sold to only Medical Practitioner who is eligible for MTP procedure as per MTP Act, 1971 and obstetrician and Gynecologist and no chemist can sale this medicine by way of retail.
- This medicine should be labeled as "Not for Retail sale" and "To be supply to Obstetrician and Gynecologist and authorized Doctor for MTP procedure as per MTP Act, 1971."

2) Vide Government Notifications No. GSR 499(E) Dated.4 July, 2008 "Diclofenac and its formulations for animal use" is banned under section 26A. Non Government organization, Bombay Natural History Society working for Nature conservations has made representation to this office to ban multi dose Diclofenac Injection (For Human use) which is being misused for animal use.

Normally for Human use Diclofenac Injection dose is 3 to 4 ml. It is suggested to stop manufacturing 10 ml & 30 ml multi dose vials of Diclofenac Injections for Human use and it should be supplied in vials or ampoules for single use, to be inline with Oxytocin Injection for Human use. Copy of letter from BNHS, India attached herewith.

It is also suggested that this medicine should be labeled as "Not for veterinary use."

3) As per Drugs & Cosmetics Act and Rules there under, as per Rule 71, 76 qualifications for competent Technical Staff in manufacturing sections are prescribed. One of the qualifications for manufacturing section is graduate in Science with Chemistry or Microbiology as a Principal Subject or graduate in Chemical Engineer or Chemical Technology or Medicine.

3:24:55 PM

**13. Vulture advocacy at national level in Nepal. (see report 8)**

**14. Vulture advocacy at national level in Pakistan. (see report 22)**

**15. Engagement with the pharmaceutical industry in India.**

**Reporters:** Janki Teli & Chris Bowden

Continued contact with Intas has been helpful, and indeed three delegates from the industry (including Intas, Novartis and OPPI) attended the May Regional meeting in Delhi. The fact that companies such as Novartis has ceased producing the large diclofenac vials is welcome, but we were disappointed to then find that Intas was among 35 companies producing the large vials. VJ Teng (Intas) announced at the May meeting that his company was immediately ceasing production of large diclofenac vials. Which was a welcome step Intas has also continued to provide space in their journal for vulture publicity and articles, and is offering opportunities to utilize their outreach networks. Further disappointment however in August was to learn that aceclofenac is produced by Intas, further illustrating the importance of finding a regulatory solution to the problem.

**16. Engagement with the pharmaceutical industry in Europe.**

**Reporter:** Chris Bowden

No major progress despite repeated approaches to companies by RSPB with one major exception of Boehringer Ingelheim in Germany who are showing serious interest in giving further financial support as well as offering technical input.

**17: Collection of vultures from the wild in India.**

No significant changes reported.

**18: Collection of vultures from the wild in Nepal.**

No new birds were collected this year, and no catching was planned.

**19. Collection of vultures from the wild in Pakistan. (see report 24)**

**20. 21 & 22. CONSERVATION BREEDING AND VETERINARY CARE OF VULTURES AT THE VULTURE CONSERVATION BREEDING CENTRES IN INDIA (3 CENTRES COMBINED) Nov 2012**

**Reporters:** Vibhu Prakash, Andrew Routh & Jemima Parry-

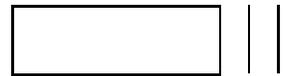
***Vulture Numbers and breeding successes at the three Centres***

The vulture breeding programme at the three Centres continues to improve and increase. All three species have now been bred at the Centres, both with natural breeding and with artificial incubation. All three Centres have bred birds, which is excellent news. We now have a PCR (Polymerase Chain

Reaction) machine in the lab at Pinjore and DNA sexing of the birds has started, we aim to have all of the birds sexed by the end of next year.

### Molecular Sexing of Birds

Species	No. of vultures sexed	No. of Males	No. of Females
<i>Gyps indicus</i>	19	6	13
<i>Gyps bengalensis</i>	17	11	6
<i>Gyps tenuirostris</i>	8	2	6
Total	44	19	25



## **Mortality of vultures at the three centres during 2012**

During the 2012 season we are pleased to report that we have only had one death and that was a bird from Assam. The bird was post mortemed but there was, as is often the case no identifiable cause for the loss of this bird.

## **Health checks, parasitology screening and clinical cases. Aviary cleaning and feeding procedures.**

### **Health Check**

The health check was done in the last week of September and first week of October 2012. Dr. Richard Jones from U.K. oversaw the check up on the 29<sup>th</sup> September at Pinjore. The check included on this year's juveniles also. 36 birds were caught from different aviaries and were examined and were given a thorough health check. All the birds appeared to be in good condition as the weights and hematological parameters were within normal range. Only one juvenile Long-billed Vulture had abnormalities in wing and leg bones but was fine otherwise.

### ***Aviary Cleaning***

As is usual the aviaries are cleaned out once a week outside the breeding season, less during the egg laying period and the rearing period.

The Yearly clean of all the aviaries was effected during August, September and early October, with all aviaries scrubbed and repainted, the sand removed and replaced with fresh, perches and nest platforms replaced and renewed and the baths thoroughly cleaned. All went well and nowadays this procedure can be done in most cases with the birds still in the aviary.

### ***Feeding the vultures***

At Pinjore and Assam the birds are still being fed only on Goat meat, this is carefully regulated and the birds seem to do very well on the diet. It is planned that when we get closer to any release dates, carcasses will be offered so that some are skinned as is the case now and some retain their skin.

The West Bengal VCBC at Rajabhatkhawa has been able to supplement the goat with some wild carcasses of deer and elephant, which has helped to reduce the cost of the feeding. However because the power supply is so poor there have been some problems with the Walk in Deep Freezer, which we hope will be solved in the future.

### ***Artificial incubation***

An Incubation workshop was run by Jemima Parry-Jones, Simon Brough, both from ICBP and Nikita Prakash VCBC Sept 26 – 28<sup>th</sup> 2012. Five people from India, two from Nepal and one from Pakistan attended and the workshop went extremely well, with the participants seeming to enjoy and benefit from the work. We have four new incubators, and three humidity modules which are new to the Centre, these will help with future artificial incubation. At this time because of the problems with the power supplies at both Buxa and Assam it was decided to leave building incubation and brooder facility for two years, when there may be better power supplies available

There were eight new breeding aviaries built last year, five had pairs put in them just prior to the breeding season and all five pairs attempted breeding. Two pairs succeeded in producing a chick, one pair turned out to be two males, this pair has subsequently been split up, and two pairs laid eggs but these were not fertile. In discussion both Dr. Prakash and JPJ agreed that they preferred the colony aviaries for many reasons, however the smaller breeding aviaries had a place.

### ***Veterinary Overview***

We have had a few concerns over veterinary cover over the last couple of years, added to this Andrew Routh has recently left ZSL for Durrell Conservation Wildlife Trust. This has meant that we are at the time of writing unsure if he will be able to remain with the project, although we sincerely hope he will. Consequently, it was decided to ask a second UK Vet if he would be prepared to stand in for Andrew in an emergency. Richard Jones trained under Neil Forbes and Pat Redig of the Minnesota Raptor Centre and now runs his own specialist avian veterinary clinic. He was able to come over with some of the team to see the facilities at Pinjore and meet some of the people involved. He was there for two days, and participated in a veterinary check-up of 14 of the young birds. He was delighted to come and felt that having seen the Centre and met the staff; he is more able to help in the future should it be needed. Dr. Prakash has his report. Richard also knows Andrew and will be conferring with him and Neil Forbes. Following on from the success of Dr Melissa Nollet as a veterinary intern, in order to underpin the local veterinary support and provide training, Dr Thalita Calvi joined the programme. Like Dr Nollet, Dr Calvi was a graduate of the veterinary MSc in Wild Animal Health at ZSL. She came to the programme with extensive wildlife experience gained whilst working in her home country of Brazil. The timing of her visit was slightly later than of Dr Nollet and, for various reasons, Andrew Routh from ZSL was unable to accompany her to India. (Regrettably Andrew Routh was not able to visit India or Nepal during the reporting period). Though she worked in the centres in India and Nepal, taught a large component of a workshop in Pinjore and had substantial input into both the training of veterinary and wildlife volunteers at the Kite Festival in Ahmedabad it was felt, by all parties, that it had not been as successful as the first internship. In consequence, and with an eye on funds, it was determined that the placement of a third out-of-country veterinary intern for a six month period would not provide the programme with what it needs.

