Final Report

Conservation of Vultures
in
Mahuva and Rajula Tahsils of Bhavnagar and Amreli Districts, Gujarat

Submitted to
Small Grant Programme, WWF-India, New Delhi

Chief Coordinator

Ms. Ruchi G. Dave
Vulture Cell
Bird Conservation Society, Gujarat (BCSG), Mahuva
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ACKNOWLEDGEMENTS

“The Masters of Sky” is appropriate quote for Vultures. I am very much privileged getting opportunity to study these ‘Masters of Sky’ and their conservation. The way the White-backed Vultures were declining in our area, it was difficult to take up conservation programme for them without the help I have received from several volunteers, experts, governmental and non-governmental institutes, etc. I would like to thank the individuals and organizations who have made it possible to implement the project.

I am grateful to the World Wide Fund (WWF), India for approving this project proposal and providing financial support through Small Grant Programme (SGP) to carry out this laborious vulture conservation activity. Without the financial support it would have not been possible to provide ‘Diclofenac-free’ carcass (food) to the thriving vulture population for a period of more than nine months. We are especially thankful to the WWF authority for giving us an opportunity to prove that ‘Food assurance’ is the only solution to prevent further decline of vulture population. I am thankful to ‘Small Grants Programme Coordinator’, WWF for facilitating my entire project. I especially thank Dr. Parikshit Gautam, Director-Wetlands (WWF) for his special interest in progress of this project.

I am grateful to Dr. Bakul Trivedi, Hon. Secretary, Bird Conservation Society, Gujarat (BCSG) and Shri Snehal Patel, Chairman- Vulture Cell (BCSG) for inspiring me to propose this project and its implementation. Dr. B. M. Parasharya (Jt. Secretary-BCSG) was a stickler for project implementation but nevertheless extremely helpful with all the procedures relating to research and documentation and preparation of reports.

Dr. Amit Thakkar - backbone of vulture volunteers of Mahuva; Shri Akshay Kanakiya –a volunteer of Mahuva and Shri Viral Prajapati – a volunteer of Surat Nature Club were silent and able supporters in everything concerning vulture conservation project.

I am thankful to Shri Ashvinbhai Rajyaguru, a school teacher at Asarana carcass dumping site without his help it would have been difficult for me to co-ordinate feeding site at Asarana carcass dumping site. I am thankful to Shri Paresh Nakum and Shri Ashvin Sarvaiya of Asarana village who tirelessly monitored the feeding site.

I am thankful to Shri Dayabhai Baraiya – a ‘Chamar’ of Chhapariyali village who supplied animal carcass from Chhapariyali Panjarapole for vulture feeding site and transported the same on regular basis to the feeding site. I am also thankful to Shri Sureshbhai Varu of Nageshree who accompanied me to monitor vulture nesting sites.

I express my sincere thanks to Shri Anil Gupta – a professor at IIM, Ahmedabad and his institute “Shrusti” for donating ‘coconut tree climbers’ which proved useful for climbing trees for confirming nest content.

I am deeply indebted to Dr. Vibhu Prakash, In charge –Vulture Breeding Centre, Pinjore (BNHS) and my Ph. D. guide for his guidance, positive energy and warmth that he showed all through the project, no matter how busy he was.
Shri Miland Muni, Range Forest Officer was a spirited officer who created a vibrant environment for vulture conservation in his range and connected all people working in coastal zone of Mahuva and Rajula tahsil. Local staff of the forest department was also highly cooperative. I also had a privilege to work with local and state forest department officials as ‘Hon. District Wildlife Warden’ during tenure of this project.

I am grateful to Dr Piyush Patel, Valsad who was always concerned about my work and progress. His every call provided lots of energy to me.

I learnt many lessons on professionalism from Shri Debu Bhattacharya & Shri Somdev Chatterjee- film directors from ‘Theme Entertainment’, Kolkata. I was a temperamental ‘Star’ while Debu was determined ‘Producer’. I am thankful to both of them for making a short film entitled “Drugged to Death” for ‘WITNESS’ programme of ‘Al Jazeera’ TV Channel which was filmed on my favourite White-backed Vultures around our project site at Mahuva.

Shri Snehal Patel -President, Nature Club Surat was a great source of strength and inspiration. I am thankful to Nature Club Surat for providing booklets and T-shirts for extension activity of this project. A refrigerator was provided long back for storing dead vultures till they were sent for post mortem and laboratory analysis. Nature Club Surat also provided services of Shri Viral Prajapati as when needed.

I thank Bird Conservation Society, Gujarat, through which the project was proposed and implemented.

Bombay Natural History Society, Mumbai involved me in their project on ‘drug survey of nsaid’ and on going programme of vulture monitoring. Due to parallel on going projects of two organizations, both the projects were benefited.

Least but not last I am thankful to all my family members, who in spite of being a part of orthodox society, provided full support and inspired me to continue my good work for the cause of conservation. My mother was the most supporting person and welcome whole heartily to all nature lovers from any corner of the state. My special thanks to my sister Ms Drusti Dave who is a part time lecturer of Zoology, provided full support to co-ordinate all awareness programme.
EXECUTIVE SUMMARY

Vultures Conservation Project was approved in September 2010 by SGP of WWF, India. The MoU was signed in October 2010 and the grant was released in November 2010. However, to get better results for the objectives of the project, two aspects, namely Population monitoring at breeding sites and Extension activity were started right from September 2010.

At breeding site, maximum 113 adults and 18 active nests were recorded. Due to constant monitoring, we could monitor breeding population of the vultures and the progress of nest development. Successful fledging of 16 nestlings out of eighteen (18) nests is very high breeding success. Moreover, not a single vulture (adult or juvenile) died in the project area during one year period. This could be achieved largely by running the Asarana feeding site on regular basis during the breeding period. Providing Diclofenac-free food to vultures for the time period of approximately one year in sufficient quantity made the population stable.

Over nine month’s period, the vultures regularly visited the carcass dumping site at Asarana which was sure food source. At a single time, maximum 85 vultures were recorded at the site. This is fairly a good number for one site as all the vultures of the area do not congregate to a single site for feeding. The impact a regular food source (feeding site) could be seen on the breeding success of the vultures.

We could identify more number of nesting sites of vultures with the help of school students where we run awareness programmes. We could convince people not to disturb vultures and its nests. As a result 16 chicks from nests successfully fledged. I communicated with 11738 school students through twenty four (24) programmes and ran series of programmes with coconut harvesters, veterinarians, Para-veterinarians and ‘Chamar’ engaged in de-skinning of carcasses. I organized awareness programmes for the people who are directly or indirectly involved with vulture’s nesting and feeding sites, and those associated with Diclofenac marketing and it’s user who ultimately helped in this Diclofenac removal campaign. The impact is that all chemists and the users of Diclofenac are totally aware about the lethal effect of the drug on the vultures and the legal issues involved in selling and use of this deadly drug. At present the drug is not being used anywhere in the area.

