

Vulture Conservation Breeding Centre, Pinjore, Haryana

Annual Report for the period

1st April 2019 - 31st March 2020



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1. Report of the Officer-in-charge

The Jatayu Conservation Breeding Centre, Pinjore, located at Jodhpur village on the edge of the Bir Shikargaha Wildlife Sanctuary is a collaborative project of the Forest and Wildlife Department, Haryana and Bombay Natural History Society. The centre was established to save the three Critically Endangered Gyps species of vultures viz. White-backed vulture, *Gyps bengalensis*, Long-billed vulture, *Gyps indicus* and Slender-billed vulture, *Gyps tenuirostris*, from looming extinction. The main objective of the centre is to house and breed 25 pairs of each of the three species and release 100 pairs of each of the species, within ten years from the beginning of the release programme. The release programme was initiated during 2015-16.

The centre has a Governing Council which is chaired by the Addl. Chief Secretary, Department of Forest and Wildlife, Government of Haryana. The PCCF and Chief Wildlife Warden, Haryana is the Member Secretary.

a. Vultures at the centre

A total of 354 vultures, of which 185 were Long-billed, 124 White-backed and 45 Slender-billeds were housed at the centre. This is the highest number ever held in any Gyps vulture conservation breeding facility anywhere in the world.

The breeding of vultures was very good during the season of 2019-20. A total of 40 vulture nestlings hatched of which 20 were of White-backed vulture, 14 of Long-billed vulture and 6 of Slender-billed vulture. This is the highest number of Slender-billeds hatched till now in captivity. Artificial incubation and double clutching helped in achieving good breeding success.



b. The 12th meeting of the Governing Council of the Jatayu Conservation Breeding Centre

(JCBC), Pinjore was held under the Chairmanship of Sh. Alok Nigam, IAS, Addl. Chief Secretary to Govt. of Haryana, Forest & Wildlife Department on 28th July, 2020 at 11:30hrs, in the Committee Room, Van Bhavan, Panchkula.



Highlights of the Meeting

i. Preparations for Vulture reintroduction or release programme

The Member Secretary informed the Governing Council Members that the Centre will be releasing eight White-backed vultures in the wild this year and requested the Chairman to invite the Honorable Forest Minister to do the honor. It was proposed to release 6 captive bred and 2 wild caught adult White-backed vultures in the wild. These vultures would be tagged, which would help in monitoring their movements. All the birds will be between 2-5 years of age. If no drug related mortality was encountered within one year of release, 10 more White-backed vultures would be released in the subsequent year and then on 20-40 birds would be released every year.



Presently, these birds regularly interact with the free ranging birds which are attracted just outside the aviary by regularly providing food. These birds will be released once it is ensured that they had good interaction with the free ranging birds and would form a flock

with them once they are released. It would also be ensured that habitat in a radius of 100 km had low prevalence of diclofenac, the food availability was good and there is no other threat to vultures.

ii. Procurement of tracking devices, Platform Terminal Transmitters (PTTs), for the Vultures

The Chairman was informed that the centre had finally received four Satellite Tags manufactured by a U.S. based company, Geo Trak, and four GSM tags based on the mobile phone technology from the Germany based company called E-obs. All the eight tags weigh 22gm each.

The tags for the reintroduction of vulture



iii. Timing of Releases

The birds from the centre were to be released in February 2020 but it could not be done because of the lockdown due to the outbreak of Corona virus pandemic. The birds will now be released in October or November 2020.

iv. Monitoring the habitat in an area of 100 km from the pre-release aviary to ensure the success of the release programme

The habitat monitoring was carried out in a radius of 100km from the Centre. The studies have revealed that prevalence of vulture toxic drug diclofenac has come down; there was enough food and a fairly good population of free ranging White-backed vulture and Himalayan vultures (on an average 70 per feeding day). The single dose vials of human formulation of diclofenac were still being misused in treating cattle, posing a threat to vultures. However, this year no diclofenac was found in Haryana. Strong advocacy and awareness programmes are being carried out to minimise the use of diclofenac in treating cattle.

v. Setting up of a National Coordination Committee

The Member Secretary suggested setting up of a National Co-ordination Committee for the vulture Conservation and Release Program at GOI level. This will give proper impetus to the programme along with benefiting the various States by way of sharing of information. Haryana is a small state and once vultures are released, they are likely to go to the neighbouring states as they are known to fly 100 km in a day. So it will be vital that the neighbouring States provide all the help, support and collaboration for the success of the programme. It was noted that interstate collaboration can happen only when the entire programme is closely monitored/supervised by MoEFCC, GOI. It was unanimously decided

that a proposal will be submitted to the MoEFCC, GOI, for setting up a National Coordination Committee, as suggested above.