**Numbers of staff including veterinary and Para-veterinary staff, appointments, transfers and departures.**

Dr. Dwipen Deka, Veterinarian was recruited this year and was posted at Pinjore but he resigned in four months time on 31 August 2012. Dr. Parag Deori, the Project Vet, has registered himself for a two years MVSc. Programme. He has taken two years' leave but is on a part-time contract with the Project and works for 4 hours a day.

**Facilities and equipment, including losses, defects and requirements.**

A new Colony aviary is being built at Pinjore by the Forest Department, it is nearly complete, but does need about another months work before it can be used. It has become vital to have more space for the birds now we are being successful with the breeding. There are also two new cctv camera's at Pinjore, and to our delight the river spurs are complete so we hope to be safe from flooding in the future.

Buxa has not had any new buildings recently; however a lightning strike on cctv has reduced it to being unworkable any-more! A tree fell on deep freeze room, but repairs have been done. The biggest problem is the power supply at Buxa which is very poor and intermittent, with the occasional four days with no power.

Assam again has had no new facilities, however they did have a theft the item stolen was the solar power unit for the electric fence.

**Equipment Required**

We feel that may still be a need for an anaesthesia machine at one of the other Centres

However what we do feel is crucial is an ophthalmoscope at each of the three Centres in India

**Progress with planning and funding conservation breeding activities.**

We have already discussed that we feel that until the power supply is a little more reliable neither Buxa or Assam should have an incubation facility per say, we may send a couple of incubators over to Buxa so they can gain some experience in hatching hens eggs, but not invest in a full blown Incubation facility for the time being. We have been looking into the feasibility of moving eggs to Pinjore for hatching. But it is a difficult task with all the bumpy roads.

We need to sex those birds whose sex has not yet been determined by actual successful breeding, this will be a priority after the breeding season. This has started very well and excitingly we can now sex the chicks from the membrane of the newly hatched eggs.

At Buxa we need one more colony aviary and two breeding aviaries

At Assam we need the same

At Pinjore we really need two further colony aviaries, the breeding is successful enough that we need to house the young birds so that each species is separate which is very important, and we have a few sub adults and adults with them so they can learn normal behaviour patterns, this in turn helps them to come into breeding condition and breed. We have looked at temporary aviaries, but in the end the colony aviaries work so well that they are probably the best option.

We will need to replace the bamboo at the Centres soon; Buxa and Assam need it more often than Pinjore because of the damper climate.

We are delighted to give this report, the Centres are all breeding birds, the artificial incubation is coming along and has been our pleasure to share our experiences, both good and bad with both Nepal and Pakistan. The work done by the staff is first class and we are learning huge amounts almost on a daily basis. It is a privilege to be a part of this exciting and successful project.

### **23. Conservation breeding and veterinary care of vultures at the Vulture Conservation Breeding Centre, Chitwan.**

**Reporters:** Chiranjibi Prasad. Pokheral, Nava Ratna Pradhan, Jemima Parry-Jones & Andrew Routh

Table 1. Vulture Numbers (Oriental white-backed vultures) at Chitwan Vulture Conservation Breeding Centre November 2012

Colony Aviary One	Colony Aviary Two	Holding Aviary One	Holding Aviary Two
Mixed ages 40	Awaiting refurbishment	10	9

#### *Mortality of vultures at the centre during 2012*

On 11<sup>th</sup> April, 2012, a vulture tagged red TR that was placed in holding aviary two was found dead. The post mortem lesions were found to be congestion on lungs, haemorrhage on brain and pericarditis. The case was suspected to be collision/trauma caused by heavy hail storm.

*Health checks, parasitology screening and clinical cases. Aviary cleaning and feeding procedures.*

The health checkup of vulture was done on march 23, 2012 and march 25 2012 under the guidance of ZSL vet Thalita Calvi. The general checkup and haematological examination was done. The haematological parameters of all vultures that was checked were all in normal range. The physical examination revealed the normal status except there was lacerated wounds on eleven vultures that occurred during catch up.

A general physical examination of 40 vultures was done prior to transfer of vultures from old colony aviary to new one on October. The muscle condition (pectoral and femoral) was normal, plumage damage was minimal, ectoparasite not observed on check-up in all the transferred birds. Few metal ring that was placed on previous check-up did not slipped easily were replaced by metal ring of large size. Furthermore, there was no incidence of bumble foot.

### *Aviary Cleaning*

Short report on aviary cleaning, include new and replacement perches, and any changes for the benefit of the vultures

This involves regular cleaning and yearly cleaning. Yearly cleaning involves complete replacement of sand, replacement of old perches and cleaning walls. The regular cleaning is done before feeding and involves removal of bones, cleaning baths and fixing loosened rope in perches.

The enclosure was made outside the holding aviary that we find benefitting. Previously, vultures got frightened and fly from one perch to another when people approach near to them and now it gets frightened only when someone tries to cross this barrier and does not cares movements of people outside enclosures.

In old colony aviary there was coarse cemented wall and most of vultures had lacerated wounds and bleeding from it during catch-up. To avoid this, smooth cemented wall was preferred in new colony aviary.

### *Feeding the vultures*

The vultures were fed on buffalo calf. The food is given at the interval of 2-3 days.

### *Breeding success\ artificial incubation\Management*

At this point although two of the staff from the project have recently been to an incubation workshop, we feel that we should, as in India, try to achieve natural breeding before we attempt artificial manipulation of eggs. We have had one (?) breeding attempt last year, when one of the birds laid an egg. Unfortunately the building of the second colony aviary was in process and this disturbed the bird so that the egg was broken, however to have an attempt this early bodes well for the breeding future of these birds.

Nava Ratna Pradhan and Suraj Subedi came to the VCBC at Pinjore in India Sept 26 -28<sup>th</sup> for an incubation workshop with Simon Brough, Nikita Prakash, Dr. Vibhu Prakash and Jemima Parry-Jones. The workshop went well and both Nepalese participants showed care and skill in egg handling and the other aspects of the workshop. Although it is possibly not advisable to put their skills into practice with vulture eggs at this time, we would encourage them to practice on hen eggs so they can get comfortable with the machinery and techniques.

At the time of writing all the birds have been moved to the new colony aviary so that the old one can be refurbished with new nest cots (woven platforms) new perches, the baths sorted out so they drain properly, fresh sand and so on. Once this is achieved 29 birds of mixed ages will be moved back into the first colony aviary so that we have half the birds in one and half in the other, giving more space and more chance for captive breeding.

#### *Veterinary Overview*

*The vultures are found to be normal in health status. The blood parameters examination and the physical status reveals normal health status. This year the ectoparasites infestation was not seen. The regular endoparasitic examination revealed few positive sample involving coccidian and ascaridia spp. Bumble foot was not present on any physical examination.*

Thalita Calvi's visit report will be made available and a summary supplied on request.

As the SAVE Board had concerns about Andrew Routh's move from ZSL and at least until things had settled down we had no expert veterinary cover for the project, it was decided to involve another expert for immediate and future problems that might arise. Consequently Richard Jones, who has had a passion for raptors all his life, trained with Neil Forbes and then spent three years with Pat Reddick in Minnesota working as an avian specialist, kindly agreed to come out to India and Nepal to see the projects, meet the people involved, see the various set ups and have the chance to check some of the birds. He arrived in Nepal with the rest of the group, on Sept 30<sup>th</sup>, travelled down to Chitwan and spent the following two days with the vulture team, seeing the new colony aviary and having the chance to check a small number of the birds, plus do some teaching while he was there.