In Gujarat, there were 2135 Gyps vultures in 2005 which declined to 1065 in 2010 showing 50% decline. In the project area the decline was only sixteen (16%) over six years. (GEER Foundation, Gandhinagar). At present we have at least 113 vultures (adults) and 16 juveniles giving a figure of 129 birds. This is decline of thirty three percent (33%) over seven year’s period. Certainly, Mahuva-Rajula complex is one of the few places in the country where vulture decline is minimum and since 2007 the population size is almost stable.

To conclude, financial support for this project showed the importance of running a regular feeding site for vultures for stabilizing their population. If, more than one feeding sites are maintained where ‘Diclofenac-free’ food is ensured, the vulture population can be stabilized. The results of this project show the way for vulture recovery programme.
PROJECT DETAILS

1. **Project Title:** Conservation of Vultures in Mahuva and Rajula Tahsils of Bhavnagar and Amreli Districts, Gujarat

2. **Chief Coordinator:** Ms. Ruchi G. Dave, BCSG Vulture Cell
   36, Shree Dutt, Gujarat Housing Board, Mahuva-364 290, Bhavnagar District, Gujarat
   M- +91-99980 47734, E-mail: ruchigdave@gmail.com

3. **Proposed by:** Dr. Bakul Trivedi,
   Hon. Secretary, Bird Conservation Society, Gujarat (BCSG)
   19/414, Satyagrah Chhavni, Setallite Road, Ahmedabad – 380 015, Gujarat, India
   Tel: 079 26860882 ; Mobile: +91-98256 29587
   E-mail: drbakultrivedi@gmail.com

4. **Project Approval:** September 2010

5. **MoU Signed:** October 2010

6. **First Grant Received:** November 2010

7. **Report Period:** September 2010 to October 2011

8. **Objectives:**

   1. Population Monitoring
   2. Conservation: Offering Diclofenac-free Carcass (food) to the vultures
   3. Extension Activity:
      (a) Training to Vets & Quacks
      (b) Awareness programmes in Schools and Villages
INTRODUCTION

A sudden crash in the population size of Indian *Gyps* vultures is well documented (Prakash et al. 2003; Green et al. 2004). The pattern of population decline was almost same all over the country, including in Gujarat State. To know the status of vulture in Gujarat, a one day workshop was held by BCSG on 19th September 2004 at Anand under the title “Current Status of Vultures in Gujarat” which was attended by 425 participants. Besides the member of the society, the workshop was attended by top officials of the state forest department, including Mr. P. P. Khanna (PCCF-Wildlife) and state animal husbandry department represented by the Director, Animal Husbadry. Dr. Vibhu Prakash & Dr. Chris Bowden (BNHS/RSPB), Dr. Lalitha Vijayan & Dr. S. Muralidharan (SACON), Dr. S. M. Sateesran (vulture expert & freelance naturalist), etc also made presentations and participated in the discussion. It was concluded that White-backed Vultures (*Gyps benghalensis*) disappeared from several parts of Gujarat in 1990-1992 when the veterinary NSAID ‘Diclofenac’ was even not introduced in Indian drug market. So it was concluded that the ‘Diclofenac’ may be one of the factors responsible for the decline of vulture population of India but not the sole factor. The other important conclusion of the workshop was shortage of food for the vultures (Annexure 1). The government’s guideline to fully utilize the carcasses and not to throw them in open ground has lead to food crises for vultures. At carcass dumping sites around ‘Panjarapols’, human being also collect flesh from the dead body leaving hardly any food for the vultures.

However, small populations of vultures were surviving around large ‘Panjarapols’ in Gujarat where food was still available. Such places were in Kachchh, Mahuva/Bhavnagar, Surendranagar, Viramgam, Ahmedabad, Vav and Surat. With these facts the ‘Vulture Cell’ of BCSG started Vulture Conservation Programme at Surat in 2006 and at Mahuva in 2007 with an emphasis on following points:

1. Help government and other NGOs in removing ‘Diclofenac’ from the veterinary use by all types of extension activities
2. Provide ‘Melaxicam’- an alternate drug of ‘Diclofenac’ to the users at cheaper rate than the ‘Melaxicam’ to discourage use of the deadly drug.
3. Dump ‘Diclofenac-free’ carcasses at specific sites on regular bases to ensure food availability to the existing vulture population.

Financial support under Small Grant Programme of WWF for 2010-11 was requested to meet some of the expenditure being incurred to achieve vulture conservation objectives. Current project report relates to a small area of 75 km track between Mahuva (21° 05’N, 71°45’E) of Bhavnagar District and Rajula - Nageshree (21° 03’ 0” N, 71° 25’ 48” E) of Amreli District, in Gujarat State, India (Figure 1 & 2). The White-backed Vultures (*Gyps benghalensis*) 150+ are surviving in this area and their population size has remained almost constant over past seven years due to several conservation measures taken up by local group. Providing Diclofenac-free Carcass (food) to the vultures and creating awareness amongst veterinarians, Para-veterinary practitioners, chemists and local people (largely students) were identified as most important conservation measures. Hence the grant was asked for the same objectives. Brief details of the activities carried out during the report period are as follow:

Vulture conservation activity is being done by Vulture Cell of Bird Conservation Society, Gujarat (BCSG) and is implemented by the members as well as a large number of volunteers.
Project Area:

Geographic location: Area under this project covered Mahuva tahsil of Bhavnagar district and Rajula tahsil of Amreli district. Both adjoining tahsils are on the coast of Arabian Sea of Gujarat state, Western India.

Mahuva tahsil is western most tahsil of Bhavnagar District in Gujarat State, India. The tahsil on the edge of Arabian Sea is known for its mild weather and lush green surroundings and is famous for its coconut Cocos nucifera plantation. Main agricultural products of this tahsil are Onion, Cotton, Groundnuts, Pulses Wheat and Bajra.

Mahuva city is located at 21° 04' 59.88" N; 71° 48' 0" E. The Mahuva city has a very beautiful sea and beach located near the historical Bhavani Temple. The town is also known for wooden toys, raw onion, groundnuts, and local variety of mango known as ‘Jamadar mango’. Mahuva is home to a thriving agribusiness industry, with an emphasis on enterprises that dehydrate vegetables such as garlic and onions for use in processed foods. There are many poultry farms, both layer and broiler. Emu (Australian birds) farm has also come up recently.

