

## Towards creating Vulture Safe Zone, Central Gujarat Ahmedabad

Aditya Roy & Kartik Shastri

### PVSZ project

Based on satellite tracking data, Gyps vultures (*Gyps indicus* and *Gyps bengalensis*) are known to forage in an area of 100km radii from their nesting site. Thus in order to conserve them in-situ an area of 100km radii i.e. 30,000 sq.km around the vulture nesting site needs to be made safe from Diclofenac and other factors affecting vulture population. This is the line of thought behind making vulture safe zones. On this bases provisional vulture safe zone projects have been initiated in Gujarat, Uttarpradesh, Jharkhand and Uttarakahnd by BNHS & RSPB in collaboration with state level organizations/people working for vulture conservation. Gujarat having good population of *Gyps bengalensis* and *Gyps indicus* (data of 2012 census) becomes one of the important states to target vulture conservation efforts. Thus two Provisional vulture safe zones (PVSZ) have been proposed in Gujarat i.e Saurashtra and Central Gujarat where maximum vulture population exists.

The work of PVSZ central Gujarat is underway since last one year and mainly co-ordinated by both of us (Aditya Roy and Kartik Shastri). The area is spread over 8 districts namely Ahmedabad, Mahesana, Surendranagar, Anand, Sabarkantha, Kheda, Patan & Gandhinagar. Out of these eight Ahmedabad, Mahesana, Surendranagar and Anand districts have active colonies of *Gyps bengalensis* totalling to around 150 individuals.

In order to achieve a vulture safe zone on ground, we have taken a holistic multi-stakeholder approach. This includes top level officers of food & Drug, Forest and Animal husbandry departments to villagers. Awareness, Advocacy and Monitoring are the three major components of this whole exercise.



### Monitoring:

Monitoring is a crucial part of any

scientific work. It is very essential for generating scientific data which is important to assess the impact of conservation work being carried out and level of awareness among people. In the PVSZ work we have been monitoring vulture colonies and pharmacies which sell veterinary drugs.

## **Vulture colonies**

### **Monitoring existing colonies**

As mentioned in the introduction the colony of Ahmedabad was being monitored by Mr. Kartik Shastri since 1999. Similarly the colony at Kadi (Mahesana) was being monitored by one of our colleagues Mr. Anil Patel. In recent years we had also started monitoring colonies at Khambhat and Viramgam talukas. During the PVSZ work we started more regular monitoring of these colonies and included GPS mapping of active nests, tree species, nest height and tree height etc. We also did photographic documentation of each nesting colony.

### **Finding of new colonies**

Apart from known colonies we did extensive survey and inquiry with locals, forest staff and nature lovers to find new vulture colonies. During this our field worker Vishal Mistry found a new colony in Dhrangadhra district of Surendranagar district. On this information we carried out more intensive search around this colony and found nesting in four more villages nearby. Thus during the course of PVSZ work we found a new colony of almost 60 Gyps bengalensis and started monitoring it.

During the monitoring from our past experience we feel that there is a strong need to protect the trees on which vultures nest. Especially in case of commercially important trees there are high chances of deliberate nest destruction by tree owners. For e.g all the nests of Khambhat colony were made on toddy palm trees, which are grown for commercial interest. During the nesting season 2012-13 we found that all the nests of this colony were destroyed. Similar incidences occur in coastal region of Gujarat where vultures nest on coconut and palm trees. A good economical compensation and legal protection both need to be implemented strongly to avoid these losses.

## **Ringling**

As it would be discussed in more detail towards the end of this article we are associated with bird rescue and treatment activity since last 7 years. As part of this activity we have rescued many vultures and also successfully released them with leg rings provided by RSPB/BNHS. These rings have proven of great help in terms of knowing the movement of vultures. For a special mention; a ringed vulture SR which was released in 2010, was resighted several times. Finally we also found her making nest and monitored her chick. We also found her feeding at a carcass dump almost 55km from the nesting site. To our pride we have ringed vultures from 3 major colonies i.e Ahmedabad, Kadi and Dhrangadhra each having over 40 individuals. We hope to get maximum re-sighting data which can help in understanding movement of individuals between colonies.