As he said himself, having met the people and seen how things are run it will be a great deal easier for him to help and advice, both from the UK and if needs be from Nepal and India. He liaised both before and afterwards with Andrew Routh, whom we all hope will still be involved when he has settled at Jersey Zoo, as not only is he an integral part of the team, but it would be good to have Jersey on board as well.  
JPJ

*Numbers of staff including veterinary and para-veterinary staff, appointments, transfers and departures.*

There are altogether 5 staffs in VCBC, Nepal. Among 5 staffs, three are three keepers, one head keeper and one veterinary officer.

*Facilities and equipment, including losses, defects and requirements.*

The centre has facilities like CCTV monitoring (established in July, 2011), recently established labs and information centre. The electricity shortage, fluctuated voltage and storm lightening is a major problem at centre. This has caused maintenance of CCTV recorder four times in the past year and completely damaging half of cameras. The deep freeze that is used for storing meat does not function properly because of fluctuated voltage and it was also replaced 4 times with a new one. In addition, CPU and monitor are also repaired many times. In my point of view, the solar panels and good earthing at the centre would be benefitting.

Currently, the laboratory has facility for only haematological and parasitological examination. It would be better to plan for serological test and microbiological examination.

The second colony aviary was completed by the end of October giving two excellent spaces for the 59 birds to settle and start breeding in the future. ZSL had obtained funding for a small laboratory and also information room, which had been built and the lab was up and running. The CCTV receiving monitor is to

be moved into the information room for monitoring by the staff on a daily basis and for visitors to be able to see what is happening in the colony aviaries both inside and outside the breeding season.

Two Brinsea Octagon Incubators, a Hatcher and a Humidity Module is going over to Nepal prior to the SAVE meeting. These will be going to Chitwan and will be used for staff to practice incubation techniques.

*Progress with planning and funding conservation breeding activities.*

We have an excellent team of staff at Chitwan from the head down, all have the vulture's and the project's success at heart.

The four bird staff are extremely good at handling the birds, monitoring and judging behaviour, their catch up techniques are very good and considerate to the needs of the birds. New veterinary surgeon is good at veterinary care for the vultures at VCBC. Of the only three birds we were able to check over physically, all were in excellent condition, my only comment might be that if all were as well fleshed as the three we handled, food consumption could be reduced a little. Particularly if birds are not feeding and consuming all of it straight away. That is of course outside the breeding season, and only if all the birds were in the same physical condition.

## **24. Gyps Vulture Restoration Project, including Conservation Breeding Programme - Pakistan**

**Reporters:** Uzma Khan, Faisal Farid and Campbell Murn

The Gyps Vulture Conservation Centre at Changa Manga has an attached service building, storage facilities, and provision for office. The aviary has a capacity of approximately 30 vultures. There is a plan to develop breeding aviaries (four have already been developed), arranged in a manner that all the pairs are able to see each other that would help in synchronising breeding.

The Vulture Conservation Centre is located in a secluded area of Changa Manga forest, which is approximately 80km southwest of Lahore. There is currently one large holding aviary. It is 38m long and increases in width from 14m to 27.5m. Construction materials consist of 150mm steel pole supports and welded steel frames on a concrete base. The walls and roof are chain link.

Within the aviary, perch types consist of live trees in addition to a number of artificial perches. One end of the aviary contains a roosting/nesting ledge, which runs the width of the aviary. This also provides shade and shelter for the birds. Additional shade cloth on the aviary roof provides sun protection over a smaller area near the water pool.

Within the aviary, potential breeding birds have access to artificial nest sites (shallow woven baskets) and nests retrieved from the wild. These have proved popular already with the birds, and may provide an additional stimulus for courtship and/or breeding behaviour. The roosting/nesting ledge in the aviary is fitted with partitions to provide separate areas for potential breeding pairs.

There is an attached service building, storage facilities, and provision for office space. The aviary has a capacity of approximately 30 vultures.

The birds are fed on variety of equine based food and further there is breeding of goats (23). The animals that are bought and kept alive for a week before they are fed to the birds. This is done to ensure that if injected with any Diclofenac prior to acquisition is excreted out of the body. The bones

are processed into small fragments to supply the birds with all essential nutrients. The visceral organs are also included in the diet. Regularly birds are also given whole carcass for behavioural enrichment. The food animals have a large area to roam around free and it is ensured that high welfare standards are maintained. The fodder for the animals is also grown within the area so the whole system works sustainably.

In May 2007, there were eleven vultures in the facility. Five were collected as chicks from nests during the 2005/2006 breeding season, with one additional bird collected during the 2006/2007 season. The remaining five vultures are older, and are the remainder of the captive population used during Diclofenac toxicity testing work by the Peregrine Fund. In 2009, three nestlings were collected, 2010, two (juvenile and chick), 2011 total 6 birds were collected in Feb and March from Sindh. Facility has 19 birds, three mortalities

In 2011 four pairs were established and there were five eggs laid. In 2010 two eggs were laid, one hatched and expired soon after and other died in shell.

The facility is currently setting up its incubation facilities and one egg has been laid already.

The Gyps Vulture Restoration Project has seen much attention this quarter. Due to a number of activities by the team, the project received a donation of Rs 250,000/- from Board Member Samad Dawood, as well as saw an article published in the UK newspaper The Guardian and coverage by BBC Urdu. The centre is regularly visited by small group of students, however, this is not permitted in the breeding season. We are also planning to charge some amount to the group so that it generates some funding for the centre.

International Vulture Awareness Day was celebrated at Lahore Zoo on the 1<sup>st</sup> of September. With an outreach of over 15000 people, zoo visitors were able to learn about the plight of the White-backed vulture, adopt a vulture, donate to the vulture fund along with backstage passes to Lahore Zoo's bird aviary and face painting. Altogether, the day was able to raise around Rs, 20, 000. The event was covered by all major news stations and print media.

### **Vulture Safe Zone work in Pakistan**

The project is supported by USFWS for one year and the objective is to establish a diclofenac free zone for vultures and engage with community, veterinarians liaison to ensure that Diclofenac is not used on livestock and also begin a livestock vaccination programme to help people. Moreover the project intends to test Meloxicam samples for potency and suggest improvements in the formulation and also monitor the population of vultures in Nagar Parker.

### **Education and Awareness**

Out of four workshops scheduled within the project duration. One workshop has been held with an attendance of 100 local villagers and veterinary doctors. The workshop's main objective was to enlighten people about the project, the work that WWF- Pakistan carrying out in the region as well as to touch upon issues of livestock husbandry, treatment of diseases and best practice methods of burial of a carcass that has been injected with Diclofenac Sodium. The workshop was a good way to introduce the proposition of free vaccines that WWF – Pakistan will provide in the near future.

**Veterinary Doctors in Tharparkar:** A list of all clinics, dispensaries and veterinary information has been drawn up which total 291. 35 veterinary clinics and dispensaries are found in Nagarparkar alone.

### **Livestock Survey Pakistan:**

An extensive livestock survey was carried out in 32 villages to determine the diseases that the livestock is affected by to. The main findings were that amongst cows, camels, sheep, goat, donkeys and buffalos, Foot and Mouth disease is rampant along with digestive problems, Enterotoxaemia and some animals were found to have died of natural causes.

As a part of the Vulture Safe Zone education and awareness component, a workshop was held for the community and veterinarians. This was to educate the community about better management practices in treating livestock for diseases and burial methods.

### **Future plans (Pakistan)**

Organising national workshop for the development of the Vulture Conservation Strategy.

Fund raising for the Vulture Conservation Centre, enhancement, increasing the group size of birds, carrying on the VSZ work.