Wild Life of Mahuva is also known for Vultures and Asiatic Lions. Now good population of White-rumped Vultures and more than 30 Asiatic Lions are living around. Besides White-backed Vultures, some 234 species of birds are recorded. Mahuva is the only place of the district where Jungle Babblers are found; the species has restricted and uneven distribution in the state. This is the only place of Gujarat where around 40 km long ‘BANDHARA’ (Tidal regulators are made to control salinity ingress).

Climate: Semi-arid, under the influence of south-west monsoon. Average Annual Rainfall 571 mm; Average Annual Rainy days 36 days. Three clear seasons can be distinguished: Monsoon-mid June to September; Winter-October to February; Summer- March to mid June.

Some of the distances between places in the study area are as under:
Bhavnagar to Mahuva: 90 km
Mahuva to Rajula: 34 km
Rajula to Nageshri: 17 km
Mahuva to Chhaparyali Panjarapol: 25 km
Chhaparyali to Asarana Carcass Dumping Site: 20 km

Amereli District:
Rajula tahsil of Amreli district is adjoining to the Mahuva tahsil of Bhavnagar district. Climate and agricultural practices are almost same to Mahuva tahsil. Main town of the tahsil is Rajula is situated at 21° 2'26.24"N; 71°26'55.28"E. Other important town of the tahsil is Nageshri: 20°55'17.26"N; 71°20'32.26"E.

Detailed map of the project area is given in Figure 1 and Figure 2.
People & Panjapols:

Population is largely Hindu and vegetarian. Because of their religious attitude, non-productive livestock (largely cows) are not discarded or sold to slaughter houses but kept in at Panjarapole (place where non-productive and disabled animals are maintained by religious stakeholders known as ‘Mahajans’). At Panjarapol, the cattle are maintained and even treated when sick. On death of the cattle, local ‘Chamar’s are given the carcass to remove the skin and dispose off the remaining body. Skining and disposal of body is usually done close to the ‘Panjarapols’ and hence due to ensured food availability, population of White-backed Vulture stay around. Two large Panjarapols north of Mahuva, namely Chhapariyali and Nagla maintain more than 5000 cattle and daily availability of carcasses is also very high. Similarly there are Panjarapols in Rajula tahsil also. Cultural background of the community, ensured availability of food through ‘Panjarapols’ and huge Coconut plantations as nesting substrate seems to be the major reasons for the survival of Gyps vultures in these coastal tahsils of Bhavnagar & Amreli districts in Gujarat.

Figure 1. Project area, Mahuva (Bhavnagar district) and Rajula (Amreli district) are two coastal tahsils where small population of White-backed Vulture is surviving. Carcasses are procured from the Chhapariyali Panjarapol and dumped at Asarana Dumping (Feeding) Site.
Figure 2. Project area with details of each location referred to in the report.
PROGRESS OF WORK

Approval of this project under SGP of WWF was conveyed to us in September 2010. Hence we started the activities right from September 2010 as the financial support for the same was ensured. White-backed Vultures start nesting right in early September and hence it was right time to start monitoring of breeding population of vulture. We also started extension activity as the grant was assured for this project. Details of the activities carried out during the report period are given below.

1. POPULATION MONITORING

Vulture population was monitored both at nesting sites and feeding sites. Population monitoring at nesting site gave an idea about total vulture population size in the project area, proportion of breeding and non-breeding adults and overall breeding success of the species. Population monitoring at feeding site gave an idea about the number of vultures utilizing the specially created feeding site which also emphasizes its importance for the vultures. The results are as follow.

(A) Population Monitoring At Nesting Site:

Methods
In this area, the White-backed Vultures start nest building activity in the month of August. They build nest on tall Coconut (Cocos nucifera) trees. In the same period, besides breeding pairs, some non-breeding birds also roost on nearby Coconut Trees. There are large numbers of Coconut farms in the area, often much interior from the road. Hence, nesting/roosting birds can not be located during the road transect. We consulted the farm owners as well as labourers engaged in coconut harvesting to get additional information about presence of vultures in their area. Count of vultures with active nests and other non-breeding birds roosting around gave an idea of their population size in the area. This also gave an idea about the threats to the breeding birds, nest success and population recruitment.
Vultures Nest and Roost on Coconut Trees.
**Results:**
Population monitoring started in September 2010. Total 81 adults were recorded with ten (10) active nests.

In October 2010, total Ninety eight (98) vultures were recorded, with confirmed record of only four nests. In October and November, certain area was inaccessible and presence of nests could not be confirmed. This is the only reason why confirmed nest records are less than those of September.

In November 2010, total vulture count varied between 88 and 112 (two counts) with total five (5) active nests.

In December 2010, total 112 vultures were recorded with eleven (11) active nests.

In January 2011, all the vultures left Zapodar site which is traditionally used since last 50 years (by interview with farm owner). The nesting bird also left the site.

To find out the missing vultures, we stuck labels/posters on public places to get details of missing vultures from the people and surveyed more areas with intense frequency. To increase probability of re-locating missing vultures, we gave reports in local as well as English News papers (See Appendix 2). As a result of our efforts, we found a few more nests which are reflected in the nest count of February and March 2011.

In January 2011, 88 birds and 8 active nests were recorded.

In February 2011, 112 birds and 18 active nests were recorded

In March 2011, 113 birds and 18 active nests were recorded.

In April, 6 nestlings fledge out, in 10 nests still nestlings were present in the nests whereas in two nests, two eggs failed to hatch due to unknown reason.

In May, all nestlings fledged out.

A Summary of Nests and Number of Vultures Recorded During 2010-2011.

<table>
<thead>
<tr>
<th>Month</th>
<th>No. Nests</th>
<th>No. Vultures</th>
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<tr>
<td>September 10</td>
<td>10</td>
<td>81</td>
</tr>
<tr>
<td>October 10</td>
<td>4*</td>
<td>98</td>
</tr>
<tr>
<td>November 10</td>
<td>5*</td>
<td>112</td>
</tr>
<tr>
<td>December 10</td>
<td>11</td>
<td>112</td>
</tr>
<tr>
<td>January 11</td>
<td>8</td>
<td>88</td>
</tr>
<tr>
<td>February 11</td>
<td>18</td>
<td>111</td>
</tr>
<tr>
<td>March 11</td>
<td>18</td>
<td>113</td>
</tr>
<tr>
<td>April 11</td>
<td>10 (6 fledge out) (2 eggs failed to hatch)</td>
<td>45</td>
</tr>
<tr>
<td>May 11</td>
<td>Nil</td>
<td>25</td>
</tr>
</tbody>
</table>

* Certain area was inaccessible and hence presence of nests could not be confirmed
With repeated efforts over time, total 18 active nests were on record in February 2011. The reason for hatching failure of two eggs from two nests remained unknown.

Both breeding and non-breeding vultures left Zapodar site in January 2011, leading to some nesting failure which needs special attention. We could not identify the factor responsible for desertion of the site.