District	Taluka	No. of nests
Ahmedabad	Ahmadabad	14
	Viramgam	18
Surendranagar	Dhrangadhra	15
Anand	Khambhat	5
Mahesana	Kadi	23
	Bechraji	1
<b>Total</b>		<b>76</b>

Number	Ring Code	Year	Colony	Re sighting
1	<b>SX</b>	2009	Ahmadabad	
2	<b>PX</b>	2009	Ahmadabad	
3	<b>PA</b>	2009	Ahmadabad	
4	<b>UP</b>	2010	Ahmadabad	
5	<b>SS</b>	2010	Ahmadabad	
6	<b>SR</b>	2010	Ahmadabad	√
7	<b>UU</b>	2010	Ahmadabad	
8	<b>EO6</b>	2012	Ahmadabad	
9	<b>EO1</b>	2012	Ahmadabad	
10	<b>D56</b>	2012	Ahmadabad	√
11	<b>DO2</b>	2012	Ahmadabad	√
12	<b>D61</b>	2013	Kadi	
13	<b>D41</b>	2013	Dhrangadhra	√
14	<b>D47</b>	2013	Ahmadabad	√
15	<b>D04</b>	2013	Dhrangadhra	√

During the nest monitoring one very important feature that was common in all the colonies was selection of nesting sites near human habitation and village ponds. Except the nests of urban areas i.e. Ahmedabad and Kadi, all the nests recorded in PVSZ central Gujarat area were near village ponds primarily on large old trees. We also found vultures' dependence on these shallow village ponds for their routing bathing/ sunning activity and drinking water. It is important to note that these ponds are fast vanishing with development. At many places they are being dug to deep ponds with JCB machines. It is very crucial to protect the existing colonies and possible nesting locations under wildlife protection act.



Fig: Typical Nesting habitats of *Gyps bengalensis* in PVSZ Central Gujarat

### Feeding sites

As it is well known carcasses having residues of diclofenac sodium are the main reason behind the dramatic decline of Asian vultures. Lately two other drugs Ketoprofen and Aceclofenac have also proven toxic for vultures.

In Gujarat a social and religious system termed “panjrapols” is very powerful. Panjrapols are places where unproductive and sick cattle are kept till they die and are given all necessary care. As these cattle are very weak the death ratio in these panjrapols is quite high and the dead animals are dumped in the huge premises that these panjrapols own. Such dumps have been regular feeding sites for vultures since many hundred years. In the PVSZ central Gujarat and surrounding area we have over 10 such panjrapols, from which 2 are known regular vulture feeding sites. We have been monitoring these sites from last five years and make sure that no vulture toxic drugs are being used there. Also a regular watch is kept on numbers of vultures coming to these sites.

We have observed that during winter these sites are visited regularly by vultures but as soon as the breeding season ends (late April to early May) vultures start dispersing and feed at random sites. Hence they fall victim to unsafe food and this is the period (Summer-Monsoon) when we have seen maximum cases of visceral gout. During our field surveys we have observed vultures feeding on carcasses at village outskirts which are not regular dumping sites.

During the PVSZ work we have visited all the important panjrapols and did awareness with vets and managers of panjrapols. We also did a GPS mapping of all important carcass dumps which can serve as food sources and interacted with the skimmers present at these dumps.

Majority of the skinners told that according to them vultures died because lot of medications are being used for animals which was not the case in past. Though they were not aware of any particular drug but their logic was quite clear and it was apparent that they had observed vultures in great detail. Many of them could even describe 5 different species of vultures and their order while feeding.

One very urgent need of time is rapid testing method which can detect presence of diclofenac and other toxic drugs in carcasses on field. That can play a very important role in assessing the safety of that particular feeding site and help in better monitoring and management.



Photo: Traditional vulture feeding site at Panjrapol



Photo: Vultures feeding on carcass thrown at village outskirts



Photo: PVSZ team Interaction with skinners

Bluebulls population has busted like anything in past 10 years in Gujarat. Many bluebulls fall victims of road accidents. These dead bodies are free from drugs and serves as great food for vultures and other scavengers. But as per wildlife act 1972, dead bluebull has to be buried in presence of forest officials. This becomes a major legal hurdle for using road accident bluebulls for vulture food. Moreover as bluebulls and feral pigs cause heavy crop damage, lot of organophosphates are used to kill them. Such dead bodies when consumed by vultures or other scavengers, they also die. We have come across several cases of organophosphate poisoning in vultures in last 10 years. In order to solve both these issues there is need to make amendments in wildlife act, such that it allows regulated hunting of bluebulls and feral pigs and those must be allowed to use for natural scavengers.