c. A workshop on Vulture Reintroduction Programme was conducted on 3rd June 2019 for chemists and druggists association of the neighboring states of Haryana

As a part of preparation for the Vulture Reintroduction Programme from the Vulture Conservation Breeding Centre, Pinjore, a workshop was conducted on 3rd June 2019 to sensitize the field staff, the drug inspectors and the Chemists and Druggists association of Panchkula district and explain in detail the methods used to collect data on use of veterinary NSAIDs.



The workshop was attended by Mr. V. S. Tanwar, PCCF & CWLW, Haryana who was also the Chairman of the Workshop; Mr. N.K. Ahuja, Drug Controller Haryana, Mr. Adarsh Goyal, Deputy Drug Controller, Haryana, Mr. Praveen Kumar, Drug Controlling Officer, Haryana, Mr. Mohinder Kakkar, President, Druggists

Association and 56 members of the chemists and druggists association of Panchkula.

The participants were explained the plan of releasing vultures in the wild and were also their help was solicited for in giving their inputs in improving our methods in collection of information on use of veterinary NSAIDs and the ways of making the area in a radius of 100 km from the Vulture Conservation Breeding Centre safe for the captive bred vultures, which will be reintroduced from the centre shortly.

The Drug Controller, Mr. Ahuja, made the participants take an oath to refuse to sell drugs without prescription.

d. Safety testing of Tolfenamic Acid at VCBC Pinjore

Safety testing of tolfenamic acid was carried out on vultures in collaboration with Indian Veterinary Research Institute, Bareilly, Uttar Pradesh and Haryana Forest Department. Tolfenamic acid was found to be safe to vultures and publication will be brought out soon.

e. Financials

A total of Rs. 4.11 crores was sanctioned by MoEFCC, Government of India from its Centrally Sponsored Scheme for Recovery Plan for endangered species. However, only a total of Rs. 2.16 crores was received by the Vulture Centre. The total expenditure was Rs. 373 Lakhs, so BNHS had to organise the rest of the money. It could organise Rs 1.2 crore from RSPB but there was a deficit in total of 37 lakhs which still needs to be covered. It was also decided that the Govt of Haryana will provide funds at the earliest so that the Centre can plan its activities in a better way.

f. The team

The Chief Wildlife Warden, Haryana was the Project Leader of the Programme. Dr. Vibhu Prakash was the Project Manager and was assisted by Ms. Nikita Prakash, Scientist 'C', Drs. Debasish Saikia and Krishna Suhung, Veterinarians, Ms. Sana Khan, Ms. Shivani Kalra and Mr. Manan Mahadev Research Biologists, Mr. Lalit Sharma and Mr. Sanjay Singh, technical assistants, Mr. Niranjan Dalei, Administrative Officer, Mr. Balakram Sharma, Administrative Assistant, Ms. Palak Thakur, Accounts Assistant, Mr. Kapil Sinhmar, Assistant and Mr. Jaikishan Sharma, Supervisor. There were nine vulture keepers and two driver cum vulture keepers to assist in the smooth functioning of the centre.

This report covers the period from 1st April 2019 to 31st March 2020.

Vibhu Prakash, Ph.D.
Officer-in-charge
Vulture Programme



2. History of the Rescue Centre

The Vulture Conservation Breeding Centre is a joint project of the Bombay Natural History Society (BNHS) and the Haryana Forest Department. It is a collaborative initiative of a Government agency and a Non-Governmental Organisation, to save the three species of vultures, the White-backed, Long-billed and Slender-billed, from looming extinction.

The VCBC, earlier known as Vulture Care Centre, was established in September 2001 with the UK Government grant of the Darwin Initiative for the Survival of Species, to investigate the dramatic declines in India's *Gyps* species of vultures. The centre was inaugurated in the year 2003 by the British Minister for Nature, Mr. Elliot Morley.

Subsequent to the release of the South Asia Vulture Recovery Plan in February 2004, the centre was renamed Vulture Conservation Breeding Centre (VCBC) as conservation breeding became the main objective of the centre.

The centre was recognised as a rescue centre for vultures in the year 2007 by the Central Zoo Authority.

