



VULTURE RECOVERY PLAN

TAMIL NADU



ARULAGAM



First Saturday of
September



Foreword

Until some years back vulture population was widely spread all over in Tamil Nadu, but now it is confined to Moyar Valley in Nilgiri Biosphere.

Arulagam understood the reality and initiated vulture conservation mission in three years back with the support of Critical Ecosystem Partnership Fund (CEPF) and guidance of Tamil Nadu Forest Department, Bombay Natural History Society and Saving Asia's Vulture from Extinctions.

Past four years, we sensitized variety of stakeholders from veterinary doctors to cattle herders including student community to address this issue. After some good activities and vigorous campaigns, even in the short span of four years we observe some results and this will continue at the same pace to reap more success.

I appreciate and thank all our Arulagam members, supporters, volunteers for their involvement in this venture. We need this amazing support continuously and consistently for achieving our goal. I congratulate Mr. Bharathidasan.S, Secretary, Arulagam for giving effort to draw this recovery plan for vulture species. We hope that implementation of this plan meticulously will yield expected results surely in the coming years.

Karthika Rajkumar
President
Arulagam

20/10/2016



Acknowledgement

Arulagam is working to establish diclofenac free Vulture Safe Zone in Moyar Valley, Nilgiri and Erode districts in Tamil Nadu with the support of the Animal Husbandry Department, District Administration, Family Welfare and Health Department and Forest Department of Tamil Nadu along with all stake holders.

This is the right time to extend our heartfelt thanks to Dr. V.K.Melkani, IFS, Principal Chief Conservator of Forests and Chief Wildlife Warden, gave the permission to carry out the study.

We deeply recognize the contribution of Mr. S.Vijayakumar, IAS former Secretary, Animal Husbandry and Mr. I.Abraham, IAS, Director, Animal Husbandry & Veterinary Services.

We are very grateful to Dr.P.Raghuram Singh, IFS, Additional Principal Chief Conservator of Forests, Mr. Srinivas R. Reddy, IFS, Chief Conservator of Forests, Dr. V.T.Kandasamy, IFS Conservator of Forests and Mr. I. Anwardeen, IFS, Chief Conservator of Forests for their support.

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We also extend our sincere thanks to Thirumathi. Archana Patnaik IAS, District Collector, Coimbatore, Mr. P. Shankar, IAS, District Collector, The Nilgiris, Mr. V.K.Shanmugam, IAS, then District Collector, Erode, for their significant and constructive contributions for including vulture conservation in Grama sabha agenda. We thank panchayat department officials, local body heads and their members for understanding the seriousness of the prevailing problem and supporting us in various ways for conserving vulture species.

We extend our sincere gratitude to Mr. S.Abdul Kader, Director of Drugs Control and Mr. Ko. Sivabalan, Joint Director of Drugs Control for their support.

We would like to thank Mr. C.Sashikumar (Malabar Natural History Society) and Mr. Chris Bowden, Saving Asia's Vulture from Extinctions, (SAVE) for their cooperation in executing this project. We would like to thank Mr. R.Venkitachalam, Biologist, Mr. Prakash, Sociologist, Mr. Paraman, co-ordinator and Mr. P. Arunagirinathan, co-ordinator, of Arulagam for their help in many ways.

Vulture species recovery plan is prepared with the active contribution and comments from Mr. K.Mohan Raj, Save Coimbatore Wetlands, Mr. Lakshminarayanan, Conservation Biologist, Mr. R.Arumugam, Biologist, Anamalai Tiger Reserve, Mr. R Jayapal, Principal Scientist, Salim Ali Center for Ornithology and Natural History Society and Mr. Rahunath Krishna, Conservation Artist.

At this juncture, we express our sincere gratitude to Critical Ecosystem Partnership Fund (CEPF), Central Institute of Classical Tamil, Bombay Natural History Society, World Wide Fund for Nature (WWF - India), Oriental Bird Club (OBC), Royal Society for Protection of Birds (RSPB), and Hill Area Development Programme (HADP), Udhagamandalam, Ashirvadam Foundation, Mohamed bin Zayed Species Conservation Fund, Rufford Foundation, MIVA, TITA, Sriguru Institute of Technology and Brookefield for their support.

Bharathidasan S
Secretary



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Introduction

Vultures are generally social birds, feeding and roosting in groups. These vultures are split in to two groups, namely Old World vultures which belong to the family Accipitridae comprising of 16 species and seven species of New World vultures belonging to the family Cathartidae (Feduccia, 1996). They are long-lived birds with a life span of up to 30 years recorded in captivity. They mature slowly too and start to breed only at the age of six or seven years. Genus Gyps, species breeds in loose colonies on trees or cliffs where twig nests are made. Gyps vultures lay only one egg in a clutch; two eggs in a clutch occasionally recorded in OWBV species; the incubation period is 45 to 55 days and the young birds fledge when they are about three to four months old (Ali & Ripley, 1983).

Importance of Vulture

Vultures are an important component of the ecosystem performing the role as scavengers by consuming dead and decaying animal carcasses, thereby keeping the environment clean and healthy. Vultures are known to feed on rotting carcasses of ungulates, which may have died due to deadly diseases like Anthrax, Foot-and-mouth disease etc. A flock of vultures can consume a huge carcass within a half an hour and left over will be the bones, hooves and horns.



Ecosystem service by the Vulture

- Provides a valuable ecosystem service by scavenging on animal carcasses, thus destroying pathogens, which grow rapidly on rotting meat.
- Plays a crucial role in nutrient recycling
- Prevents contamination of water bodies
- Controlled zoonotic diseases which includes parvo, brucellosis tuberculosis, foot and mouth disease, rabies, anthrax and etc. (Swan *et al.*, 2006)

Empty sky and its Consequences

- Twenty years ago there were tens of millions of vultures in the Indian subcontinent. Now they and their services are nearly all gone.
- Increasing in populations of feral dogs
- Increasing the risk of dog bites, rabies and other unknown diseases and public nuisance
- Increasing the chance of pollution in water bodies
- Dealing with these problems imposes substantial extra costs on government agencies and charities.