Photo: Vultures feeding on road killed blue-bull

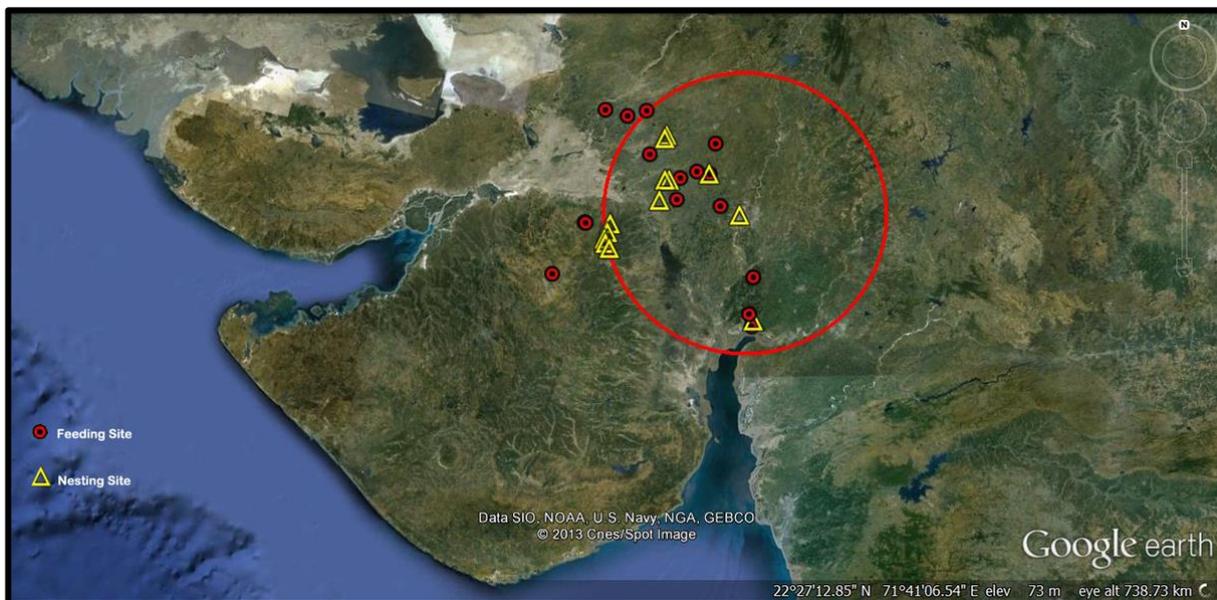


Fig: Nesting Sites and potential food sources for Gyps bengalensis (Central Gujarat)

One thing clear from the surveys of nesting and feeding site is that there are many suitable nesting sites where vultures were present in past. There are many large carcass dumps where vultures were regular visitors in past. Hence loss of nesting habitat and food scarcity as reported in many articles is not the reasons for vulture decline. When the habitat and

food both are there and vultures are not there than it is sure that they died of something else i.e Diclofenac and other toxic NSAIDS and poisons used to kill agricultural pests like buebulls and feral pigs.

### **Pharmacy**

Diclofenac sodium has been ban in veterinary sector since 2006. But the efficacy and cost effectiveness of this drug still attracts a huge amount of illegal use of human diclofenac in veterinary sector. The 30ml multidose vials of human diclofenac are easily available in pharmacy stores and cost 1/3<sup>rd</sup> compare to meloxicam. In order to know the prevalence of multidose human diclofenac in veterinary market an undercover survey was carried out across the PVSZ Central Gujarat area. Our field worker vishal mistry visited 120 pharmacy stores spread over the PVSZ area and asked for a painkiller for his buffalo/cow.

From 120 pharmacies 69 shops gave drugs rest refused to give drugs or did not have painkillers for animals. The results of 69 stores are shown in table.

<b>Active Drug</b>	<b># of Pharmacies that offered this drug</b>
Diclofenac Sodium	22/69
Meloxicam	29/69
Analgin	7/69
Nimesulide	6/69
Phenyl Butazone	1/69
Piroxicam	1/69
Non- NSAIDS	3/69

It shows that meloxicam is getting in the market but human diclofenac is still the biggest competitor. The most effective way to remove the diclofenac from veterinary market would be to make it equally priced or less priced compare to diclofenac and put a legal ban on multidose human diclofenac vials.

3 months after the first undercover survey we carried out a second awareness survey and discussed the diclofenac and vulture issue with the entire 69 store owner and many more stores which were present in our area. Posters were put up on all the stores and brouchers were given to store owners.

Now the last stage survey would again be an undercover survey to know the effect after awareness.

### **Awareness and Advocacy:**

#### **Literature**

Awareness amongst the local stakeholders and villagers who are directly linked to vultures is very important aspect for creating a vulture safe zone. When we started looking at various materials available in this matter, we realized that there is a strong need to develop awareness material which is crisp and understandable by locals. It must be in vernacular language covering all aspects of conservation and designed as per the target group. We designed three different types of materials: A broucher that can be given to villagers, local interested people, ground level forest

staff, skimmers, panjrapols managers and nature lovers; A Poster which can be kept in forest offices, panjrapols, schools and chemist shops and one more poster especially for chemist shops. All the materials have mobile numbers where people can contact if they find vulture colony or dead/injured vultures.