Another important point is the large proportion of non-breeding vultures in the population. Considering maximum count of 113 adults, only 18 pairs (32 % birds) were actually breeding whereas remaining 77 (68%) vultures were non-breeding individuals. At present nothing is known about the age-structure composition of White-backed Vulture’s population in wild. But this is an important aspect of population dynamics and needs to be addressed properly while preparing a Species Recovery Action Plan for this critically threatened species.

Tree-climber was used to monitor nests under certain circumstances.
(B) Population Monitoring At Feeding Site / Carcass Dumping Site:

Methods:

At the feeding site monitoring was started only in November 2010 along with carcass offering activity. The area was under monsoonal influence till October – November 2010 and hence carcass offering was not possible in the area. The carcasses do not dry up quickly under humid condition and smell badly. The vegetarian community do not like decaying and smelling carcass nearby. The food offering site is not far away from the village settlement and farms. Hence, to avoid human resistance we started carcass offering only from November 2010. Giving due weightage to the feelings of local people, carcass dumping was not done under this programme during rainy period of August and September 2011. Without support of local people, it is difficult to implement any species conservation programme. However, the local people used the site for dumping carcass of their cattle during monsoon (as it was an original dumping site). This was the reason why some vultures were recorded at the site during August & September 2011, though we did not dump the carcasses.

Results:

Though the carcasses were dumped at the site at almost regular interval, number of vultures at feeding site varied greatly, from zero (0) to eighty five (85). The vulture count near nest – sites was once 113 which indicate that all the vultures of the area never came to our feeding site at a time. This is also indicative of the fact that the vultures are getting food by their self at the places other than fixed feeding site. Our field survey also supports this fact.

To provide wild animal carcass (certainly Diclofenac-free) to the vultures, we requested Forest department officials to procure carcass which is killed and left by the Asiatic Lion or Leopard in our range. At least once in a week we got such a carcass for offering to the vultures at the feeding site.

At the feeding site, we monitored vulture count regularly, almost every day through School teacher Shri Ashvinbhai Rajyaguru and volunteers staying at Asarana village.

The vulture count Table is given under the next section 2 of ‘Conservation’.
2. CONSERVATION

Offering Diclofenac-Free Carcass (Food) To the Vultures

There are two important issues involved here: 1) To ensure that we get Diclofenac-free carcasses on regular basis and 2) which can be offered to the vultures at a definite site so that they do not face any shortage of food.

We have convinced the managers of the ‘Panjarapol’ not to use ‘Diclofenac’ since 2006 when the Gujarat Government first banned its use. So Diclofenac is totally removed from the practice and the market from this area. The managers of Panjarapols have also agreed to supply the dead animals as and when the animals die for offering to the vultures at nominal cost. Now the carcasses are being transported to the newly created feeding site known as “Asrana” which is 20 km from the Chhapariyali Panjarapol.

Chhapariyali Panjarapol is the largest Panjarapol in the area, housing about 5000 cattle at a time. Obviously, daily death of the cattle is also high. The managers of the Panjarapol used to dump/clean the carcasses very close to the Panjarapol. Due to availability of food, the White-backed Vultures used to come in large number for feeding. Considering importance of the site for vultures, forest department fenced the carcass dumping site with barbed wires in a small area of 30X30 meters. This fencing had negative impact on the vultures. The vultures used to come to the site, soar above and land on the nearby hillocks. Gradually they stopped coming to the carcass dumping area. Such a phenomenon was also noticed at a Panjarapol in Kachchh. We
realized that probably the fencing is the main obstacle in landing and take off of this large bird. In spite of removal of fencing, the vultures stopped utilizing carcasses at this Panjarapol.

Chhaparyali Panjarapol where Non-productive Cattle’s are housed in Very Large Number

Hence, a new feeding site (Asrana) is selected which is closer to the roosting/nesting sites of the vultures in the study area. The feeding site is at the base of group of hills and without any enclosures/fencing. There is a primary school on one of the hill from where the feeding site can be monitored. We are getting benefit of teachers and students of the school in vulture monitoring at feeding site and other conservation activities.

Dead cattle of the nearby villages were being dumped at this site (Asrana) since quite some time and vultures used to utilize the carcasses often. Realizing importance of the site, we convinced Chamars (who are professionally engaged in disposing the carcasses) not to dump carcasses of sick cattle who had drug treatment history. When started in 2007, 1 or 2 carcasses per week were being dumped. With implementation of this project, this frequency has increased which ensures drug-free food for the vultures.

Methods:

Carcasses were collected from the Chhaparitali Panjarapol and transported through an open Auto Rikshaw to the dumping site at Asarana. Whenever available, more than one carcass was brought to the dumping site. Number of vultures visiting feeding site were counted almost every day. Maximum count ever recorded at the feeding site is shown as maximum monthly count. Carcass number dumped at the site as shown in the table are those transported from the Panjarapol and dumped at the site. We have not shown the number of carcasses dumped by the villagers or forest department at the site site.
Results:

Carcasses were regularly dumped at the feeding site since November 2010 and continued till July 2011. Total 261 carcasses were dumped at Asarana. In summer (April-July), number of carcasses dumped was more than the number dumped in winter (November to March). However, number of carcass dumping had no influence on vulture count recorded at feeding site. Minimum count (32) was recorded in August 2011 whereas maximum count (85) was recorded during July 2011. Count table show that the vultures visited this dumping site regularly. This site certainly proved to be an important feeding site for the vultures as food security was ensured by us. The other important fact is that entire population of the area never came to the feeding site at a time which indicated that some birds were getting food from some other sources also. Information is available on other feeding sites during the same period, however, it is not within the scope of this project.

During this one year project, not a single vulture was found dead in the project area. In all previous years, we had records of dead vultures from the area. We consider that this is a big achievement as it fits with our hypothesis that besides ‘Diclofenac’, food availability is an important factor for the survival of vulture. We have no tools with us to prove or disprove ‘Diclofenac’ theory, but at least ‘food crisis’ hypothesis is proved through this project.

**Constraint:** Transportation of carcasses is the most difficult task and it is costly too (See photograph of feeding site with transportation vehicle).