Enhancing facilities (electricity backup, small jeep or pick up)

Incubation facilities

Survey of the known colonies

## **25. Public relations in India.**

**Reporters:** Atul Sathe, Janki Teli

Vulture BNHS RSPB coverage (a total of 93 times) in the past three months (August-October 2012) including 27 for Hyderabad COP vulture events and 35 for aceclofenac. These were mainly in Indian and some foreign media, both print and electronic. There was also considerable coverage earlier in the year, particularly of the Plosone paper showing that diclofenac levels. Full list of links and media cuttings available from Atul Sathe, Janki Teli or via SAVE.

## **26. Public relations in Nepal.**

## **27. Public relations in Europe.**

**Reporter:** Chris Bowden

Press and media coverage in Europe has been slightly lower than during the previous year, and it has been noticeable that the relative coverage within South Asia has been correspondingly higher – perhaps partly due to CoP being in Hyderabad, but also of the aceclofenac paper which achieved exceptionally good coverage within India. There have still been more than 40 items tracked in European press over the period but no major TV or documentaries.

## **28 Reports on fundraising by all SAVE partners for SAVE priority work**

### **28.1 RSPB Fundraising Update**

**Reporters:** Michael Krause, Hannah Ward

#### **Introduction**

The plan developed at the 2011 SAVE meeting was to look for ways of funding the expenditure of the current work programme and look at options for expanding our work to create safe zones. We agreed that we should look for ways to work together more. We need large sums to expand our work and a series of smaller donations to support the existing activities which are drawing from scarce core funding.

The difficulties in fundraising we discussed in Pinjore have not gone away. There are considerable challenges in packaging existing work for grant funders which want to support new projects and in selling a species which has a niche appeal to other donors, including businesses and trusts. Fundraisers, however, are not dispirited by setbacks and we have successes since we last met.

#### **Current funding approaches**

Grant awards have been made by Save our Species (£127k over two years) and LA Zoo (3k). We have continued to manage the relationships with major donors who fund our core work and with Boehringer Ingelheim. We met them in September to discuss options for their future support and are hopeful this is looking very promising for a substantial level of support, but nothing is yet confirmed. Rather disappointingly, a recent application to the UK Darwin Initiative was unsuccessful, which highlights the continued challenges in securing large sources of income for this programme from grants (particularly for ongoing work).

We continue to talk to potential corporate supporters about our vulture work. The vulture 'niche' does interest some businesses. We have a verbal agreement with Exodus (a wildlife holidays company, UK based) that they will direct support SAVE through a commercial partnership. Initially this will span 2 years against which the target is £70k in income to be achieved through a combination of a. Royalty payment linked to bookings. Estimated at 8% of average booking value £1700 and b. Topped up by their eco foundation which will nominate SAVE as one of their 12 partner projects. This has recently been confirmed which is good news but full details still to be finalised.

After our commitment to working more together, we have followed up UK leads provided by SAVE partners. All whom have been happy to talk and forward information but none of these has led to income. We are continuing to follow up with Tata companies in the UK. There are also joint efforts to engage the Tata foundations in India.

The online SAVE fundraising button has received £2,650 by October 2012.

Please see Table 1 for an overview of RSPB fundraising for the Vulture Project.

#### **The Global Environment Facility**

At Pinjore, we discussed a possible GEF medium sized bid and agreed to develop plans in partnership with IUCN. Chris circulated the following positive news after a meeting in Delhi in May.

The mandate for writing a GEF proposal to include activities in all 4 countries, with a total budget expected around \$15 million. IUCN to write and host this (Scott Perkin charged with responsibility based in Bangkok office). We all hope that this will develop, and if so the likely timing is submission in late 2013 for start date in 2014. This proposal needs a strong cultural and socio-economics component as well as the actions outlined within the declaration.

### **Lessons learned**

We may well have guessed the following this time last year but from our experience over the last few months, we can conclude –

- We may not be able to continually rely on grant income to support this programme. Grant funding opportunities will still be available, but these will be largely for extending our work.
- Working as a partnership will be the best way to secure funding
- We can continue to bring in smaller sums to cover core contribution
- There are opportunities for medium level corporate and foundation support. We have a recognition framework for potential corporate supporters giving beyond the current BI level – *Supporting Partners*. We should develop some short guidance on how supporting partners can use this status in their own communications

**Table 1: RSPB fundraising summary 2012-2015**

Date	Funder	Request Amount £			Confirmed Amount Total £			Progress/Action
		2012/13	2013/14	2014/15	2012/13	2013/14	2014/15	
<b>Grants</b>								
Apr-12	Save our Species	68768	58336	0	68768	58336	0	Project started April 2012
Jun-12	LAZoo	3215	3215	3215	3215	0	0	Successful
Jun-12	Zoo Boise Conservation Fund	19000	0	0	0	0	0	Application submitted
Aug-12	Darwin initiative post project	0	75000	75000	0	0	0	Unsuccessful
Jul-12	WCS fellowship	12800	0	0	0	0	0	Rolled to next year July 2013
Sep-12	Riverbanks and Garden Conservation Fund	0	3215	0	0	0	0	Application submitted
<b>Trusts and Foundations</b>								
Ongoing	UK Trusts and Foundations (eg Rufford)	30000	30000	30000	20000	0	0	
Ongoing	Tata foundation	25000	25000	0	0	0	0	Homi approaching via BNHS
Jul-12	Loke Wan Tho Memorial Fund	10000	0	0	0	0	0	Application submitted
<b>Corporates</b>								
Ongoing	IKEA	0	0	0	0	0	0	
Ongoing	Boehringer Ingelheim	16025	0	0	16025	0	0	Meeting scheduled with BI for further support

Ongoing	Unilever	0	0	0	0	0	0	
Ongoing	Ecover	0	0		0	0	0	
Ongoing	Reckitt Benckiser	0	0	0	0	0	0	
Ongoing	Homepride	0	0	0	0	0	0	
Ongoing	Patak's	0	0	0	0	0	0	
Ongoing	Exodus	20000	20000	0	20000	20000	0	Figures dependent on sales
<b>Individuals</b>								
Ongoing	Individual donations	0	0	0	4322	450	0	
Ongoing	SAVE button online donations	0	0	0	2650	0	0	
<b>Other</b>								
Sep-12	Vulture Curry for IVAD	0	0	0	641	0	0	

Totals	Request Amount Target £			Confirmed Amount Total £		
	2012/13	2013/14	2014/15	2012/13	2013/14	2014/15
	204808	214766	108215	135621	78786	0
<b>RSPB anticipated expenditure</b>						
	2012/13	2013/14	2014/15	2012/13	2013/14	2014/15
	3	4	5	3	4	5
	408952	499899	613457			

## 28.2 BNHS Fundraising Update (see 29 below)

## 28.3 BCN Fundraising Update – (see 30 below and Report no. 8)

information available in newsletter

## 28.4 ICBP Fundraising Update

Reporter; Jemima Parry-Jones

1. Number of funding proposals submitted – <i>one proposal to NBPT</i>
2. Number of successful funding proposals - <i>successful</i>
3. For successful applications, please describe areas of work, duration, and approximate total funding received or expected - <i>application made to finish the fourth colony aviary at Pinjore. £2200 which will complete the aviary by the end of November in time to move birds before the breeding season</i>
4. Any additional core funding or in-kind support given by your organisation – <i>two staff spent one week in Pinjore teaching a workshop on incubation to staff from India, Nepal and Pakistan, Then four days in Nepal at Chitwan, advising and helping with the new enclosure and planning and moving birds. Also note that NBPT last year granted funds (to RSPB) to cover travel costs of ICBP technical visits some of which has been spent this year</i>
5. Communications – number of web links from your own website to the SAVE website <i>Several links and a whole page on our website, along with five video clips of the centre and vulture chicks</i>
6. Please also add mention of any other ways in which your organisation has been able to highlight SAVE activities or priorities. <i>Helped with veterinary support, management guidelines, and general email advice on a regular basis</i>

## 28.5 NTNC Fundraising Update – information awaited [no report available]

## 28.6 ZSL Fundraising (and other activities) Update

Reporter: Nick Lindsay

### 1. Disney Worldwide Conservation Fund

The final activity of the grant received by ZSL from the DWCF was completed in November 2011 with the visit to the Bird Conservation Nepal programme on Vulture Safe Zones in Kailali, West Nepal by one of the senior education staff, Rebecca Day, who specialises in CEPA projects.