### ગગન વિહારી ગીધને બચાવો

અમદાવાદ: મધ્ય ગુજરાત: ગીધ સુરક્ષિત વિસ્તાર



**સાઇકલોફેનાક X**  
**મેલોક્સીકેમ ✓**

મધ્ય ગુજરાત માં સફેદ પીંઠ ગીધ સહી સંખ્યામાં બચેલા છે અને પ્રજનન કરે છે. વિનાશના આરોપોને ગીધને બચાવવાના પગલ તરફ અમદાવાદ અને તેની આસપાસના ૩૦,૦૦૦ ચો.કી.મી. વિસ્તારને સાઇકલોફેનાક સોડીયમ મૂળ ગીધ સુરક્ષિત વિસ્તાર બનાવવાની અને ઝુલેસ ઈપીવી છે. સાઇકલોફેનાક સોડીયમ ઉપરાંત બીજા બે સરળો આ વિસ્તારના ગીધ માટે હાતક સ્થિતિ સ્થાપિત કરવા છે. જંગલી ભૂલ અને નીલગ્રામને ભગવાન વપરાતી ફોરેન નામની દવા અને પંતંગ સચાવવા માટે ઉપયોગમાં લેવાતો ધારદાર મેલો કે જે ગીધ ઉપરાંત અન્ય ઘણા પક્ષીઓની ખંબો કાપવા માટે જવાબદાર છે.

તમે પણ આ ઉદ્દેશ કરવાના ભાગ બનીને ગીધ બચાવવાના પ્રયાસમાં સહભાગી બની શકો છો

- તમારા પશુઓની સારવાર માટે સાઇકલોફેનાક સોડીયમનો ઉપયોગ ના થાય તેનો આગ્રહ રાખો. જો કોઈ પશુચિકિત્સક આ દવાનો ઉપયોગ કરતા જણાય તો તેમને ગીધનું મહત્વ સમજાવો. પશુઓની સારવાર માં માનવ ઉપયોગ ની સાઇકલોફેનાક સોડીયમ નો વિરોધ કરો. આ દવા તમારા પશુઓ માટે અને ખાસ કરીને સગર્ભા પશુઓ માટે ખુબજ હાનિકારક છે.
- ગીધ માટે સુરક્ષિત એવી મેલોક્સીકેમ દવાના ઉપયોગ નો આગ્રહ રાખો
- જો તમને કોઈપણ પશુચિકિત્સક સાઇકલોફેનાક સોડીયમનો ઉપયોગ કરતા જણાય તો તે બાબતે અમારું ધ્યાન લેવો. તે એક કાનૂની ગુનો છે.
- ફોરેન નામના ચેરનો ઉપયોગ ટાળો
- પંતંગ સચાવવા માટે પાકા માંજાનો ઉપયોગ ટાળો
- ગીધને વસવાટ શેષ તથા વૃક્ષોને બચાવો
- જો તમને ગીધના માથા/ વસવાટ અથવા ઘાયલ/બિમાનમૃત શ્વેતમાં ગીધ જોવા મળે તો તરત અમને જણ કરો

આરિત્ય સેવા : 09879754204  
કાર્ડિય સાથી : 09824025045  
અનીલ પટેલ: 09879993144

**સાઇકલોફેનાક X**  
**મેલોક્સીકેમ ✓**



કેરોલિન: અરિત્ય સેવા ટ્રસ્ટના: અરિત્ય સેવા, કાર્ડિય સાથી

### આપણા સફાઈ કામદાર ગીધને બચાવો



ગીધના વિનાશનું મુખ્ય કારણ: પશુઓની સારવાર માટે સાયટી સાઇકલોફેનાક સોડીયમ નામની દવા લેવાથી તેઓ મૃત્યુ પામી શકે છે. તેઓને બચાવવા માટે આ દવા પ્રયોજવા વિરુદ્ધ સહાયતા આપવાની આપણી આશા છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે. સાયટી સુરક્ષિત વિસ્તારમાં સાયટી સાઇકલોફેનાક સોડીયમ નો ઉપયોગ કરવામાં આવે છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે. સાયટી સુરક્ષિત વિસ્તારમાં સાયટી સાઇકલોફેનાક સોડીયમ નો ઉપયોગ કરવામાં આવે છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે. સાયટી સુરક્ષિત વિસ્તારમાં સાયટી સાઇકલોફેનાક સોડીયમ નો ઉપયોગ કરવામાં આવે છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે.