The centre is situated at the base of the Shivalik ranges of Himalayan foothills. It lies on the outskirts of the Bir Shikargaha Wildlife Sanctuary, 8 km from Pinjore, off the Chandigarh-Shimla highway. It spreads over 5 acres of Haryana Forest Department's land in village Jodhpur. The centre is ideally located away from human habitations, and yet is easily accessible from the main city so the day to day requirements of the centre can be easily organised.

3. Vision

To become a living example of saving critically endangered bird species from extinction with ex-situ conservation programme.



Mission

To release 100 pairs each, of the three species of vultures, in the next fifteen years, to establish and secure viable wild populations of resident *Gyps*, in an environment free of diclofenac and other poisons.

5. Objectives

To establish a founder population of 25 pairs of each of the three endangered vulture species viz. White-backed vulture, Long-billed vulture and Slender-billed vulture.



To produce a population of at least 200 birds of each of the three species, to be reintroduced in the wild.

To rescue injured wild resident *Gyps* vultures and include them in the ongoing conservation breeding programme after recovery.

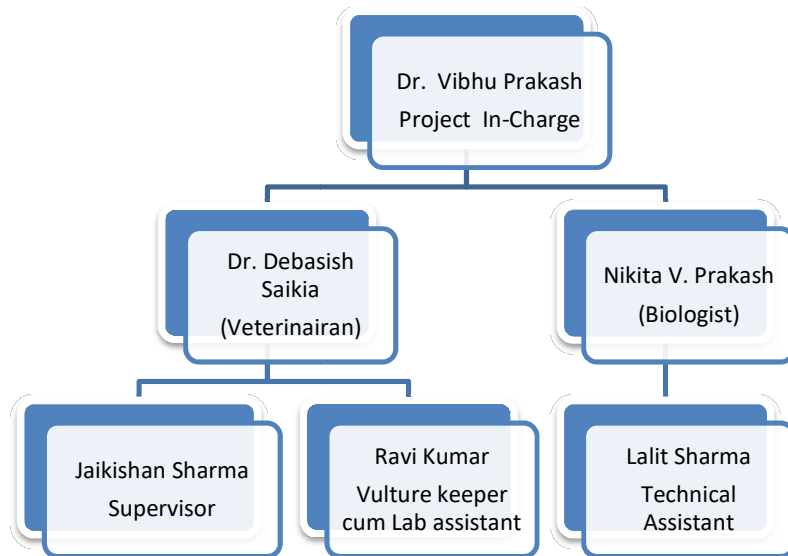
6. About us

S.No.	Particulars	Information
Basic Information about the Rescue Centre		
1	Name of the Rescue Centre	Vulture Conservation Breeding Centre
2	Year of Establishment	2007
3	Address of the Rescue Centre	B-3, Forest Complex, Pinjore 134102, Haryana
4	State	Haryana
5	Telephone Number	+91 90538 93940
6	Fax Number	NA
7	E-mail address	v.mathur@bnhs.org
8	Website	www.bnhs.org
9	Distance from nearest Airport:	Approx. 30km from Chandigarh International Airport
		Railway Station: 15km from Kalka Railway Station
		Bus Stand: 10km from Pinjore Bus Stand

S.No.	Particulars	Information
10	Recognition Valid up to (Date)	5th May 2019
11	Area (in Hectares)	2.0234282
Management Personnel of the Rescue Centre		
12	Name with designation of the Officer in-charge	Vibhu Prakash, Ph. D. Principal Scientist/Deputy Director
	Name of the Veterinary Officer	Dr. Debasish Saikia, B. V. Sc.
	Name of the Curator	Dr. Debasish Saikia, B.V. Sc.
	Name of the Biologist	Nikita V. Prakash
	Name of the Compounder/Lab Assistant	Ravi Kumar
Owner / Operator of the Rescue Centre		
13	*Name of the Operator	Chief Wildlife Warden, Haryana
14	Address of the Operator	Haryana Forest Department, C-18, Van Bhavan, Sector 6, Panchkula 134109, Haryana
15	Contact details/Phone number of Operator	0172-2561224
16	E-mail address of Operator	pccfwlhry@gmail.com



7. Organizational Chart of the Rescue Centre



8. Human Resources deployment for management of Rescue Centre (Officer in-charge to Animal Keeper - Sanctioned posts, in-position and vacant posts) Human Resources of the Rescue Centre*

Sl.No.	Designation	Number of Sanctioned Posts	Names of the incumbent
1.	Officer in-charge	1	Vibhu Prakash
2.	Veterinarian	1	Debasish Saikia
3.	Biologist	1	Nikita V. Prakash
4.	Technical Assistant	1	Lalit Kumar
4.	Supervisor	1	Jaikishan Sharma
5.	Vulture Attendants	10	Tek Singh, Ravi Kumar, Devidutt Sharma, Manohar Lal, Sukhdev, Lekh Raj, Ganesh Dutt, Md. Mansur, Rajnish Kumar, Ved Prakash
6.	Driver cum vulture attendant	1	Rajnish
7.	Night watchman	1	Prakash Chand

*Please give above mentioned information in respect of all Rescue Centre personnel, from the Officer in-charge up to the Animal Keeper.