Carcass Dumping Site at Asarana. Regular Transportation of Carcasses is Very Important.
Number of Carcasses Offered During Project Period and Corresponding Vulture Count

<table>
<thead>
<tr>
<th>Period</th>
<th>No. Carcasses Offered</th>
<th>Max. Vulture Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2010</td>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>December 2010</td>
<td>22</td>
<td>65</td>
</tr>
<tr>
<td>January 2011</td>
<td>22</td>
<td>45</td>
</tr>
<tr>
<td>February 2011</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td>March 2011</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>April 2011</td>
<td>37</td>
<td>45</td>
</tr>
<tr>
<td>May 2011</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>June 2011</td>
<td>41</td>
<td>35</td>
</tr>
<tr>
<td>July 2011</td>
<td>20</td>
<td>85</td>
</tr>
<tr>
<td>August 2011</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>September 2011</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>December 2011</td>
<td>22</td>
<td>35</td>
</tr>
<tr>
<td><strong>Total Carcasses dumped</strong></td>
<td><strong>261</strong></td>
<td><strong>85</strong></td>
</tr>
</tbody>
</table>

White-backed Vultures at Asarana Feeding Site
In September–October 2010 and August – September 2011, we did not dump carcasses at feeding site as they are months of south-west monsoon. Unused flesh material smells badly due to humid climate which is disliked by the people staying around.

Population Trend of White-backed Vulture in Bhavnagar and Amreli Districts: A Comparison*

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of WB Vultures Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amreli</td>
</tr>
<tr>
<td>2005</td>
<td>47</td>
</tr>
<tr>
<td>2007</td>
<td>77</td>
</tr>
<tr>
<td>2010</td>
<td>135</td>
</tr>
<tr>
<td>Present Study</td>
<td></td>
</tr>
</tbody>
</table>

* From Pande et al. 2010.
3. EXTENSION ACTIVITY

(A) Training to Veterinarians, Para-veterinarians & Chemists

We arranged three meetings with Para-veterinarians in September 2010 to inquire their ways of working mode of getting drugs and existing crisis of vulture decline.

In October 2010, total eighty (80) chemists of Mahuva Tahsil were personally visited to make them aware about the crisis of vulture population decline, causative drug – Diclofenac, Govt. of India’s ban on the drug and availability of alternate drug – Meloxicam. All the chemists of the area were given Xerox copies of all the relevant documents (Annexure 3).

In November 2010, total forty (40) chemists of Rajula Tahsil and Nageshree town were personally visited with above objectives.

In December 2010, a meeting was conveyed with freshly appointed Veterinary doctors of the area to discuss vulture conservation issues and use of alternate drug.

As the Veterinary Officers are busier with field work so it is difficult to organized a meeting for all of them at a time. They avoid coming to a meeting. Hence to meeting with one to one is more effective. Technically, the Para-veterinarians are doing illegal practice and hence they don’t prefer to attend a meeting. In such case I personally go to their home or a place where he is practicing and communicate with him. We provide them Meloxicam at subsidized rate of Rs. 25/vial. The market MRP of Meloxicam is Rs. 105 -107/vial. The financial support for supplying Melaxicam at subsidized rate comes from other sources, particularly Nature Club, Surat. The purpose is to discourage them for using Diclofenac and divert them towards lesser toxic drug.

Meeting with Chemists
A Summary of Training to Veterinarians, Para-veterinarians & Chemists

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Date</th>
<th>Audience</th>
<th>Activity</th>
<th>Place</th>
<th>No. Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sep-2010</td>
<td>Para vet</td>
<td>Identify Para vet and their approach to get medicine</td>
<td>Rajula</td>
<td>3 meeting</td>
</tr>
<tr>
<td>2</td>
<td>Oct-2010</td>
<td>Chemists</td>
<td>Distributed Diclofenac banning letter &amp; inquired about nsaid they are using</td>
<td>Mahuva</td>
<td>80 shop covered</td>
</tr>
<tr>
<td>3</td>
<td>Nov-2010</td>
<td>Chemists</td>
<td>Distributed Diclofenac banning letter &amp; inquired about nsaid they are using</td>
<td>Rajula and Nageshree</td>
<td>40 shops covered</td>
</tr>
<tr>
<td>4</td>
<td>Dec-2010</td>
<td>V.O</td>
<td>Meeting at Mahuva</td>
<td>Mahuva</td>
<td>3 V.O</td>
</tr>
<tr>
<td>5</td>
<td>14/01/2011</td>
<td>VO</td>
<td>Meeting with Dr. Patel</td>
<td>Mahuva</td>
<td>V. O.</td>
</tr>
<tr>
<td>6</td>
<td>08/02/2011</td>
<td>VO</td>
<td>Meeting with Dr. Dabhi</td>
<td>Rajula</td>
<td>V. O.</td>
</tr>
<tr>
<td>7</td>
<td>05/03/2011</td>
<td>Chemists</td>
<td>Distributed Diclofenac banning letter and inquired about nsaid they are using</td>
<td>Kambhaha</td>
<td>10 shop visited</td>
</tr>
<tr>
<td>8</td>
<td>15/03/2011</td>
<td>VO</td>
<td>A meeting with Dr. Purohit</td>
<td>Nageshri</td>
<td>V. O.</td>
</tr>
<tr>
<td>9</td>
<td>08/06/2011</td>
<td>VO</td>
<td>Meeting with Panjarapol's vet and caretaker</td>
<td>Chhapariyali</td>
<td>V. O.</td>
</tr>
<tr>
<td>10</td>
<td>28/06/2011</td>
<td>VO</td>
<td>Visit at &quot;Pashu Davakhana&quot;</td>
<td>Madhiya</td>
<td>7 persons</td>
</tr>
<tr>
<td>11</td>
<td>19/07/2011</td>
<td>Para vet</td>
<td>Meeting with Para vet GIRIBAPU</td>
<td>Doliya</td>
<td>1 person</td>
</tr>
<tr>
<td>12</td>
<td>20/07/2011</td>
<td>VO</td>
<td>Meeting with VO of Rajula Taluka Dr. Purohit</td>
<td>Nageshri</td>
<td>5 persons</td>
</tr>
<tr>
<td>13</td>
<td>07/08/2011</td>
<td>VO</td>
<td>Meeting with forest VO Dr. Nayan Patel</td>
<td>Rajula</td>
<td>V. O.</td>
</tr>
<tr>
<td>14</td>
<td>08/08/2011</td>
<td>VO</td>
<td>Meeting with forest VO Dr. Nayan Patel</td>
<td>Mahuva</td>
<td>V. O.</td>
</tr>
</tbody>
</table>

A huge effort was done to consult and aware chemists of three tahsils about the lethal effect of ‘Diclofenac’ on vultures’ life and legal ban on the stocking and sale of this deadly drug. Alternate and relatively safer drug ‘Melaxicam’ was also made available at a cheaper rate. Only through conviction of veterinary practitioners and chemists, ‘Diclofenac’ could be removed from the project area. All the Panjarapolss also extended cooperation in removing the drug from the regular practice.
Addressing Veterinarians and Para vets
SUPPORTED BY:

Poster campaign against Diclofenac to conserve vultures

Sick vulture being examined at a hospital
(B) Awareness Programmes in Schools and Villages

Methods:
Awareness programmes included Exhibition on Vulture Conservation, Film show on vultures, Painting Competition, Vulture Watch, Elocution competition, Talks etc. These programmes were arranged for the students of all the standards.