આપણે ગીધ બચાવી શકીએ છીએ

પશુઓની સારવાર માટે સાયટી સાઇકલોફેનાક સોડીયમનો ઉપયોગ ના થાય તેનો આગ્રહ રાખો. જો કોઈ પશુચિકિત્સક આ દવાનો ઉપયોગ કરતા જણાય તો તેમને ગીધનું મહત્વ સમજાવો. પશુઓની સારવાર માં માનવ ઉપયોગ ની સાયકલોફેનાક સોડીયમ નો વિરોધ કરો. આ દવા તમારા પશુઓ માટે અને ખાસ કરીને સગર્ભા પશુઓ માટે ખુબજ હાનિકારક છે.

ગીધ માટે સુરક્ષિત એવી મેલોક્સીકેમ દવાના ઉપયોગ નો આગ્રહ રાખો

જો તમને કોઈપણ પશુચિકિત્સક સાઇકલોફેનાક સોડીયમનો ઉપયોગ કરતા જણાય તો તે બાબતે અમારું ધ્યાન લેવો. તે એક કાનૂની ગુનો છે.

ફોરેન નામના ચેરનો ઉપયોગ ટાળો

પંતંગ સચાવવા માટે પાકા માંજાનો ઉપયોગ ટાળો

ગીધને વસવાટ શેષ તથા વૃક્ષોને બચાવો

જો તમને ગીધના માથા/ વસવાટ અથવા ઘાયલ/બિમાનમૃત શ્વેતમાં ગીધ જોવા મળે તો તરત અમને જણ કરો

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**મેલોક્સીકેમ ✓**

કેરોલિન: અરિત્ય સેવા ટ્રસ્ટના: અરિત્ય સેવા, કાર્ડિય સાથી

### આપણા વિસ્તારની અગત્યની ગીધ પ્રજાતિઓ



સફેદ પીંઠ ગીધ    ગિરનારી ગીધ    ખેરો



વિસ્તરણ સાઈટ : આંતરિક અંગો પર ચુરિક એસીડની જખાવટ



માંજાથી મૃત્યુ પામેલ ગીધ    સુરક્ષિત દવા મેલોક્સીકેમ

### ગીધ અને ગીધ સુરક્ષિત વિસ્તાર નું મહત્વ

ગીધ પ્રકરણની ગીધ સુરક્ષિત વિસ્તાર કામદાર છે. પાલતું તેજા જંગલી પશુઓના મુત્તરોને અટકાવે તેઓ પર્ણવસ્તુને સ્વચ્છ રાખવાની ખુબજ મહત્વની ભૂમિકા ભજવે છે. ગીધને એક મોટી સમૂહ સિત જેટલા કદના મુરઠોને ફાટ એક કલક કરતા પછ ઓગા



સમસમાં સમ્પર્ક કરી જાય છે. આ રીતે તેઓ માનવજાતને ઠંડક અને બિચોલા જેવી ગંભીર બીમારીઓથી બચાવે છે. ખાસ કરીને ભારત જેવા દેશમાં કે જ્યાં પાલતું પશુઓની વસતી ઘણી વધુ છે ત્યાં રોગમુક્ત અને સ્વચ્છ પર્યાવરણની જાળવણી માટે ગીધ ખુબજ અગત્યના છે. ઉલ્લા ૨૦ વર્ષ માં ગીધની સહુ પ્રજાતિઓ : સફેદ પીંઠ ગીધ, ગિરનારી ગીધ અને સોનાર વીંટ ગીધ ની વસતી સમગ્ર ભારતીય ઉપ-મહાદ્વિપ માં ખુબજ ભયંજક ૩૫% થઈ રહી છે. આ ત્રણેય પ્રજાતિઓ કાઠ કરતા પછુ વધુ નાશ થઈ ચુકી છે અને લુપ્ત થવાના આરોપોને ઠેરવી છે. તેમના વિનાશનું મુખ્ય કારણ છે પશુઓની સારવાર માટે વપરાતી સાઇકલોફેનાક સોડીયમ નામની દવા. આ દવાના અસર રહી ગયા શેષ તેવા પશુઓના મુરઠોને ને અસરવાથી છે આ દવા ગીધના શરીર માં પવે છે જેને તે પચાવી શકતું નથી. તેના પરિણામ સ્વરૂપ ૪૦ થી ૭૨ કલાકમાં વિસ્તરણ સાઈટ નામની બીમારી થી ગીધનું મૃત્યુ થાય છે.

પશુ ચિકિત્સા માં ૨૦૦૬ થી આ દવાના ઉપયોગ પર પ્રતિબંધ મુકવામાં આવ્યો છે પરંતુ મનવ ઉપયોગ માટેની સાઇકલોફેનાક સોડીયમ ૯૭ પછુ પશુચિકિત્સકો દ્વારા પશુઓની સારવાર માટે ઉપયોગમાં લેવાઈ રહી છે.