Flight, foraging and feeding behaviour

Vultures scavenge for food and are extremely efficient in finding carcasses. Generally they do not fly early in the morning and wait till the day warms up, sunning themselves on treetops or on the open ground. Once the day becomes hot and thermals (columns of hot air) rise, they start soaring, gaining height assisted by the thermals. Soaring vultures can stay airborne foraging for hours together. Foraging vultures have been known to range very far and wide, even more than 100 km in a day. With their extremely powerful eyesight, the foraging vultures will either find the carcass themselves or by observing the activity of other individuals or other scavengers. Once the carcass is located, a number of vultures (kettle) will congregate in a short time and start feeding on it, with much posturing and squabbling. Normally, vultures can take sufficient food into the crop at one meal which will last for several days. The vultures generally feed in groups of the same or mixed species (*Ali & Ripley, 1983*).



Thirukalukundram
Sacred vultures being fed by priest (L)

Egyptian Vulture in Flight (R)



Vulture species in India

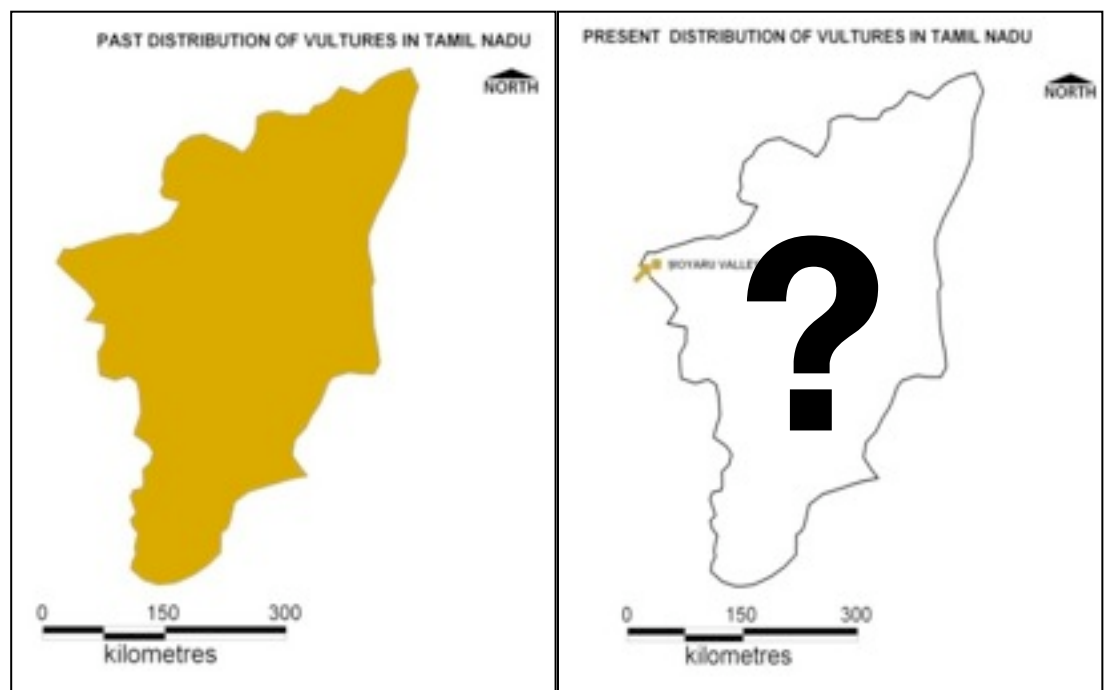
There are 23 species of vulture in worldwide. Out of these, nine species of vultures have been reported in the Indian sub-continent (*Ali & Ripley, 1983*)

S.Nu	Common Name	Scientific Name	R/M	Status
1	Oriental White-backed Vulture (OWBV)	<i>Gyps bengalensis</i>	R	CR
2	Slender-billed Vulture(SBV)	<i>Gyps tenuirostris</i>	R	CR
3	Indian Long- billed Vulture(LBV)	<i>Gyps indicus</i>	R	CR
4	Egyptian Vulture (EV)	<i>Neophron percnopterus</i>	R	E
5	Red-headed Vulture (RHV)	<i>Sarcogyps calvus</i>	R	CR
6	Indian Griffon Vulture	<i>Gyps fulvus</i>	M	LC
7	Himalayan Griffon	<i>Gyps himalayensis</i>	M	NT
8	Cinereous Vulture	<i>Aegypius monachus</i>	M	NT
9	Bearded Vulture/ Lammergeier	<i>Gypaetus barbatus</i>	M	NT

* Resident (R) Migratory (M), Critically Endangered (CR), Endangered (E), Near Threatened (NT), Least Concern (LC)

Slender-billed Vulture, which was not distinguished as a separate species from Long-billed Vulture until recently (*Rasmussen and Parry 2001*), is locally common in the north and north- eastern parts of the Indian sub-continent (*Ali and Ripley, 1983*).

Vultures in Tamil Nadu



Four species of vultures were recorded Tamil Nadu. They are

1. Oriental White-backed Vulture (OWBV)
2. Indian Long-billed Vulture (LBV)
3. Red-headed Vulture (RHV) and
4. Egyptian Vulture.

All these vultures were present in all over Tamil Nadu. Sight records gathered from birdwatcher show that vultures were present in Chennai, Chenglepet, Tanjore, Coimbatore, Tirunelveli, Madurai, Sivagangai, Ramnad and etc. Vultures were often sighted at leather tanneries in Chrompet (*Chennai*), Vaniyambadi and Dindigul. Vulture had been recorded in Dindigul and it was perching in the pillar of leather tanneries (*Bharathidasan.S, Personnel observation, 1992*). In Chrompet, numbers of vultures was as high as crows (*Neelakantan, 1958*).