### 2. Mohamad bin Zayed Species Conservation Fund

The final expenditure of funds granted to ZSL by the MbZ SCF was made with the construction and equipping of the new laboratory at the Vulture Conservation Breeding Centre in Chitwan.

### 3. International Vulture Awareness Day 2012

ZSL again participated in the IVAD initiative by celebrating over the weekend of the IVAD at both zoos. During the 2 days over 10,000 people visited to London and Whipsnade Zoos having the chance to learn

more about the plight of vultures in South Asia and of the work now being undertaken under SAVE in Nepal and India, in particular.

About £2,500 were raised by the keepers over the weekend which will be used to support the vulture programme in Nepal.

#### **4. John Ellis In Memoriam Donations**

John Ellis, ZSL Senior Curator of Higher Vertebrates, tragically died in 2012. At the request of his family donations were made by friends and family to the vulture programme in Nepal because of John's great passion for this programme. Currently approximately £3,000 has been raised.

#### **5. RSPB Funded Veterinary Intern**

RSPB provided ZSL with funds to employ and then manage a 2<sup>nd</sup> veterinary intern for a 6 month project in India and Nepal with the aim of providing veterinary expertise to the programme at a time when there was a shortage of local vets.

As with the previous intern this proved to be a successful initiative although, as ever with such a project, there were some issues. However, Thalita Calvi spent an extended period at the bird rescue centre in Ahmedabad, undertook health checks in Nepal, advised local staff on the care and management of the vultures and advised on the equipment for the new lab and trained staff on its operation. Thalita was also able to support Dr Prakash's initiative with the workshop in Pinjore for biotechnicians and vets.

Thalita produced monthly reports, a final report, an update of the veterinary manual and data on vultures at the centre in Chitwan.

ZSL provided veterinary advice through Andrew Routh, Head of Veterinary Department at ZSL and all administration requirements for Thalita.

#### **6. Veterinary Expertise and Advice**

ZSL provided veterinary expertise to programme staff in India and Nepal (and the UK) through the year, primarily through Andrew Routh.

It was felt that more could have been done if the flow of information and communication was better.

Unfortunately a number of the vets working on the programme left during the year and with it the knowledge and experience developed in that time and in previous years. This is a major issue for the long-term management of the centres in particular.

#### **7. Deep Freeze in Raja Bhat Khawa**

The walk-in deep freeze funded by the National Birds of Prey Trust by a grant to ZSL was commissioned in 2012 and was proving to be a useful piece of equipment both through the reassurance that feed was available for the vultures and through the reduction of feed costs. Thalita Calvi helped develop a protocol for meat inspection and storage.

#### **8. Management Guidelines for Gyps Vultures**

ZSL contributed with others to the production of the revised management guidelines.

#### **9. Grant Applications**

No grant applications were made in 2012 as this is not an easy task if there are no projects or objectives available which can be used in any application.

## 28.7 HCT Fundraising Update

Reporter: Campbell Murn

<b>1. Number of funding proposals submitted</b> Three
<b>2. Number of successful funding proposals</b> Three
<b>3. For successful applications, please describe areas of work, duration, and approximate total funding received or expected</b> All three applications were to funding partners and funds were allocated towards the running costs of the breeding facility at Changa Manga. Each amount is only £1000 and is designated for use in one year. All funds are administered by the Hawk Conservancy Trust and transferred on a regular schedule to WWF-Pakistan.
<b>4. Any additional core funding or in-kind support given by your organisation</b> The Hawk Conservancy Trust provides £10,000 per annum to run the Gyps Vulture Restoration Project in Pakistan. During the course of any one year, we make additions contributions (related to unexpected expenses or new activities – e.g. short field surveys) of up to £2,000. The Trust also administers funds from a fundraising partnership of donor organisations – variable in amount from £5,000 to £15,000 per annum.
<b>5. Communications – number of web links from your own website to the SAVE website</b> There are three links to the SAVE website from the Hawk Conservancy Trust website. They are in different places, but all under the subject area of vulture conservation
<b>6. Please also add mention of any other ways in which your organisation has been able to highlight SAVE activities or priorities.</b> SAVE gets mentioned to visitors to the Trust during educational talks about vultures, in talks to outside groups and on International Vulture Awareness Day.

## 28.8 WWF Pakistan Fundraising Update

Reporter: Uzma Khan

<b>1. Number of funding proposals submitted</b> USFWS submitted two consecutive years, received last year 2011  Small Grants Programme of WWF – Pakistan for survey  NBPT  Darwin Initiative twice (GBP 40 K over three years) and rejected both times
<b>2. Number of successful funding proposals</b> Small Grants Programme of WWF – Pakistan for survey

NBPT cofinancing for the survey USFWS 23,000 USD
<p><b>3. For successful applications, please describe areas of work, duration, and approximate total funding received or expected</b></p> <p>Vulture Safe Zone, ending Dec 2012, USD 23,000 area of work is Nagar Parker in Sindh Pakistan which is last stronghold of vultures in Pakistan.</p>
<p><b>4. Any additional core funding or in-kind support given by your organisation</b></p> <p>Main support comes from the Hawk Conservancy Trust</p> <p>Rs. 250,000/- donated to the project by a WWF Board Member</p> <p>Rs. 10,000 raised by the a school</p> <p>Rs. 30,000 raised at IVAD through individual donations</p>
<p><b>5. Communications – number of web links from your own website to the SAVE website</b></p> <p>WWF – Pakistan website is linked to SAVE, IVAD, HCT</p>
<p><b>6. Please also add mention of any other ways in which your organisation has been able to highlight SAVE activities or priorities.</b></p> <p>We have highlighted SAVE with the Government of Pakistan in both Sindh and Punjab provinces to push for the establishment of the vulture safe zone and initiate in situ conservation initiative. WWF is also planning to organise a country meeting where we would like to highlight SAVE priorities.</p>

## 28.9 The Peregrine Fund Fundraising Update

**Reporter:** Munir Virani

No grant applications submitted or received during the period.

Work carried out was covered by core unrestricted TPF funds.