9. Capacity Building of Rescue Centre personnel

Sl.No.	Name and designation of the Rescue Centre personnel	Subject matter of Training	Period of Training	Name of the Institution where the Training attended
1	Ravi Kumar, Vulture keeper	Northern Region Zoo Keepers Training Program - 2019	09/12/2019-13/12/2019	Itawah Safari Park, Itawah, Uttar Pradesh
2.				

10. Rescue Centre Advisory Committee

a. Date of constitution: 2nd May 2006

Members: The following are the members of the Governing Council

- I. Addl. Chief Secretary, Health and Family welfare, Govt. of Haryana, Chandigarh
- II. Principal Chief Conservator of Forests, Van Bhawan, Plot no. C-18, Sector 6, Panchkula
- III. Addl. Director General (Wildlife), Govt. of India, Ministry of Environment, Forests & Climate Change, New Delhi.
- IV. The Member Secretary, MoEF&CC, Central Zoo Authority, B-1 Wing, 6th Floor, Pt. Deendayal Antyodaya Bhawan, CGO Complex, Lodhi Road, New Delhi-110003.
- V. The Director, Wildlife Institute of India, Chandrabani, Dehradun.
- VI. Drug Controlling Authority, SCO 94, Sector 5, Panchkula.
- VII. Director, Animal Husbandry, Pasu Dhan Bhawan, Ways no. 9-12, Sector 2, Panchkula.
- VIII. Director, Bombay Natural History Society, Hornbill House, Shaheed Bhagat Singh Road, Mumbai.
- IX. Mr. Chris Bowden, Director, Vulture Programme, Royal Society for the Protection of Birds, Sandy, U.K.
- X. Ms. Jemima Parry-Jones, Director, international Centre for the Birds of Prey, U.K.
- XI. Mr. Nick Lindsay, Director, International Zoo Programme, Zoological Society of London, U.K.
- XII. Vice Chancellor, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana.
- XIII. Dr. Vibhu Prakash, Principal Scientist & Dy. Director, BNHS, Vulture Conservation Breeding Centre, B-3, Forest Complex, Pinjore, Haryana.

b. Date on which Meetings held during the year: 12th Governing Council meeting was held on 28th July 2020

11. Health Advisory Committee of the Rescue Centre

a. Date of constitution: Not formally constituted but since inception, 2004, the following committee supervises the health of birds

b. Members: Centre in-charge, Centre Veterinarian, Chief Veterinary Officer of Zoological Society of London (ZSL)

c. Dates on which Meetings held during the year: Annual health check 22-25th October 2019

12. Statement of income and expenditure of the Rescue Centre

Expense statement of Jatayu Conservation Breeding Centre, Pinjore, Haryana, April 2019 to 31 March 2020

A total of Rs. 4.11 crores was sanctioned by MoEF&CC, Government of India from its Centrally Sponsored Scheme for Recovery Plan for endangered species. However, only a total of Rs. 2.16 crores was received by the Vulture Centre. The total expenditure was Rs. 373 Lakhs, so BNHS had to organise the rest of the money. It could organise Rs 1.2 crore from RSPB but there was a deficit in total of 37 lakhs which still needs to be covered. It was also decided that the Govt of Haryana will provide funds at the earliest so that the Centre can plan its activities in a better way.

13. Daily feed Schedule of animals

Sl.No.	Species	Feed item	Quantity/ vulture		Day of fasting
			Winter	Summer	
1.	White-backed vulture	Goat meat	4kg	4kg	Fed twice a week on Monday and Friday
2.	Long-billed vulture	Goat meat	4kg	4kg	Fed Twice a week on Monday and Friday
3.	Slender-billed vulture	Goat meat	4kg	4kg	Fed twice a week on Monday and Friday

Twice a week provision of Food for Vultures at VCBC, Pinjore, Haryana



14. Vaccination Schedule of animals

Sl.No.	Species	Disease vaccinated for	Name of the Vaccine and dosage/ quantity used	Periodicity	Remarks
-	-	-	-	-	No vaccination has been done till now although the centre would like to vaccinate its birds against avian influenza but permission to import the vaccines could not be obtained.