Results:
Awareness programmes started right from September 2010. Out of twenty four (24) programmes proposed for the schools, at least 14 programmes were executed during report period in different schools. Total 6610 students were involved in the activity during the report period. Till now, there was no repetition of programme in the same school. Programme arranged on 15th August 2011 at Nageshree High School and Rajula Court were public events and hence number of participants could not be counted.

Monthly details of the programmes arranged are given below.

September 2010:
1. K.G. Mehta High School, Mahuva: Exhibition on Vulture Conservation. 1700 students
2. J. P. High School, Mahuva: Exhibition on Vulture Conservation & Film show on vulture. 1500 students

October 2010:
1. Municipal Primary School 1, Mahuva: Film show on vultures. 210 students
2. Municipal Primary School 1, Mahuva: Painting Competition. 200 students

November 2010:
1. Primary School, Nageshree: Vulture Watch. 130 students

December 2010:
1. Rajula Girls School, Rajula: Film show on vultures & exhibition. 470 students
2. Rajula Girls School, Rajula: Elocution competition. 470 students
3. Jesar Govt. School, Jesar: Film show & exhibition. 250 students

January 2011
1. Asarana Primary School, Asarana. Drawing competition on vulture theme. 300 students
2. Devaliya Higher Secondary School, Devaliya. Exhibition. 270 students

February 2011
1. Mthapur Primary School, Mthapur, Jafarabad. Talk and exhibition. 250 students
2. S. K. Varu Higher Secondary School, Nageshree. Talk and exhibition. 300 students

March 2011
1. Girls School, Nageshree. Film Show and exhibition. 320 students
2. Boys School. Nageshree. Exhibition and painting competition. 240 students

**June 2011**

1. Khakhbai Primary School no 1 Exhibition. 232 students
2. Dugheri Primary School Exhibition 350 students

**July 2011**

1. Devaliya Primary School Exhibition 248 students
2. Doliya Primary School Exhibition 300 students
3. Akhatariya Primary School Exhibition 375 students

**August 2011**

1. Maliya Primary School Exhibition 423 students
3. Maliya Primary School. Drawing and Painting competition. 200 students
A Summary of the Awareness Programmes Executed in Schools

<table>
<thead>
<tr>
<th>Date</th>
<th>Name of School</th>
<th>Activity</th>
<th>No. Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>02/09/2010</td>
<td>K. G. Mehta High. School, Mahuva</td>
<td>Exhibition of flaps</td>
<td>1700</td>
</tr>
<tr>
<td>12/09/2010</td>
<td>J.P. High. School, Mahuva</td>
<td>Exhibition of flaps &amp; film show</td>
<td>1500</td>
</tr>
<tr>
<td>12/10/2010</td>
<td>Municipal Prim. School 1, Mahuva</td>
<td>Film show</td>
<td>210</td>
</tr>
<tr>
<td>24/10/2010</td>
<td>Municipal Prim. School 1, Mahuva</td>
<td>Painting competition</td>
<td>200</td>
</tr>
<tr>
<td>02/12/2010</td>
<td>Primary School, Nageshree</td>
<td>Vulture watch</td>
<td>130</td>
</tr>
<tr>
<td>14/12/2010</td>
<td>Rajula Girls School, Rajula</td>
<td>Film show &amp; exhibition</td>
<td>470</td>
</tr>
<tr>
<td>18/12/2010</td>
<td>Rajula Girls School, Rajula</td>
<td>Elocution</td>
<td>470</td>
</tr>
<tr>
<td>25/12/2010</td>
<td>Jesar Gov. School, Jesar</td>
<td>Film show &amp; exhibition</td>
<td>250</td>
</tr>
<tr>
<td>26/01/2011</td>
<td>Asaran Primary School, Asrana</td>
<td>Drawing competition</td>
<td>300</td>
</tr>
<tr>
<td>28/01/2011</td>
<td>Devaliya High. Second. School, Devaliya</td>
<td>Exhibition</td>
<td>270</td>
</tr>
<tr>
<td>07/02/2011</td>
<td>Mithapur Primary School, Jafarabad</td>
<td>Talk and exhibition</td>
<td>250</td>
</tr>
<tr>
<td>15/02/2011</td>
<td>S. K. Varu High. Second. School, Nageshree</td>
<td>Talk and exhibition</td>
<td>300</td>
</tr>
<tr>
<td>25/03/2011</td>
<td>Girls School, Nageshree</td>
<td>Film Show</td>
<td>320</td>
</tr>
<tr>
<td>28/03/2011</td>
<td>Boys School, Nageshree</td>
<td>Exhibition &amp; painting competition</td>
<td>240</td>
</tr>
<tr>
<td>15/06/2011</td>
<td>Khakhbhai Primary School</td>
<td>exhibition</td>
<td>232</td>
</tr>
<tr>
<td>21/06/2011</td>
<td>Dugheri Primary School</td>
<td>exhibition</td>
<td>350</td>
</tr>
<tr>
<td>07/07/2011</td>
<td>Devaliya Primary School</td>
<td>exhibition</td>
<td>248</td>
</tr>
<tr>
<td>13/07/2011</td>
<td>Doliya Primary School</td>
<td>exhibition</td>
<td>300</td>
</tr>
<tr>
<td>14/07/2011</td>
<td>Akhatariya Primary School</td>
<td>exhibition</td>
<td>375</td>
</tr>
<tr>
<td>08/08/2011</td>
<td>Maliya Primary School</td>
<td>exhibition</td>
<td>423</td>
</tr>
<tr>
<td>15/08/2011</td>
<td>Nageshri High School and Rajula Court</td>
<td>Exhibition and drawing competition on independence day</td>
<td>Public event</td>
</tr>
<tr>
<td>24/08/2011</td>
<td>Maliya Primary School</td>
<td>Drawing and Painting</td>
<td>200</td>
</tr>
<tr>
<td>16/10/2011</td>
<td>Talaja Girls High school</td>
<td>exhibition</td>
<td>1300</td>
</tr>
<tr>
<td>18/10/2011</td>
<td>Talaja Boys High School</td>
<td>exhibition</td>
<td>1700</td>
</tr>
<tr>
<td></td>
<td>Total Number Approached</td>
<td></td>
<td>11,738</td>
</tr>
</tbody>
</table>
Principal of Dugheri Primary School

Through the awareness programmes in the schools and public places, placing hoarding at public places and press notes, helped us to gather information about vultures. Extension programme to more than 11000 school children in one year reached to their parents also. Only through this activity, we could relocate missing population of vulture from ‘Zapodar’.
Vulture Watching …

Awareness Programmes in Schools
Photo Exhibition on Vulture Conservation at a Girls School
OUTCOME

Due to constant monitoring, we could monitor breeding population of the vultures and the progress of nest development. Successful fledging of 16 nestlings out of eighteen (18) nests is very high breeding success. Moreover, not a single vulture (adult or juvenile) died in the project area during one year period. This could be achieved largely by running the Asarana feeding site on regular basis during the breeding period. Providing Diclofenac-free food to vultures for the time period of approximately one year in sufficient quantity made the vulture population stable.