In the Vallam Village on the outskirts of Tanjore, a flock of White-backed Vultures had assembled regularly to feed on the left over of cattle killed for meat (*Dr.K. Ratnam*). Vulture nest had also been recorded in coconut tree in Tirunelveli. Farmers had driven the bird away due to loss of yield from the trees and inconvenience caused during plugging (*Raja, Nanguneri, personnel interview*).

Vultures were seen in Chinnar, Palakkad and Thirukalugu Kundram (*C.Sasikumar and Sivaprasath personnel observation*).



Salient features of Moyar valley

The Moyar Valley is located between the latitude and longitude of 11.701289°, E 76.587062° to 11.472443°, E 77.147608°

- Perennial and semi perennial rivers drain into River Moyar
- Three tiger reserves such as Mudumalai, Bandipur and Sathyamangalam are located along the Moyar river basin.
- Holds high density of terrestrial wild fauna, tiger, Asian elephant and domestic cattle – bovinds
- Part of Western Ghats – biodiversity hotspot
- Part of Nilgiri Biosphere Reserve
- Largely forested by dry thorn and dry deciduous forests
- Availability of suitable nesting and roosting habitat including cliff along the Moyar Valley
- Diclofenac usage is remarkably less primarily due to its remoteness and the presence of less but committed veterinarians

Vulture Population in Moyar valley

- 135 Oriental White-backed Vultures, 17 Indian Vultures and 5 Red-headed Vultures were recorded near an animal carcass in the Sathyamangalam Tiger Reserve (STR) of Moyar Valley during 2013-14.
- 2 Egyptian Vultures were occasionally recorded in the Hasanur area and Bhavanisagar dam site in Sathyamangalam Tiger Reserve.
- During the synchronized survey, 2014 results showed that the presence of OWBV (N=102), LBV (N=3) and a RHV in Nilgiri North Forest Division (NNFD) and Sathyamangalam Tiger Reserve (STR) of Moyar Valley.
- During the Raptor survey, 2015 results showed that the presence of OWBV (N=120), LBV (N=20) and RHV (N=10) in Nilgiri North Forest Division (NNFD) and Sathyamangalam Tiger Reserve (STR) of Moyar Valley.



River Moyar Valley



- The Critically Endangered OWBV breeds in Mudumalai Tiger reserve and Nilgiri North forest division of Moyar Valley are ideal breeding ground. There are 24 active nests of OWBV in *Jagalikadavu*, 12 active nests in Arekadavu 3 nest in Kumparakadavu, 3 active nests in *Kathalai padugai* in Akkaraipatti were recorded. Three nests are located in *Nilakottai* range of *Pennai* beat.
- There were 31 pairs of White-backed vulture nesting population observed on the trees along the riparian habitat (Map 4.1) in Nilgiri North Forest Division (NNFD) in the Moyar Valley. Five pairs of Indian vulture were breeding on the rocky cliffs in both NNFD and STR (Map 4.2) of Moyar Valley. Only one clutch was recorded throughout the study period (Venkitachalam, 2014).
- Twigs, dry leaves, grass, thermocol, sometimes even polythene covers were observed to be used as nesting materials by OWBV in Jagalikadavu and Siriyur areas (Ramakrishnan, et al, 2014)
- The historical records of the nest locations also were collected and it reveals that the R H V also used to nest over Anakkalmariamankoil and there are six old nesting sites of OWBV were recorded viz; Arakadavupallam, Masikoil, Marvakandi Dam, Doddanare, Gulithurai patti, and Thotikadau.
- Abandoned nest of OWBV were recorded in Thoppala and Sikalla of NNFD.