## 28.10 WCS Fundraising Update

**Reporter:** Simon Mahood

<p><b>1. Number of funding proposals submitted:</b></p> <ul style="list-style-type: none"> <li>- Ongoing vulture conservation activities: USFWS Critically Endangered Species Fund</li> <li>- Ongoing vulture conservation activities: Critical Ecosystem Partnership Fund/BirdLife in Indochina</li> <li>- Red-headed Vulture research: Munster Zoo</li> </ul>
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<p><b>2. Number of successful funding proposals</b> One, from the Critical Ecosystem Partnership Fund/BirdLife in Indochina</p>
<p><b>3. For successful applications, please describe areas of work, duration, and approximate total funding received or expected</b> Area of work: Advocacy to prevent poisoning, vulture restaurants and quarterly census at four sites (Preah Vihear Protected Forest, Western Siem Pang, Seasan ACCB and Lomphat Wildlife Sanctuary), nest protection at three sites.  Duration: November 2012-July 2013.  Funding: \$19,880.7</p>
<p><b>4. Any additional core funding or in-kind support given by your organisation</b> In kind: Salary of Project Coordinator and Technical Advisor support, office.</p>
<p><b>5. Communications – number of web links from your own website to the SAVE website</b> None – hyperlink being established.</p>
<p><b>6. Please also add mention of any other ways in which your organisation has been able to highlight SAVE activities or priorities.</b> We are working to integrate SAVE priorities, where applicable, into Cambodian Vulture Conservation Project activities.</p>

## 29. The Number and successful Applications for Fund Raising in India (BNHS)

Reporter: Vibhu Prakash

<p><b>1. Number of funding proposals submitted: 3</b></p>
<p><b>2. Number of successful funding proposals: 1</b></p>
<p><b>3. For successful applications, please describe areas of work, duration, and approximate total funding received or expected</b> Total Funding Expected is Rs. 57 Lakhs (Rs. 5700,000) of which about 28 Lakhs(Rs. 28,00,000/-) is for vulture food, 25 Lakh (Rs. 25,00,000/-) for fencing and boundary wall of Vulture Centre at Pinjore and 4 Lakh (Rs. 400,000/-) for a new Generator</p>
<p><b>4. Any additional core funding or in-kind support given by your organisation</b></p>
<p><b>5. Communications – number of web links from your own website to the SAVE website: Two</b></p>
<p><b>6. Please also add mention of any other ways in which your organisation has been able to highlight SAVE activities or priorities.</b>  All BNHS pamphlets for Vulture awareness programme has SAVE logos as well as on all powerpoint presentations.</p>

**30. Fundraising in Nepal.** See item 8.

**31, 32 & 33. VULTURE ADVOCACY, POPULATION SURVEYS AND NSAID MONITORING AT NATIONAL LEVEL IN BANGLADESH**

**Reporters:** M. Monirul H. Khan and Enam UI Haque

Vulture advocacy has started in Bangladesh much later compared to the neighbouring countries. Actions taken in Bangladesh after the last SAVE meeting in India include celebration of the International Vulture Awareness Day in Dhaka and Sylhet (in September 2012). Availability and use of veterinary diclofenac in Bangladesh have been declining in response to the official ban on the use and production of veterinary diclofenac and introduction of meloxicam. Much, however, needs to be done to purge the illegal sell and use of it.

Bangladesh Forest Department is planning for a major awareness programme in Srimangal, northeastern Bangladesh, which is a key area for vulture conservation. Moreover, it has prepared a proposal to submit to Strengthening Regional Co-operation for Wildlife Conservation Project of the World Bank for funding to establish vulture restaurant and monitor vulture population in the northeastern Bangladesh. IUCN-Bangladesh has prepared a proposal to monitor vulture population and establish Vulture Safe Zones in Bangladesh, but yet to submit anywhere for funding.

In August 2012, the philately department of Bangladesh Postal Service has released a commemorative stamp and First Day Cover (designed by Enam UI Haque) on the Critically Endangered White-rumped Vulture. With the commemorative stamp on vulture the Postal Service distributed a leaflet (in Bengali and English) with the following text: 'White-rumped Vulture is the most familiar carrion-eater of Bangladesh. Although no pathogen in the festering carcass could ever harm it, a veterinary drug named diclofenac is killing it by the millions. Whenever it eats dead cattle with traces of diclofenac, it dies of kidney failure. Only a few hundred vultures survive in Bangladesh now and it has been declared a Critically Endangered bird of the world.'

Two important meetings regarding the vulture conservation in Bangladesh have been scheduled in November 2012 when Mr. Chris Bowden will be in Dhaka: one in IUCN-Bangladesh and another in Bangladesh Forest Department. Hopefully, new programmes will be developed after these meetings. Mr. Bowden will also discuss with the members of Bangladesh Bird Club regarding the vulture situation in Asia.

Mr. Enam UI Haque of Bangladesh Bird Club has prepared a documentary film on vultures that has been shown in different programmes to raise public awareness for vulture conservation (a shortened version of it is scheduled to be shown in the SAVE meeting, Kathmandu, on 06 Nov 2012).

Mrs. Tania Khan and Mr. Munir Ahmed (members of Bangladesh Bird Club), together with two local assistants are currently monitoring a roosting and nesting spot of the White-rumped Vulture in Moulvibazar, northeastern Bangladesh. They have produced a poster and a leaflet to aware people for vulture conservation and are preparing for conducting awareness programmes.

Dr Monirul Khan is producing a small book on the White-rumped Vulture in Bangladesh (to be presented in the SAVE meeting, Kathmandu, on 06 Nov 2012), which will be distributed for free to the relevant Government departments, media, bird conservationists and other relevant institutions and personnel.

Based on the findings of the last four years of the study of the White-rumped Vulture, Dr Khan has produced a scientific manuscript (submitted for publication) to aware the scientific community regarding the status of vultures in Bangladesh. The abstract of that paper is given below –

The population of the White-rumped Vulture *Gyps bengalensis* in Bangladesh has declined very rapidly in recent years, so a research-cum-conservation project was launched in July 2008 that continued until June 2012. A total of three species of vultures was found during the survey, viz. White-rumped Vulture *Gyps bengalensis*, Himalayan Vulture *Gyps himalayensis* and Cinereous Vulture *Aegypius monachus*. Total population of the White-rumped Vulture in suitable habitats across the country shows that the population has drastically declined from 1,972 to 816 (nearly 60% declined) in four years. Based on nesting colonies and frequent sightings of vultures a total of six hotspots were identified in Moulvibazar, Habiganj, Haor Basin, Mymensingh, Sundarbans (northern end) and Barisal areas. In two consecutive breeding seasons only five out of 32 and eight out of 31 nests were successful in producing fledglings (one from each nest). The overall breeding success was very low (15.6-25.8%). The reason for very low breeding success was sudden death/disappearance of parent birds, apparently due to poisoning by cattle medicine diclofenac. The project identified the poisoning as the principal cause for vulture decline. Although the Government of Bangladesh has banned the veterinary diclofenac from 25 October 2010, 53% of the veterinary drug stores still sell it illegally. The awareness campaign has made people aware of vulture conservation and the adverse effects of diclofenac.

### **34 & 35. Cambodia Vulture Conservation Project - SAVE update 2012 including population surveys, actions and advocacy**

**Reporter:** Simon Mahood

This report summarises vulture conservation activities conducted by the Cambodia Vulture Conservation Project during 2012. The Cambodian Vulture Conservation Project (CVCP) is led by the Wildlife Conservation Society (WCS). The CVCP is a collaboration between five NGOs, namely, WCS, BirdLife International, World Wide Fund For Nature (WWF), Sam Veasna Centre (SVC), Angkor Centre for the Conservation of Biodiversity (ACCB) and two government institutions, namely the General Department of Administration for Nature Conservation and Protection (GDANCP) of the Ministry of Environment (MoE), and the Forestry Administration (FA) of the Ministry of Agriculture, Forestry and Fisheries (MAFF).