આરિત્ય સેવા : 09879754204  
કાર્ડિય સાથી : 09824025045  
અનીલ પટેલ : 09879993144

કેરોલિન: અરિત્ય સેવા ટ્રસ્ટના: અરિત્ય સેવા, કાર્ડિય સાથી

### ચાલો ગીધ બચાવીએ

**સાઇકલોફેનાક**  
**એસીકલોફેનાક** ઇડો  
**કીટોપ્રોફેન**

**મેલોક્સીકેમ અપનાવો**



ગીધના વિનાશનું મુખ્ય કારણ: પશુઓની સારવાર માટે સાયટી સાઇકલોફેનાક સોડીયમ નામની દવા લેવાથી તેઓ મૃત્યુ પામી શકે છે. તેઓને બચાવવા માટે આ દવા પ્રયોજવા વિરુદ્ધ સહાયતા આપવાની આપણી આશા છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે. સાયટી સુરક્ષિત વિસ્તારમાં સાયટી સાઇકલોફેનાક સોડીયમ નો ઉપયોગ કરવામાં આવે છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે. સાયટી સુરક્ષિત વિસ્તારમાં સાયટી સાઇકલોફેનાક સોડીયમ નો ઉપયોગ કરવામાં આવે છે. આ દવા તમારા પશુઓ માટે ખુબજ હાનિકારક છે.

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કેરોલિન: અરિત્ય સેવા ટ્રસ્ટના: અરિત્ય સેવા, કાર્ડિય સાથી

Materials: Brochure (top and bottom left) Poster for multiple use (top right) Poster for chemist shops (bottom right)

### Village level

During the PVSZ work we visited all the villages where active vulture colonies are present and also villages where vultures were recorded in recent past. Initially we used to go and meet people at commonplace, talk to them about vultures and their importance and take their views. We revisited the villages several times and also distributed reading material and put up posters. We also did film shows on vultures in important vulture colony villages. In every village we met locally influential people like sarpanch and school teachers. During the meetings with villagers we identified local individuals who are more interested in this issue and took their numbers. We

keep in touch with these local leaders at least once in a week and they also call and give news regarding vultures. We have been doing this activity since last five years and during the PVSZ work we also covered the newly found colony of Dhrangadhra taluka. As the impact of awareness work in these new villages, just in a period of three months after finding this colony we have rescued and released two juvenile Gyps bengalensis with leg ring and collected one dead juvenile which turned out to be a case of visceral gout. The best local leaders are children of age 15-17 years. They are full of enthusiasm and keen observers. To my surprise I used to get phone calls from this young army about sighting of ringed vulture in their village and their observation is so strong that whenever I go to that village they take me to particular spot where ringed vulture regularly roosts. This is the level of attachment and awareness which needs to be achieved for any species if we really want to conserve it. Those who stay with the species 24 X 7 are the ones who can save them not us, and if these people are properly oriented than the species will surely have a bright future.



Photo: Awareness activity in villages



Photo: The army of children with PVSZ team



Photo:

Film shows in vulture colony villages

### Vets/paravets

Vets and paravets is the most crucial and toughest sector for targeting awareness. Paravets and untrained vets are not allowed to practice legally and hence reaching and talking to them is very tough. During the PVSZ work we tried to personally visit and interact with as many vets and paravets possible. We also interacted with vets/paravets who are practicing at panjrapols because their role will be more crucial as vultures feed in big numbers at these panjrapols. Two major drawbacks for convincing them for meloxicam in place of diclofenac are cost and efficacy. Initially we were not satisfied with the awareness that we achieved in this sector but later when we started distributing meloxicam as subsidized rate there was a big change. This is described in more details towards the end of this report under the heading “Distribution of subsidized meloxicam and its impacts”.

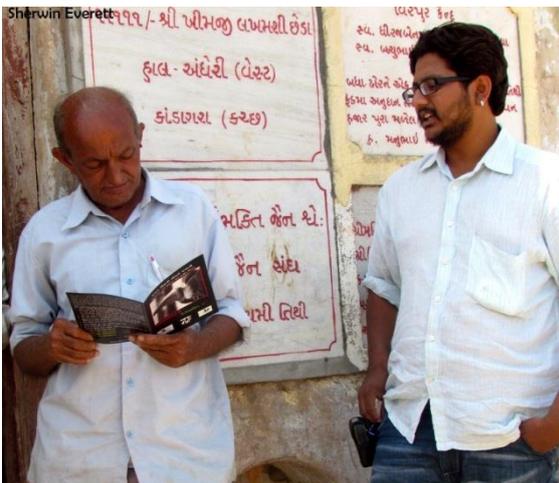


Photo:

Talking to a paravet at important panjrapols

### Panjrapols

As discussed panjrapols play crucial role as traditional vulture feeding sites. Hence it is very important to interact with the managers and vets of panjrapols. We have been working with two important panjrapols of kadi and Viramgam taluka since last 5 years. During the PVSZ work we

extended this to all major panjrapols which used to get hundreds of vultures in past. They still have great potential to become feeding sites when the vulture population is re-established and hence they must be converted to safe food sources in advance. These panjrapols have huge campuses and almost 2000-5000 cattle. There are average 2-10 animals dying daily at each panjrapols. Hence they hold great potential for vulture conservation.