Vultures feeding on a Gaur carcass in Moyar Valley

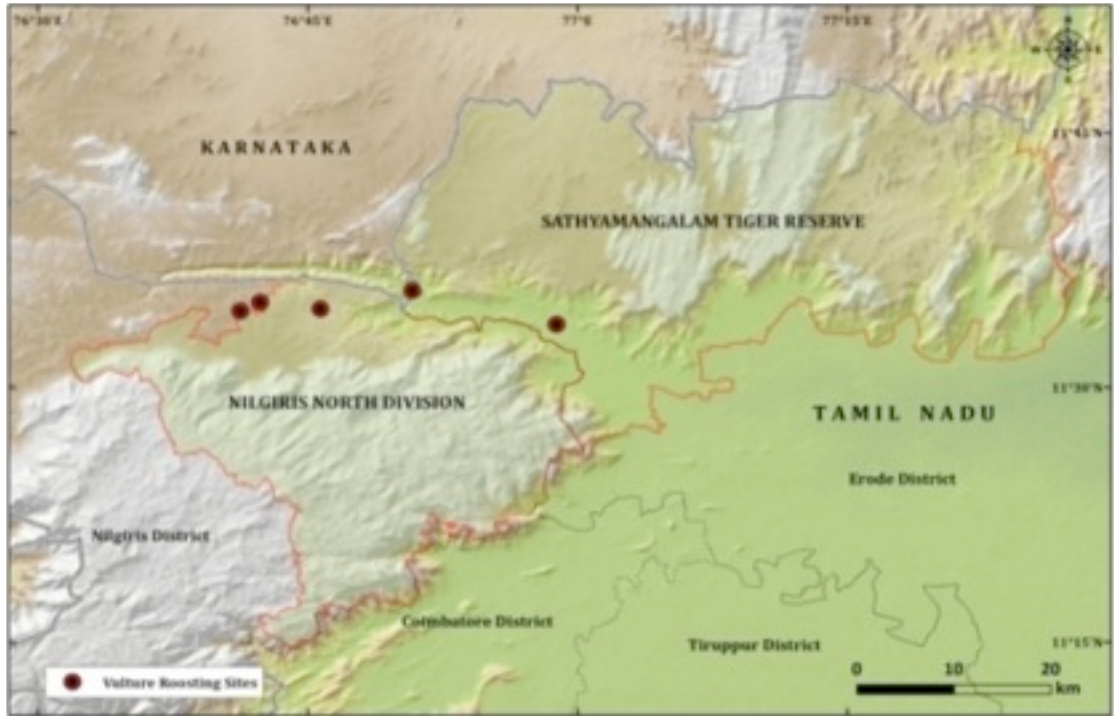


Breeding Colonies of Vultures in Moyar valley

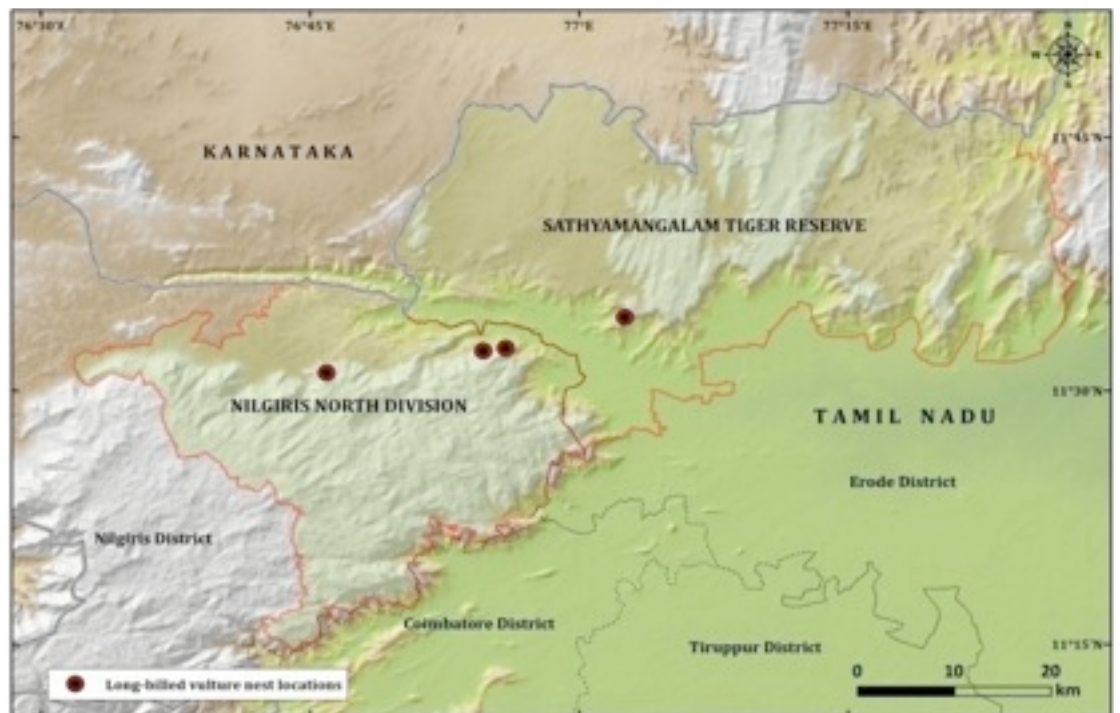
HIGHLIGHTS

The first breeding records of Indian long-billed vultures (five pairs) were recorded in NNFD and STR of Moyar valley. This is a breakthrough in Tamil Nadu.

White-backed vultures nest distribution in Moyar Valley



Indian Long-billed vultures nest distribution in Moyar Valley



Cause of population declines

1. DICLOFENAC

Veterinary use of the Non-steroidal anti-inflammatory drug (NSAID) diclofenac is the major cause of these declines. Diclofenac has been used to treat symptoms of disease (mastitis) and injury in domesticated ungulates in many parts of the Indian subcontinent since the 1990s. The effects of diclofenac have been studied experimentally on captive individuals of three of the global total of eight *Gyps* vulture species. In all of the species tested, death occurred within a few days of treatment with a single dose of diclofenac and severe kidney damage and extensive visceral gout (accumulation of the excretory product uric acid) were observed in postmortem.



2. PERSECUTION BY CATTLE HERDERS THROUGH POISONING

Carnivores living in the edge of core protected areas, particularly vulnerable to human kleptoparasitism, snaring (non-selective) and direct persecution. Cattle herders and farmers target carnivores such as tiger and leopard that have killed their cattle by poisoning the carcass.



Common methods used by local farmers for retaliatory killing is by poisoning left over carcass by carnivores and baiting by poisoned meat. Malicious poisoning does not end with the target animal, but it also affects other wildlife such as vultures, Striped Hyaena, jungle crows and wild boars. In poisoning cases, the willingness to investigate and prosecute the offenders by the forest department is prone to more conflicts with local people. They hide the incidents citing them as natural deaths (*Davidar and Davidar, 2002*).

3. CARCASS UNAVAILABILITY

Methods for the disposal of cattle carcasses are changing nowadays. Carcasses of domesticated ungulates are scarce due to selling of age old cattle and hygienic disposal methods which limit the vulture population.

In Protected Areas also sometimes elephant and guar carcasses are buried or burnt rather than disposing off in open area to avoid the spread of foul smell/diseases and this turn causes shortage of food availability.

4. HABITAT DEGRADATION

Tree felling, cliff mining, forest fire, road formation, tourism and festivals which affects vulture to some extent.

CURRENT STATUS

As per International Union of Conservation of Nature's (*IUCN-2014*) red list for birds, OWBV, LBV and RHV are listed as critically endangered. Egyptian vulture is in endangered category. Vultures are categorized as Schedule 1 species as per wildlife protection act.