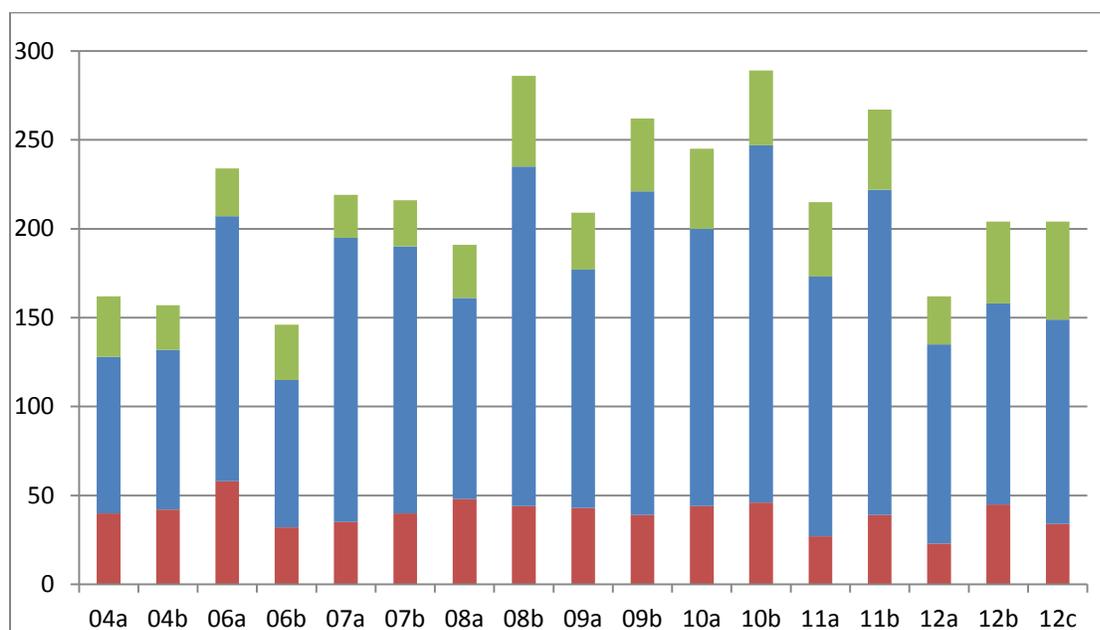
The population of vultures in Cambodia is small, but probably stable. There is no use of diclofenac and other NSAIDs in Cambodia. In Cambodia vultures are poisoned accidentally when they feed on the bodies of stray dogs which have eaten poisoned bait, or when they feed on the carcasses of animals that have drunk from waterholes where poison has been used to catch fish or waterbirds. Vultures in Cambodia are also threatened by loss of nesting trees and a paucity of food. Vultures prefer to nest in the tallest trees, and these are typically the most valuable timber trees. Cambodia's vultures are thought to be food-limited, owing to an almost complete loss of natural prey and an ongoing decline in populations of free-ranging domestic cattle.

Owing to a funding shortfall project activities consisted primarily of monitoring, protection of vulture nests and provision of supplementary food. Regrettably, no awareness raising activities aimed at preventing poisoning were conducted. A paper detailing status, threats and conservation of Cambodia's vultures from 2004-2008 was published: Clements, T., Gilbert, M., Rainey, H. J., Cuthbert, R., Eames, J. C.,

### Monitoring of vulture populations

The annual June census was conducted as normal (two restaurants at each site on the 10<sup>th</sup> and 20<sup>th</sup> June). 163 vultures were recorded on the first census and 207 vultures were recorded the second (bars 12a and 12b in Figure 1). Local reports suggest that there were a large number of domestic cattle carcasses also available during June (owing to disease) and this probably accounts for the relatively low numbers of vultures recorded. The mean number of vultures recorded at a vulture census between 2008-2011 was 216. Data therefore indicate that the vulture population remains stable.

Owing to the need to improve the resolution of census data another vulture census was conducted in September. The September 2012 vulture census recorded 204 vultures (bar 12c in Figure 1). From September 2012 vulture censuses will be conducted quarterly, in March, June, September and December every year.

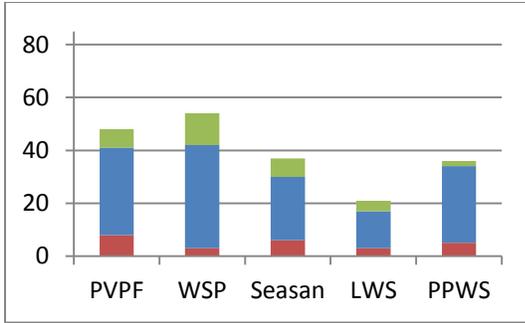


**Figure 1. The number of vultures recorded at the two annual June censuses**

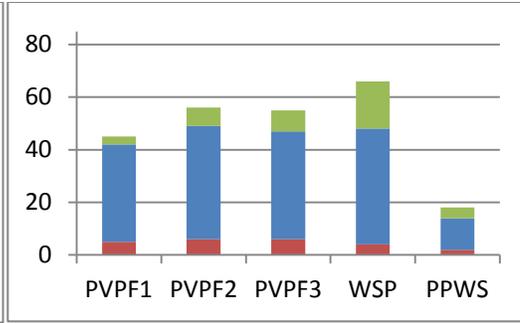
*Note: Red represents Red-headed Vulture, blue is White-rumped Vulture and green is Slender-billed Vulture; numbers on the horizontal axis refer to years, abbreviated for reasons of space.*

### Provision of safe food at vulture restaurants

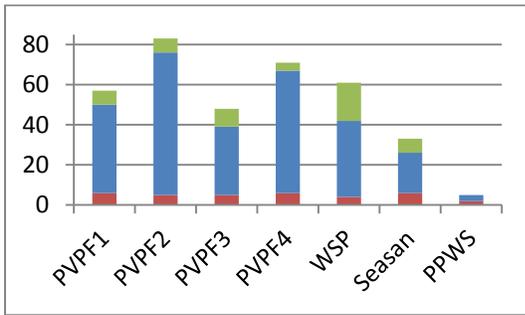
Vulture restaurants were conducted in at least three of the six sites monthly. During the dry season at Preah Vihear Protected Forest tourist groups organised by SVC sometimes implemented more than one restaurant each month. For the first time, for two months of the year (May and June 2012) a vulture restaurant was conducted in seasonally flooded forest in the central section of the Mekong.