We could identify more number of nesting sites of vultures with the help of school students where we run awareness programmes. We could convince people particularly coconut orchard owners and coconut-harvesters not to disturb vultures and its nests. As a result 16 chicks successfully fledged from the nests. We communicated with 11,738 school students through twenty four programmes and ran series of programmes with coconut harvesters, veterinarians, Para-veterinarians and ‘Chamar’ engaged in de-skinning of carcasses. We organized awareness programmes for the people who are directly or indirectly involved with vulture’s nesting and feeding sites, and those associated with Diclofenac marketing and it’s user who ultimately helped in this Diclofenac removal campaign. The impact is that all chemists and the users of Diclofenac are totally aware about the lethal effect of the drug on the vultures and the legal issues involved in selling and use of this deadly drug. At present the drug is not being used anywhere in the area. In Gujarat, there were 2135 Gyps vultures in 2005 which declined to 1065 in 2010 showing 50% decline. In the project area the decline was only sixteen (16%) over six years. (GEER Foundation, Gandhinagar). At present we have at least 113 vultures (adults) and 16 juveniles giving a figure of 129 birds. This is a decline of thirty three percent (33%) over seven year’s period around Mahuva-Rajula complex. Certainly, Mahuva-Rajula complex is one of the few places in the country where vulture decline is minimum and since 2007 the population size is almost stable.

RECOMMENDATION

Regular food supply had positive impact on population stabilization of White-backed Vultures in project area and hence it is being recommended that Diclofenac-free animal carcasses should be dumped at more than one place on regular bases for the conservation of this Critically Threatened Species
REFERENCES


Vol-1, Wildlife Institute of India, New Forest, Dehra Doon.


ANNEXURES

Annexure 1

Flamingo 2(5&6): 2-3, 2004

Report on The Workshop on “Current Status of Vultures in Gujarat” Held on 19th September 2004 at Anand

Bird Conservation Society, Gujarat (BCSG) organized Workshop on, “Current Status of Vultures in Gujarat” at B. A. College of Agriculture Auditorium, Anand on 19th September 2004. Dr. B. M. Parasharya, Hon. Secretary of the Society welcomed the guests and briefed the gathering about the activities of the Society and the objectives of the Workshop. Dr. Bakul Trivedi, Hon. Joint Secretary introduced the guests, and briefly narrated the profiles of three ornithologists Shri Lavkumar Khacher, Shri M. K. Himmatsinhji and Shri Lalsinh Raol who were then duly felicitated by the Society for their contribution to the bird conservation movement in the state. Shri Khacher and Shri Raol, who incidentally are the President and Vice President of the Society, blessed the house and shared with the audience their reminiscences of bird watching days. The workshop was inaugurated by Prof. M. C. Varshneya, Honorable Vice Chancellor, Anand Agricultural University. He pointed out the association of vultures with Indian society since the days of Ramayana, citing the example of ‘JATAYU’. An updated compilation, ‘A Checklist of the Birds of Gujarat’ prepared by Drs. B. M. Parasharya, C. K. Borad and D. N. Rank was released at the workshop. This is the first document of its kind, which enlists all the species and subspecies of the birds recorded from Gujarat State with their standardized English, Scientific and Gujarati names. This will prove to be a great help to the birdwatchers of the state and the country.

Speaking on this occasion, Dr. R. B. Shukla, Director of Animal Husbandry said that State Government has recently put up restrictions on the use of ‘Diclofenac’ drug in treating sick animals with meager chances of recovery from the ailment and no hopes for survival. Recent findings have shown that when the vultures consume very low dose of this drug, in the form of residues from the carcasses of dead animals, they show the symptoms of visceral gout and kidney failure and ultimately die. Gujarat is the first state to issue such instructions to the veterinarians, for the conservation of this species. Shri Pradeep Khanna, Chief Conservator of Forests (Wildlife) said that this Workshop should help us to determine status of the vultures in our state, identify various threats and workout strategy for their conservation.

The workshop was attended by eminent Ornithologists / Scientists from prestigious institutions like, Bombay Natural History Society, Salim Ali Centre for Ornithology, Royal Society for Protection of Birds- U. K. and Anand Agricultural University. State Government officials like Director- Animal Husbandry, Chief Conservator of Forests (Wildlife) and other senior officers of the Forest Department also attended and gave their valuable suggestions and inputs. The Workshop received an overwhelming response and was attended by about 300 delegates from the State. This is probably the first occasion in Gujarat when such a large number of birdwatchers gathered at one place (perhaps in the country) especially to discuss vulture conservation issue. More than 200 photographs of Vultures by well-known wildlife photographers* of the State were also exhibited at the workshop venue.
Deliberations went on for the whole day, with presentations by birdwatchers from different regions of the State on the status of Vultures in the respective areas of the State and probable reasons for their decline. Possible conservation strategies, captive breeding necessities, etc. were discussed during open house session.

In the beginning, Dr. Vibhu Prakash (BNHS) intricately explained Vulture identification in the field. During the deliberations, Chris Bowden (RSPB) opined that ‘Diclofenac’- a veterinary drug is the major factor responsible for vulture population decline and should be totally removed from the system. Dr. Bowden also emphasized the need for captive breeding programme and gave details of the initiatives taken up by BNHS and RSPB for Vulture conservation through establishment of ‘Vulture Care and Breeding Center’ at Pinjor, Haryana. Drs. D. N. Rank and R. H. Sabapara of Anand Agricultural University and State Animal Husbandry Department respectively, presented detailed analysis of all available data and showed that decline in Vulture population was noticed from several parts of Gujarat State, much before the introduction of ‘Diclofenac’ in 1996. Moreover, the vultures are even surviving today in the areas where a large number of veterinary practitioners are concentrated and ‘Diclofenac’ use is at its maximum. Also very less percentage of cattle population receives veterinary services and so is spared from exposure to ‘Diclofenac’. Their analysis suggested that ‘Diclofenac’ use can not be the only factor responsible for the decline of vultures in Gujarat. Many other birdwatchers – to name a few- Dr. Lalitha Vijayan, Shri S. N. Varu, Shri Ashwin Pomal, Shri Devji Dhamecha, Shri Jaydev Nansey, Shri R. V. Assari, Dr. Piyush Matalia, Dr. I. R. Gadhvi, Shri Kartik Shastri, etc. were of the opinion that non-availability of food, competition for food with other animals and human beings, destruction of safe nesting sites, poisoning and shooting of vultures near airports are equally serious threats to their population.