Conservation Responses

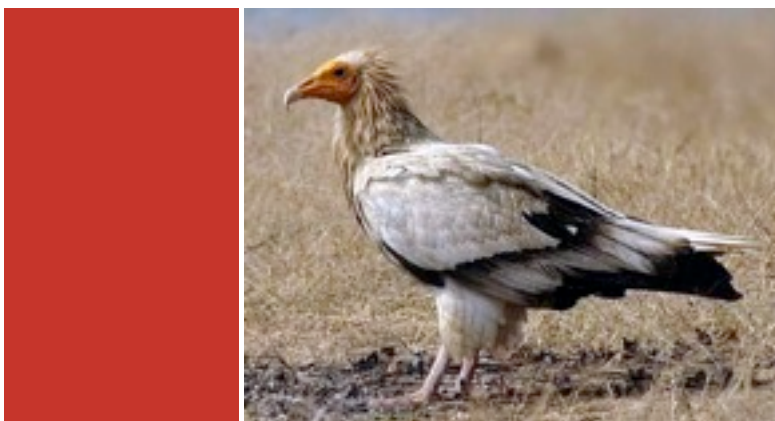
BY GOVERNMENT

Soon after research had indicated the severity of the effects of diclofenac on vulture populations, the government of India, Pakistan, Nepal and Bangladesh has taken actions to prevent the contamination of vulture food supplies with this drug. India's National Board for Wildlife recommended a ban on veterinary use of diclofenac on 17 March 2005. In May 2006, a directive from the Drug Controller General of India was circulated to relevant officials, requiring the withdrawal of manufacturing licenses for veterinary formulations of diclofenac. This directive was further strengthened in 2008, when it was made an imprisonable offense to manufacture retail or use diclofenac for veterinary purposes.

BY ORGANIZATIONS

Conservation actions undertaken so far, in addition to the restrictions on diclofenac use, include surveys to estimate the effectiveness of the ban on veterinary diclofenac, regular surveys of vultures to estimate their population trends, awareness raising to make the ban more effective, advocacy for enforcement of the ban, contact with the pharmaceutical industry, testing to establish which veterinary drugs are safe and which are harmful to vultures, the creation of Vulture Safe Zones in which intensive campaigns are undertaken to remove toxic NSAIDs from the food supply of the remaining small populations of wild vultures, and conservation breeding to provide a secure captive population and a surplus of captive-bred birds for reintroductions in the wild.

Bombay Natural History Society (BNHS) is doing commendable work in this regard. Other organizations such as Malabar Natural History Society, Neo human Foundation, Corbett Foundation, The Bird Conservation Society of Gujarat, Nature Club Surat, Sagayadhri Nisarag Mithra, Save Tiger First and Arulagam are actively involving in this field.



There was little change in the prevalence and concentration of diclofenac between a survey before the ban and one conducted soon after its implementation, with the percentage of carcasses containing diclofenac in these surveys estimated at 10.8 and 10.7%, respectively.

- Richard Cuthbert et al. 2011


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NEW DELHI, SATURDAY, JULY 5, 2008/ASADHA 14, 1930



MINISTRY OF HEALTH AND FAMILY WELFARE
 (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, 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 (23 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, Jt. Secy.

2540 GI/2008

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NEW DELHI, FRIDAY, JULY 17, 2015/ASHADHA 26, 1937



MINISTRY OF HEALTH AND FAMILY WELFARE

(Department of Health and Family Welfare)

NOTIFICATION

New Delhi, the 17th July, 2015

G.S.R. 558(E).—Whereas certain rules further to amend the Drugs and Cosmetics Rules, 1945, was published vide notification of the Government of India in the Ministry of Health and Family Welfare, Department of Health and Family Welfare vide number G.S.R. 503(E), dated the 14th July, 2014, as required by section 12 read with section 33 of the Drugs and Cosmetics Act, 1940 (23 of 1940), inviting objections and suggestions from all persons likely to be affected thereby before the expiry of a period of forty-five days from the date on which the copies of the Official Gazette of the said notification were made available to the public;

And whereas copies of the Gazette were made available to the public on the 14th July, 2014;

And, whereas, objections and suggestions received from the public on the said rules have been considered by the Central Government;

Now, therefore, in exercise of the powers conferred by section 12 read with section 33 of the Drugs and Cosmetics Act, 1940 (23 of 1940), the Central Government, after consultation with the Drugs Technical Advisory Board, hereby makes the following rules further to amend the Drugs and Cosmetics Rules, 1945, namely:—

1. (1) These rules may be called the Drugs and Cosmetics (Sixth Amendment) Rules, 2015.
- (2) They shall come into force on the date of their publication in the Official Gazette.
2. In the Drugs and Cosmetics Rules, 1945, in rule 105, in sub-rule (2),
 - (i) in the second proviso, for the words "Provided also that", the words "Provided further that" shall be substituted;
 - (ii) in the third proviso, for the words "Provided further that", the words "Provided also that" shall be substituted;
 - (iii) after the third proviso, the following proviso shall be inserted namely:—
"Provided also that Diclofenac injection for human use shall be in single unit dose pack only.";

[F. No.18-6/2013-DC/DFQC]

K. L. SHARMA, Jr. Secy.

Note.— The principal rules were published in the Gazette of India, vide notification No. F.28-10/45-H (1), dated the 21st December, 1945 and last amended vide notification published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), vide G.S.R. 390 (E), dated the 18th May, 2015.

Vulture Safe Zone

The Objective is to establish Vulture Safe Zone through targeted awareness activities and sampling for at least a 100km^[1] radius (30,000km²) so that no diclofenac or other veterinary drugs that are toxic to vultures are present in cattle carcasses (main vulture food), such that it can be declared as a Vulture Safe Zone. This area is decided based on the study of Vulture foraging range which is more than 100 km/ day. This concept were pioneered in Nepal, and introduced in other parts of the country.



Map showing 100kms radius from vulture nesting site in Nilgiris.