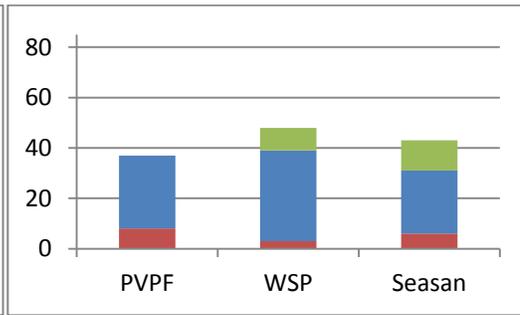
January 2012



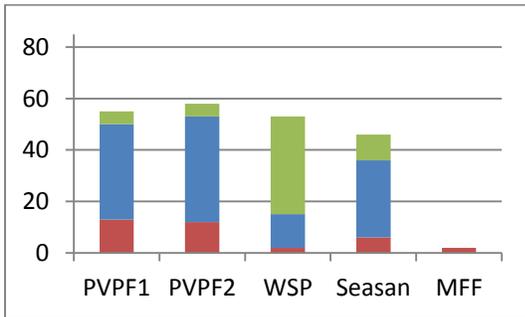
February 2012



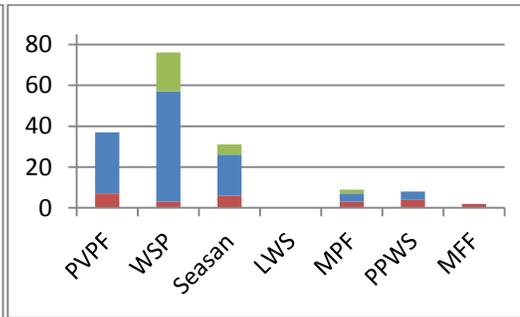
March 2012



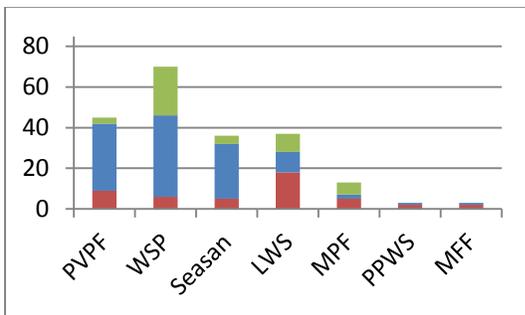
April 2012



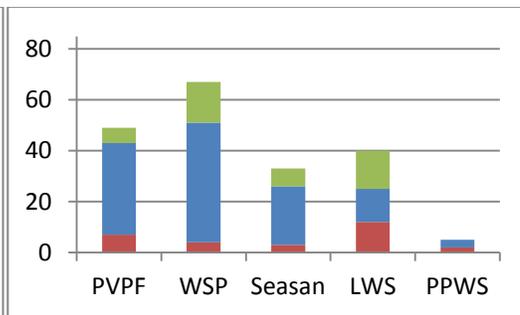
May 2012



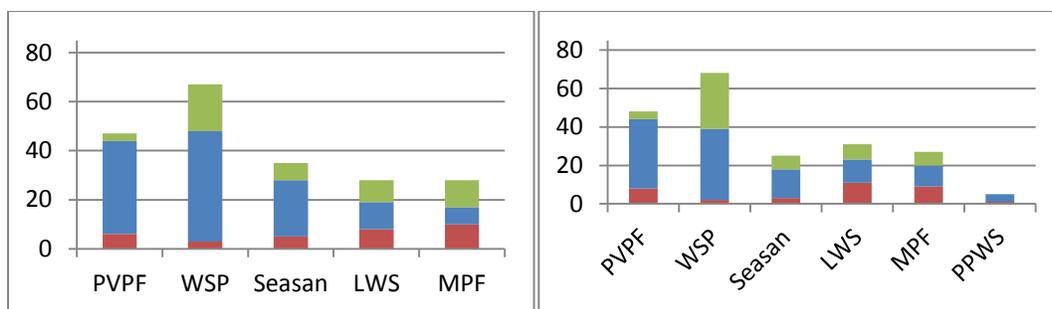
June 10<sup>th</sup> 2012



June 20<sup>th</sup> 2012



July 2012



August 2012

September 2012

**Figures 2-11. The number of vultures recorded at restaurants in 2012**

*Note: Red represents Red-headed Vulture, blue is White-rumped Vulture and green is Slender-billed Vulture; PVPF Preah Vihear Protected Forest, WSP Western Siem Pang, Seasan Seasan ACCB, LWS Lomphat Wildlife Sanctuary, MPF Mondulkiri Protected Forest, PPWS Phnom Prich Wildlife Sanctuary, MFF Mekong Flooded Forest.*

### Nest Protection

During 2011-2012 the CVCP protected thirteen vulture nests. The overall success rate was 85% (Table 1). All successful nests hatched one chick. The two nests that failed did so due to logging of nearby trees. The nest protection protocol will be refined for the 2012-13 season to ensure that disturbance is minimised close to vulture nests.

**Table 1. Vulture nests protected in 2011-12.**

Species	No. nests	No. fledged	Success rate
Red-headed Vulture	3	1	33%
White-rumped Vulture	7	7	100%
Slender-billed Vulture	3	3	100%
<b>Total</b>	<b>13</b>	<b>11</b>	<b>85%</b>

### Red-headed Vulture Research

Because the area of superficially suitable habitat for nesting vultures is vast there is a need to refine nest search criteria. Slender-billed and White-rumped Vultures are semi-colonial; in contrast, Red-headed Vulture usually nests singly. Data on the nesting characteristics of these three species, summarised here, was collected during the 2010-11 nesting season.

All three species prefer to nest in tall trees, often of the family Dipterocarpaceae, and these are often located on steep slopes or in riparian habitats. Unlike the other two species, Slender-billed Vultures were not found nesting close to rivers. The shortest tree which vultures were found nesting in was 26 metres tall, although most were in trees that exceeded 40 metres in height. Red-headed Vulture nest trees always had abundant lianas.

Vulture nests are located relatively far from villages, largely due to the felling of suitable nest trees close to villages (for timber), higher disturbance rates and perhaps higher nest failure rates closer to villages, owing to incidental predation of chicks. The mean distance of vulture nests to villages was 14.5 km (range: 1.8 - 27.2 km). Similar trends were noted regarding distance to roads: mean 10.1 km, (range: 0.5 – 21.8 km).

Using these data, Pech Bunnat was able to use a GIS analysis to predict suitable nest sites for vultures in the vicinity of existing vulture nests. Unfortunately, ground-truthing of these data did not reveal any new vulture nests, although relatively little time could be allocated to searching.

### **Priorities for 2013**

- Conduct advocacy in the vicinity of vulture restaurants to prevent incidental poisoning of vultures
- Re-establish poisoning reporting network around key sites
- Continue quarterly monitoring of vulture population
- Continue supplementary feeding
- Protect all known nests
- Publish a paper in a peer-reviewed journal detailing vulture status in Cambodia for 2009-2012.

### **Acknowledgements**

The Cambodia Vulture Conservation Project wishes to thank all its donors and supporters, including (but not limited to) BirdLife *in Indochina*/Critical Ecosystems Partnership Fund<sup>2</sup>, Bob King and Angkor Centre for the Conservation of Biodiversity and their donors and supporters (Allwetterzoo Münster, ZGAP, CEPA, Zoo Berlin, Zoo Heidelberg, Zoofreunde Wuppertal and Eva-Mayr-Stihl-Stiftung).

## **36. Survey and research to investigate the status and threats to the red-headed vulture**

**Reporter:** Toby Galligan

At the first SAVE meeting (Pinjore 2012), the TAC discussed the need to investigate the decline in the red-headed vulture. It was agreed that analysis of recent road transect data from India would determine whether the decline has continued and whether preparation for *ex situ* conservation should begin; and that a satellite telemetry study, enabling the retrieval of dead individuals for post mortem examination, would enhance our understanding of the species ecology, biology and cause of decline. To these ends, Rhys Green and Vibhu Prakash were asked to analyse the recent road transect data and Toby Galligan was asked to establish the satellite telemetry study.

Analysis of recent road transect data is now complete. The analysis was done by Toby Galligan under the guidance of Rhys Green, Vibhu Prakash and Richard Cuthbert.. The population trend is similar to that seen in *Gyps* species India and Nepal; and like these estimates, those for the red-headed vulture are imprecise as a result of the current small population. Alternatively, the red-headed vulture may be responding positively to reductions in diclofenac prevalence in domestic livestock. This data, along with similar data for the Egyptian vulture, will be prepared for publication in the upcoming months.

Satellite telemetry research will begin immediately following the second SAVE meeting. Efforts to attract external funding have so far been unsuccessful. However, internal RSPB funding has enabled the study

to commence. Toby Galligan and Vibhu Prakash will pilot the study by trapping and tagging four individuals close to Pinjore and the Jim Corbett National Park. These individuals will be regularly monitored remotely and on-ground to collect data on range, habitat and territory; feeding, roosting and nesting sites; and cause of death. Following the success of the pilot study up to six birds will be tagged in Nepal. Applying for external funds will continue.

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*Note – see also Cambodia report above of Red-headed vulture*

## 7. List of Acronyms and abbreviations

BCN	Bird Conservation Nepal
BNHS	Bombay Natural History Society
DNPWC	Department of National Parks and Wildlife Conservation
FACC	Fundraising, Advocacy and Communications Committee (of SAVE)
HCT	Hawk Conservancy Trust
ICBP	International Centre for Birds of Prey
IUCN Nep	International Union for the Conservation of Nature Nepal
IVRI	Indian Veterinary Research Institute
LBV	Long-billed Vulture
NTNC	National Trust for Nature Conservation
OWBC	Oriental white-backed vulture (=white-rumped vulture)
RHV	Red-headed vulture
RSPB	Royal Society for the Protection of Birds
SBV	Slender-billed vulture
TAC	Technical Advisory Committee (of SAVE)
TPF	The Peregrine Fund
WCS	Wildlife Conservation Society
WWFPak	WWF Pakistan
ZSL	Zoological Society of London

*Report compiled and edited by Chris Bowden, SAVE Programme Manager*

*8 February 2013*