In the plenary session it was resolved that:

1. Since, the populations of different species of vultures were already in decline even before the drug ‘Diclofenac’ was introduced; this chemical alone cannot be the only factor responsible for the decline of population of vultures. Further scientific studies on ‘Diclofenac’ in Indian context are urgently required. The problem should be addressed in totality rather than isolating only one factor as the cause of vulture decline.

2. Food and nesting sites may be ensured to the Vultures where they are at present existing now. If necessary, artificial feeding and nesting sites may be created.

3. Since the Vultures are surviving in small patches having different threats, area specific conservation strategies, taking into account those as suggested by the presenters may be designed.

4. For regular monitoring of Vulture population, a proforma for the data collection was circulated. A systematic status survey is a matter of urgency, which can be collectively done by the State Forest Department and NGOs.

5. Since all scavengers including Vultures are important in our environment, all concerned should work for the protection and increase of their population.

6. The favored niches of Vultures need to be identified and protected.

8. All panjarapoles should be listed and kept under watch for Vulture population monitoring.

9. Dead bodies of Vultures should be sent to the institutions like one at Pinjore and to SACON for research. Procedure should be made easier to facilitate the same.

10. A chronicle on Vulture may be published by BCSG under ‘Vulture Monitoring Programme’.

11. Like Vultures, an eye should be kept on other so-called ‘Common Birds’ by the birdwatcher community before it is too late.

*List of Photographers: Ashwin Pomal, Bhuj; Bharat Rughani, Porbandar; Bhushan Pandya, Rajkot; Deshal Pagi, Dholka; Kartik Shastri, Ahmedabad; Kunal Patel, Ahmedabad; Manoj Thakar, Vadodara; Mukesh Acharya, Ahmedabad; Raghuvirsinh Jadeja, Nalia; Rohit Vyas, Vadodara; Sanat Shodhan, Ahmedabad; Vikram Pagi, Ahmedabad; Yogendra Shah, Surendranagar.
Annexure 2

Times of India report on missing vultures of Zapodar

Vulture colony in Zapodar village vanishes

Vijaysinh Parmar, TNN Mar 17, 2011, 12.43pm IST

MAHUVA (BHAVNAGAR): An entire vulture colony at Zampodar village in Rajula taluka of Amreli district, which had been a roosting and nesting site for nearly 31 white rumped vultures, has gone missing for the past two months.

"We had earlier spotted 31 vultures, mostly white-rumped vultures, at Zampodar village in Rajula taluka. It was a traditional vulture colony. But, not a single vulture is found here since the past two months. It is unusual and shocking. We fear that it may have just vanished," said Ruchi Dave, vulture conservationist and honorary wildlife warden, Bhavnagar district.

"During the last survey, more than 81 vultures were spotted in the Mahuva-Nageshri range. Now, we need to find out the cause behind the disappearance (of the colony)," said Dave. Vultures are endangered species and falls under the schedule one category of Wildlife (Protection) Act, 1972. "The forest department should appoint a monitoring committee to look into the matter and prepare a scientific status report about the missing vulture colony," she added.

Dave said the Mahuva-Nageshri and Rajula ranges on Saurashtra coast are a few of the last sites for vultures in the state where they roost and nest on coconut trees.

Wildlife activists fear that further negligence could lead to the complete disappearance to these birds. In fact, there is no regular monitoring mechanism for vultures by the forest department. "There are no measures in place to rescue and treat ill vultures and monitor vanishing ones. In 2006, 31 vultures were found dead. The same thing can happen again. Before things get worst, we need to act fast," Dave said.

Dave has been actively involved in vulture conservation and is a member of Bird Conservation Society-Gujarat (BCSG), which runs a feeding site for vultures at Asharana village.

However, the forest department is not aware of the entire episode. When contacted, J K Makwana, deputy conservator of forests, Amreli district, said, "We have come to know about it from local volunteers and we have asked the local forest department to look into the matter."

Sources said there are three major panjrapols (animal shelters) in the area - Rajula, Chhapariyali and Nalga - where vultures can be given animal carcasses to feed. "But, vultures do not land there for various reasons so there is a need to develop a few more feeding sites," said Dave.

"Mostly, local voluntary groups are monitoring the vultures' activity with the help of the forest department. We have also asked local volunteers to submit a project plan to carry out the
conservation work," said Bharat Pathak, director, GEER Foundation, which monitors vanishing vulture species.

Apart from missing the vulture colony, sources confirmed that six vultures have had died since January 2011. They include three white-rumped vultures in Mahuva-Rajula range and three long-billed vultures in Girnar. "As of now, we do not know the exact reasons for the death of these vultures but we have sent two samples for analysis at Pinjore Vulture Breeding Centre. We would be able to know the exact reason once the report arrives," said Dave.

FEATURED ARTICLES
MINISTRY OF HEALTH AND FAMILY WELFARE

(Office of the Department of Health)

NOTIFICATION

New Delhi, the 4th July, 2008

G.S.R. 499(E).—Whereas the Central Government is satisfied that the use of drug formulations containing Diclofenac are likely to involve risk to animals;

And, whereas, a safer alternative to the said drug is available;

And, whereas, the Central Government is satisfied that it is necessary and expedient in the public interest to prohibit the manufacture, sale and distribution of Diclofenac and its formulations for animal use;

Now, therefore, in exercise of powers conferred by Section 26A of the Drugs and Cosmetics Act, 1940 (30 of 1940), the Central Government hereby prohibits the manufacture, sale and distribution of the following drug, with immediate effect, namely:—

“Diclofenac and its formulations for animal use”.

[F. No. X-11014/6/2007-DFQC]

DEBASISH PANDA, Jr. Secy.
No.18-1/2007-DC

From: The Drugs Controller General (India),
Directorate General of Health Services,
FDA Bhawan, Kotla Road,
New Delhi-110002.

Dated: the

Manufacturer's Associations.

Subject: Prohibition to manufacture, sale and distribution of Diclofenac and its formulations for animal use with immediate effect under GSR 499 (E) dated 04.07.2008 Regarding.

Sir,

Union Ministry of Health and F/W New Delhi has published a Gazette Notification vide GSR 499(E) dated 04.07.2008, in exercise of the powers conferred under Section 26A of the Drugs and Cosmetics Act, 1940, prohibiting the manufacture, sale and distribution of Diclofenac and its formulations for animal use with immediate effect.

A copy of the notification is enclosed for your information.

The contents of the notification may be given wide publicity through the journals for the information of the manufacturers of drugs.

Yours faithfully,

(Scanned Signature)
Drugs Controller General (India)