A BRIEF ON VULTURE SAFE ZONE WORK BY ARULAGAM

Till the fag end of the last century, vultures were widely prevalent in Tamil Nadu and now it is a matter of grievous concern that they inhabit only small pockets in and around Nilgiri District, notably the Moyar Valley. With a deep felt desire, a dream, a vision to once again facilitate vultures circling the skies majestically, an ambitious program was launched in the year 2013. The project covered about 100 sq.km of areas around Coimbatore, Tirupur, Erode and the Nilgiri districts in Tamil Nadu.

As, the first-step, we identified the targeted stake holders in our working area. We conducted attitude & awareness survey and diclofenac prevalence survey. Subsequently we had a meeting with Nilgiri Drug and Chemist Association to inform them about our findings and addressed to them not to sell diclofenac without proper prescriptions. A human chain rally was conducted in Nilgiris. The rally was attended by Chairman, town panchayth, Udagamandalam, District Collector, Project Director (HADP), District Forest Officers, Brigade members, students and animal lovers in Nilgiris. During the rally warning message poster was released by the District Police Commissioner and it was received by the President of the Drug Association. Thus, diclofenac warning message was effectively conveyed to the crucial stake holders.

We engaged tribal village youth by supporting a district level volleyball tournament, which was titled as '**Vulture Trophy Volleyball Tournament**'. After the event we grouped them as a '**Vulture Brigade**' and appealed to them to watch for diclofenac intrusion to cattle in their respective villages.

To attract the family and children of the Veterinarians, Cattle Owners and other stake holders in our working area, we conducted puppetry show to demonstrate the importance of vultures in the region and steps to conserve them.

And various awareness programmes were conducted for reaching different stake holders.

- Pamphlets portraying about the role of individual to safeguard vulture species were printed and shared widely to the targeted audience. Pamphlets also included gazette order about the banned drug diclofenac.
- The niche accorded to raptors in general, and vultures in particular in the ecological chain was explained to the stakeholders during the various awareness programs conducted by Arulagam.
- The ominous attribute ascribed vultures as signs of bad omen was sought to be supplanted by the benevolent attribute of how vultures scavenge carrion and thus contribute to check the spread of disease causing germs and ensuring a clean micro-environment.
- Exhibitions were conducted during milk cooperative society monthly meetings, drug association meetings in the Nilgiris, Coimbatore, Chennai etc.,
- '**Gyps carnivals**' were conducted with fanfare showcasing models of various vulture species, posters with eye-catch in slogans, pamphlet distribution and so on.
- Places where people converge - eg Temple festivals, cattle melas, Veterinary camps and Mahatma Gandhi Rural Employment Guarantee scheme workers were targeted to spread the message of vulture conservation.
- We also voluntarily participated in veterinary association meetings and inaugural functions of new veterinary clinics and used the opportunity to spread the conservation message to stakeholders.
- Motor cycle rally, street corner meetings, human chain and street theatre were conducted for spreading awareness across the targeted districts.
- Snake and ladder game were redesigned and conveyed the message on vulture conservation. The ill effects of veterinary pain killers such as Aceclofenac, Ketoprofen, Nimesulide was highlighted in the game.
- '**Vet for Vulture**' event were conducted for Veterinary doctors, Pharmacists and Livestock Inspectors.



IMPACTS

- Resolutions to protect vulture species and eliminate diclofenac usage for veterinary purpose were passed at the *Gram Sabhas* (local administration) in the districts of Coimbatore, The Nilgiris and Erode. With proud, we would like to record that it is a pioneering model even at the National level
- At the behest of Arulagam the Animal Husbandry Department has withdrawn the procurement of Ketoprofen (another drug akin to diclofenac) which has been proved inimical to vultures
- Circulars with warning message were issued to the Veterinary Doctors in and around NBR about the misuse of the banned drug.
- Due to the intervention of 'Arulagam', the Drug Control Department, Government of Tamil Nadu is also undertaking periodic inspections so as to ensure that the banned drug is not available in core areas.
- 'Vulture Conservation Agenda' is included in the Society for Wildlife Interface and Forestry Training (SWIFT) and management plan of the Nilgiri North Division of Forest Department, Government of Tamil Nadu.
- The most noteworthy result of our campaign has been to instill a positive appreciation in the minds of the people on the significance of the beneficial scavenging service rendered by the Vultures.



What remains to be done?



Contamination of cattle carcasses with diclofenac has declined, but it has not been eliminated yet. Diclofenac intended for human use is easy to obtain, and easy to mis-use for the treatment of livestock because pharmaceutical companies market the drug in larger vials than are required for human medicine. Consequently, carcasses of wild vultures continue to be found with traces of diclofenac in their tissues and post-mortem findings continue to indicate that diclofenac poisoning was the cause of death. Recent death of vulture postmortem also shows the presence of diclofenac in Mudumalai.

Other NSAIDs are also in legal use which may be harmful to vultures, but have not yet been tested. Aceclofenac, an NSAID that is likely to be metabolized into diclofenac after being administered to cattle, is beginning to be used. It is likely to kill vultures that feed on contaminated carcasses.

There are hopeful signs, but the following serious concerns remain. The Vulture population that exists at present is precariously small and will continue to remain vulnerable to adverse events until numbers have increased substantially. This vulnerable period will be long because the low natural reproductive capacity and long duration of immaturity of vultures means that, even under the most favourable conditions, the shortest period in which a wild vulture population can double in size is about ten years. The rate of the recent population decline was much more rapid than the most rapid possible rate of increase, with the population of the species most strongly affected by diclofenac halving every year in India.

Currently, vultures are scarce or absent which demonstrates that protection of natural ecosystems alone is insufficient for the effective conservation of vulture populations. Parks are too small to achieve this on their own. Satellite tagging has shown that vultures range over huge areas in search of carrion and so the presence of diclofenac-contaminated cattle carcasses around the margins of even the largest of the National Parks has been sufficient to eliminate or greatly reduce their vulture numbers.

Collective Action

We strongly believe that 'Vulture Conservation' needs collective action and efforts from various government departments, institutions, organizations and individuals. Arulagam is ready to cooperate with other vulture conservation organizations for bring back the vulture from the brink of extinctions.