Important panjrapols in and around PVSZ central Gujarat which were targeted during awareness work are listed in table.

District	Taluka	Name of Panjrapol
Ahmedabad	Viramgam	Viramgam khodadhor panjrapol
Mahesana	Kadi	Dabhla panjrapol
		Linch mahajan
Surendranagar	Dhrangadhra	Dhrangadhra khodadhor panjrapols
	Wadhvan	Wadhvan Mahajan
	Muli	Khakhrathal veed-Wadhvan Mahajan
Patan	Sami	Sami panjrapols
	Harij	Harij Panjrapol
	Radhanpur	Godhana veed-Radhanpur mahajan

### Forest department

As Gyps bengalensis falls under schedule 1 of wildlife protection act it is very important to get positive support of forest department. During the PVSZ work and past years we have built up a good relation with forest department of Ahmedabad, Mahesana and Surendranagar districts. They have been very positive in case of vulture rescues, dead vulture post mortems and other issues. We also had good opportunities to interact and give presentations to ground level forest staff of Mahesana and Surendranagar districts. We also had positive interactions with chief wildlife warden and director of GEER foundation regarding vulture safe zone work.

There have been some issues with particular forest officers being very authoritative and hampering the work for no strong reasons but we have been able to manage such problems so far. One special mention over here is the problems of sending samples of dead vultures for analysis at SACON and VCBC Pinjore. We have faced difficulties in getting permissions for this many times and if a proper channel of data exchange and sample transfer between research organizations and forest department is established it would be a great help for scientific studies of this fast vanishing species.



Photo: Interactions with ground level forest staff of Surendranagar and Mahesana districts

## **Animal husbandry**

Department of Animal husbandry is important govt. machinery that looks after livestock development and veterinary facility of state. During the PVSZ work we had an opportunity to meet the director Mr. A.J. Kachiyapetel. He is very positive towards the issue of diclofenac and vultures and has also issued special directive to all his staff for not using diclofenac. He also offered his full support to utilize meetings and gatherings by department as an awareness platform. With his support we were able to address all the deputy directors of animal husbandry from every district of Gujarat on a single platform at Gandhinagar on 22<sup>nd</sup> March 2013. On 27<sup>th</sup> April 2013 we attended the world veterinary day conference at Junagadh, Gujarat and interacted with veterinarians of whole state on a single platform. The secretary of Gujarat veterinary council Dr. Tank has also been very supportive in all our efforts. We hope to do some more concrete work with the department in future.

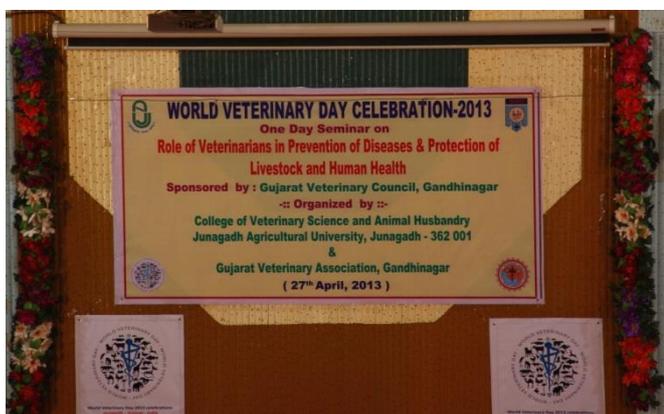


Photo: Attending World veterinary day

## **Food and drug authority**

At state level food and drug authority is the controlling govt. body for regulating drugs. During the PVSZ work we met the commissioner food and drug Mr. Koshiya and asst. commissioner drugs Mr. Chauhan twice. They were very supportive and quick in action. Within a period of 10 days they issued a circular to all district level drug inspectors for stringent regulation over veterinary use of human diclofenac. Mr. Chauhan also gave technical guidance which can be useful in banning the multidose diclofenac formulations.