Blueprint for Vulture Conservation

The ultimate objective is to recover the populations of Gyps vulture species up to the levels where they are secure against future threats and are providing services and functions in both natural and artificial ecosystems. Hence, it is time to establish a more robust long-term vision for the recovery plan and future safeguarding of South Asia’s vulture populations, which links together all the necessary strands of regulatory and conservation action with scientific research and monitoring. This programme is outlined in the following tables –

1. ACTIVITY FOR NATIONAL LEVEL	
Aim -1 Ban the veterinary use of drug Aceclofenac, Flunixin, and Ketoprofen which are harmful to vultures.	
Activities Requesting to issue Gazette Notification under 499 (E) by using the power under section 26A of the drugs and cosmetics act, 1940, for prohibiting the manufacture, sale, distributions for animal use.	Activity Owner Drug controller General of India. Union Ministry of Health and Family Welfare.
Aim -2 Declare declining vulture population as ecological disaster	
<ol style="list-style-type: none"> 1. Central Government may issue directions under section 62 of National Disaster Management Act, 2005 to prevent vulture decline. 2. National Plan, State Plans and District Plans to be amended suitably to include eliminating threats to vulture. 	Drug controller General of India. Union Ministry of Health and Family Welfare.



Legend

	High Priority
	Medium Priority



2. ACTIVITY FOR STATE LEVEL	
1. Removal of harmful drugs from veterinary use for saving vulture species.	
Aim -1 Curb leakage of human formulations of Diclofenac, a banned drug for veterinary use	
Activities 1. Issuing directives to form a District level monitoring committee under the chairmanship of the respective district collectors of Nilgiri, Erode, Coimbatore and Tirupur districts by involving District forest officer/ Forest Veterinary Officer / Joint Director & Assistant Director/ Special officer, Animal Husbandry/ Assistant Director of Drugs control/Drug Inspector/ General Manager and Assistant General Manager from Aavin / Voluntary organizations and others. This committee will meet once in three months to monitor the activities taken by the assistant director, drug controls	Activity Owner Secretary, Public Health Department & Director of State Drug Control, Tamil Nadu Medical Service Corporation. Secretary and Director Animal Husbandry Department
2. Assistant Director, Drug Control may be advised - to conduct periodic raids and spot checks in pharmacy shops - to submit the monthly compilation record of sale of diclofenac (Prescribed Doctor's name, Registration Number, Batch Number, Patient Name) - to take legal action under drugs and cosmetics act, 1940, Section 28 B, against the offenders And to arrange for adequate publicity should be given in the media	Secretary, Public Health Department & Director of State Drug Control, Tamil Nadu Medical Service Corporation.
3. Warning slogan about diclofenac may be printed on letter heads that are in use for official correspondence. <i>("Diclofenac for cattle usage was banned in 2006. It is against the law to sell, buy or administer diclofenac to cattle")</i> 4. Instruction may be given to staff to display above message during the Animal Health camps, artificial insemination camps, cattle free distribution functions, native breed growers meetings, milk society secretary meetings and others	Secretary & Director, Animal Husbandry Department
Aim -2 Ensure timely supply of safe drug meloxicam in adequate quantities to the dispensaries.	
5. Joint Directors in the districts of Nilgiri, Erode, Tirupur and Coimbatore districts may be instructed to ensure up keeping of adequate stocks of meloxicam by maintaining its timely supply.	Secretary & Director of Animal Husbandry Department



<p>Aim - 3</p> <p>Procure vial of 20mg/ml meloxicum instead of 5 mg/ml for effective animal cure.</p>	
<p>Activities</p> <p>Supply order may be issued to the companies that manufacture Meloxicam to produce vials of 20mg/ml instead of 5 mg/ml for effective animal cure.</p>	<p>Activity Owner</p> <p>Secretary and Director of Animal Husbandry Department</p>
<p>Aim - 4</p> <p>Establish an alert system for veterinary drugs and a system for testing traces of Diclofenac, Aceclofenac, Flunixin, Ketoprofen in cattle carcasses.</p>	
<p>1. The State Government may initiate action to issue appropriate Government Order (G.O.) for testing the traces of diclofenac and other Non Steroidal Anti Inflammatory Drugs (NSAIDs) in cattle carcass at Erode, Nilgiri and Coimbatore districts.</p> <p>2. Laboratory of the TANUVAS may be utilized for above said reason</p> <p>3. Veterinary research scholars may be involved is sample collection and survey</p> <p>4. Surveys and analyses of cattle carcasses with results for safety testing to draw attention of governments to potentially hazardous drug</p>	<p>Secretary and Director of Animal Husbandry Department</p>
<p>2. Ensuring safe carcass availability and prevent carcass poisoning</p>	
<p>Aim - 5</p> <p>Make wildlife postmortem rules in line with vulture conservation requirements by Government of Tamil Nadu by exercising the powers conferred by clause © of sub-section (2) of section 64 of the wildlife (protection) Act, 1972 (Central Act 53 of 1972).</p>	
<p>Activities</p> <p>Rules may be framed</p> <p>1. In forests and adjoining areas, carcasses of wild animals such as elephant, gaur, feral buffalo and other mammals should be left alone to be fed by vultures and other scavengers, instead of burying or burning them.</p> <p>2. If any wildlife carcass found near human settlements, arrangements to move such carcasses to interior forest areas as per the advice of forest veterinary officer.</p> <p>3. Leaving the domestic carcass for scavengers by giving compensation as per the advice of forest veterinary officer.</p> <p>4. Providing funds for exercising such activities.</p>	<p>Activity Owner</p> <p>Principal Secretary, Principal Chief Conservator of Forest (PCCF), Chief Wildlife Warden of Forest Department. Legal Department.</p>

Aim - 6	
Prevent carcass poisoning	
Activities	Activity Owner
<ol style="list-style-type: none"> 1. Single window system may be introduced for scrutinizing the cattle compensation for speedy process 2. Increasing the compensation amount 3. Instruction may be given to fixing camera traps near the carcass and monitor it. 4. Exclusive vigilance wing may be established 	Principal Secretary, PCCE, Chief Wildlife Warden, Forest Department
3. Research & monitoring activities by Chief Wildlife Warden	
Aim - 7	
Monitor wild vultures with Geo positioning System (GPS) with Platform Transmitter Terminal (PTT)	
<ol style="list-style-type: none"> 1. Develop method for GPS (PTT) for vulture tracking. 2. Capturing & tagging of wild vulture and monitoring 	Chief Wildlife Warden
Aim - 8	
Recording unusual death of vulture and easy facilitation.	
<ol style="list-style-type: none"> 1. Provide instructions to staff for compulsory recording of dead vultures if any, by following the norms of Schedule 1 bird 2. Issuing directives to send tissue sample of vulture carcasses readily to BNHS/ SACON for further examining. 3. Publishing the result. 	Chief Wildlife Warden
Aim - 9	
Test traces of NSAIDs especially diclofenac, ketoprofen and aceclofenac in cattle carcasses in forest area and vulture carcass.	
<ol style="list-style-type: none"> 1. Testing procedure may be framed with the guidance of SACON and MoEFCC, New Delhi 	Chief Wildlife Warden



4. Habitat protection for long term conservation	
Aim - 10 Protect vulture habitat	
Activities Notify Moyar Wildlife Sanctuary for vultures under section 26 A (1) (b) of Wildlife (Protection) Act 1972 Central Act 53 of 1972 by including the forests of Nilgiri North Forest Division.	Activity Owner Secretary, PCCF, Chief Wildlife of Warden, Forest Department
Aim - 11 Establishing Interstate forum for monitoring vulture population	
Conducting interstate meeting with stakeholders in neighboring vulture ranging State like Karnataka and Kerala for addressing and mitigating the problem faced by vulture species.	Secretary, PCCF, Chief Wildlife of Warden, Forest Department
Aim - 12 Create corpus fund	
Corpus fund may be created for conducting capacity building, training, celebrating International Vulture Awareness Day, ensuring carcass availability, establishing vulture rescue center etc.	Secretary, PCCF, Chief Wildlife of Warden, Forest Department
Allotting corpus fund for various advocacy activities, advertisements in veterinary journals and medias about banned drug, etc.	Secretary, Finance Department
Aim - 13 Formation of Wildlife Range in Forest divisions	
Notify Moyar Wildlife Sanctuary for vultures under section 26 A (1) (b) of Wildlife (Protection) Act 1972 Central Act 53 of 1972 by including the forests of Nilgiri North Forest Division.	Secretary, PCCF, Chief Wildlife of Warden, Forest Department
Aim - 14 Establishment of Eco Sensitive Zone / Vulture Safe Zone	
Vulture Safe Zone to be notified as ESZ	Secretary, PCCF, Chief Wildlife of Warden, Forest Department





5. Recommendations for Eco Sensitive Zone / Vulture Safe Zone			
S.No	Activity	Prohibited / Regulated / Permitted	Remarks
1	Commercial mining	Prohibited	Long Billed Vulture (LBV) prefers rock cliffs for roosting and nesting. Damage to these areas with activities like mining should be totally banned especially along Moyar valley, Ebbanad, Kodanadu
2	Developmental activities along river banks and hill slopes	Prohibited	Mountain facades, river banks, rocks and caves to be protected from developmental activity along the nesting and roosting site in Nilgiri North Forest Division
3	Road formation	Prohibited	Roads which cut through vulture nesting habitat should be closed or diverted; no new roads close to the nesting or roosting sites should be constructed in Siriur hamlet.
4	Felling of trees	Regulated	If any nesting trees found outside the forest area, compensation may be given to the owner of the trees
5	Setting up of windmills	Prohibited	Probability of vultures getting hit by the blades of the windmills. Setting up of Windmill in vulture foraging area (100 k.m. radius from Mudumalai) to be totally banned
6	Erection of electrical cable and high tension wire	Prohibited	Promote underground cabling in Boothanatham village which is close to the nesting site and remove overhead transmission lines
7	Disposal of diseased poultry carcass	Prohibited	Poultry carcass in Vulture foraging area should be hygienically disposed
8	Tourism	Regulated	Vulture tourism could potentially help in garnering more support for their conservation in the wild. Exploring by drone to be thoroughly monitored.
9	Selling harmful drugs in Medical shops	Prohibited	Harmful Drugs such as Diclofenac, Aceclofenac, Ketoprofen, Flunixin are harmful to vulture.

Our Collaborators & Supporters



Tamil Nadu Forest Department



Get Involved

Arulagam is working to establish Diclofenac free Vulture Safe Zone in Tamil Nadu with the support of stakeholders. We strongly believe that this is collective action of all the stakeholders. We invite you to be a part of this conservation activity in establishing Vulture Safe Zone in Tamil Nadu.

All donations made to Arulagam are exempted under section 80G of the Income Tax Act.



Mr. Bharathidasan, Secretary, Arulagam has been awarded as Biodiversity Hotspot Hero by Critical Ecosystem Partnership Fund (CEPF) based on the exemplary work on vultures in Western Ghats.



Arulagam is a registered society working towards conservation of nature and wildlife.

This report was prepared in October 2016 based on SAVE Recovery Plan Blueprint.

ARULAGAM

62, G.V Residency
Sowripalayam
Coimbatore - 641 028

Field Station -1
Vulture Conservation Center
Moyaru, The Nilgiris - 641 222

Field Station -2
No10, Ex-Military Colony
Bhavani Sagar - 638 451

Call us : +91 98432 11772
E-mail: arulagamindia@gmail.com
Website: www.arulagam.org