## **Rescue/dead vultures**

Our involvement in vulture conservation began with the rescue activity since last 10 years. Kite festival celebrated during 14-15<sup>th</sup> January is responsible for thousands of bird injuries and casualties. We have been actively involved in bird rescue activity and since last 5 years actively associated with Ahmedabad based rescue and treatment organization "Jivdaya Charitable Trust"(JCT). Mr. Kartik Shastri is one of the trustees and Aditya Roy is scientific adviser in this organization. With the

infrastructure of JCT we have treated/ post-mortem 43 Gyps bengalensis from PVSZ area during 2012-13. Out of this 12 were cases of visceral gout. We have also sent tissue samples of these vultures to SACON and VCBC Pinjore for further analysis whenever we got permission from forest department.

Table: vulture rescue/dead from PVSZ CGJ between Jan 2012-Jun 2013

District	Taluka	Alive	Dead	Total
Ahmedabad	Ahmedabad	7	9	16
	Viramgam		6	6
Mahesana	Kadi	3	14	17
Anand	Khambhat		1	1
Surendranagar	Dhrangadhra	2	1	3
<b>Total</b>		<b>12</b>	<b>31</b>	<b>43</b>

Table: Cases of Visceral Gout between Jan 2012-Jun 2013

S.no	Date of rescue	Area of Rescue	Sex	Age
1	19/2/2012	Ahmadabad	M	Adult
2	14/7/2012	Kadi	F	Adult
3	14/7/2012	Kadi	M	Juvenile
4	5/8/2012	Ahmadabad	M	Sub Adult
5	8/8/2012	Ahmadabad	F	Sub Adult
6	19/10/2012	Daslana	Un id	Adult
7	26/1/2013	Kadi	M	Sub Adult
8	7/3/2013	Kadi	M	Sub Adult
9	9/3/2013	Ahmedabad	M	Adult
10	3/5/2013	Ahmedabad	F	Adult
11	10/5/2013	Surendranagar	M	Juvenile
12	24/5/2013	Kadi	M	Sub Adult

### Distribution of subsidized meloxicam and its impacts

The major problem that we realize from the work done in last five years is that meloxicam is costlier than diclofenac and doctors feel that it is less effective. Awareness and advocacy have limits and in spite of legal ban there is a huge spill over of human diclofenac into veterinary market. The only way to prevent this is to make meloxicam so easily and cheaply available that vets/paravets stop using diclofenac on their own. It has to be in a business manner and not a charitable free distribution of meloxicam. Anything given free for commercial use is against ethics and it can't sustain long. Moreover people see free things as lower quality stuff. Vets/paravets have very good private practice which is fully commercial and hence giving free to them is not a good option. So we decided to give meloxicam at cheapest possible price without any profit and no added subsidy to reduce price below cost price. We are really grateful to INTAS pharmaceutical private ltd. for their prompt support for this cause. As JCT is running a veterinary hospital we did direct tie up between INTAS and JCT and started supplying 100ml Melonex (Meloxicam 5mg/ml) injections to vets/paravets in most crucial vulture areas of Ahmedabad, Mahesana and Surendranagar districts. This has started recently from May 2013 and just in one week we sold 500 vials. When we went to vets and paravets as commercial suppliers of meloxicam to our surprise we not only able to trace the smallest

practitioner but they started contacting us for the meloxicam vials. As we are running this on no profit no loss bases we can continue this work without much financial support for long term. Our aim is to flood the area with meloxicam in such way that automatically the market for diclofenac and other painkillers go down and this will impact the whole supply chain. In long term the use of diclofenac would automatically stop. Diclofenac vs Meloxicam is a market and business issue and we think that fighting it in a businessmen manner would be a better option than doing charity and awareness. If our initiative becomes successful for at least two years we hope to see its clear impact on cases of gout and population of vultures in PVSZ central Gujarat.

Our efforts to save vultures have just begun and we have a long way to go. But there is a determination that we would see vultures fly majestically back in the sky of Gujarat like past. We have great support from the enthusiastic young team that is always ready to take up any tasks with a spirit of positivity.

### **Acknowledgements**

SAVE: Saving Asian Vulture's from Extinction	Dept. of Animal Husbandry Govt. of Gujarat
BNHS: Bombay Natural History Society	Commissioner Food and Drugs, Govt. of Gujarat
JCT: Jicdaya Charitable Trust	ZSL: Zoological Society London
BCSG: Bird Conservation Society, Gujarat	Nature Club Surat
Wildlife Institute of India	Vidhyanagar Nature Club
SACON: Salim Ali Centre for Ornithology and Natural History	Manimal for Animals
Gujarat State Forest Department	Shree cultural foundation
INTAS Pharmaceutical pvt. ltd	Dept. of Zoology, MS university Baroda
ANALA: Ahmedabad Nature Lovers association	Dept. of life science, North Gujarat University