15. De-worming Schedule of animals

Sl.No.	Species	Drug used	Month
1.	White-backed vulture	No de-worming is done but endoparasite load is monitored by routine faecal sample analysis. This is because the birds have to be reintroduced in the wild.	NA
2.	Long-billed vulture	Do	NA
3.	Slender-billed vulture	Do	NA

16. Disinfection Schedule

Sl.No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
1.	White-backed vulture	Incubator and brooder room, Nursery, holding, colony aviaries	Lime and F10	Once in 15 days
2.	Long-billed vulture	Incubator and brooder room, Nursery, holding, colony aviaries	Lime and F10	Once in 15 days
3	Slender-billed vulture	Incubator and brooder room, Nursery, holding, colony aviaries	Lime and F10	Once in 15 days



Scrubbing and disinfecting walls with lime



F10 a strong disinfectant used at VCBC



Potable municipal water supply for drinking



Perches are cleaned and disinfected every month

17. Health Check-up of employees for zoonotic diseases:

No health check could be done due to corona epidemic

18. Development works carried out in the Rescue Centre during the year



An aviary of dimensions 100'x40'x20' is being constructed next to the fourth colony aviary. The Haryana Forest Development Corporation (HFDC) was given the contract to construct the aviary. The HFDC agreed to undertake the work within the financial year. This aviary could house 30-35 birds and will be long enough for the birds to do wing exercise by flying from one end to another.

19. Important Events and happenings

a. The vultures at the centre

The highest number of vultures anywhere in the world was housed at the Jatayu Conservation Breeding Centre. There were 354 vultures including the nestlings of this year (2019-20) which have successfully hatched and fledged. The following is the species-wise breakup of the numbers:



Table 1: Number of Vultures at the Centre during 2019-20

Sn	Species	Total No. of Birds	Remarks
1.	Oriental White-backed Vulture	124	Including 11 nestlings fledged in 2019-20
2.	Long-billed Vulture	185	Including 10 nestlings fledged in 2019-20
3.	Slender-billed Vulture	45	Including 2 nestlings fledged in 2019-20
	Total	354	Highest ever in captivity in a Centre

b. The Breeding of vultures at the Centre

The breeding season of vultures commenced from the month of September, just as it would in the wild. The established pairs in the Colony Aviaries begin defending their nest ledges and remain perched together most of the time. During the year 2019-20, all the three species attempted breeding at the centre. The following is the species wise break-up of the pairs formed, eggs laid of first and second clutch and nestlings hatched and fledged.



Table 2. Total Number of pairs formed during the breeding season

Sn	Species	Total Pairs formed
1.	Oriental White-backed Vulture	20
2.	Long-billed Vulture	14
3.	Slender-billed Vulture	6
	Total	40

Table 3. Total Number of eggs laid during 2019-20

S.no.	Species	First Clutch	Second Clutch
1.	Oriental White-backed Vulture	14	6
2.	Long-billed Vulture	13	9
3.	Slender-billed Vulture	3	4
	Total	30	19

Table 4. Total Number of nestlings hatched at the centre during 2019-20

S.no.	Species	Total hatched & fledged	Remarks
1.	Oriental White-backed Vulture	20	None
2.	Long-billed Vulture	14	None
3.	Slender-billed Vulture	06	Highest so far in a year anywhere in the world

20. Seasonal special arrangements for upkeep of animals

I. Once again high quality shade cloth was laid on top of all aviaries to provide additional shade. This cloth brings down the temperature by 5°C.



II. Instead of only 2 water troughs filled in winter months, all 4 water troughs are filled during peak summer months of May, June, July and August to keep the birds cool and hydrated.

III. New nest cots, perches, stumps, sand are provided in all aviaries before the onset of breeding season for successful breeding.

21. Research work carried out and publications

a. Safety testing of Tolfenamic Acid at the centre

There are at least 12 veterinary NSAIDs in the market, of which only meloxicam is



considered safe to vultures. The MoEF&CC has given a project to Indian Veterinary Research Institute and BNHS to safety test all the veterinary molecules of NSAIDs available in the market. The Safety testing of tolfenamic acid, a veterinary NSAID, was initiated in the year 2017 on Himalayan Griffon. This year Phase 2 period 2 & 3 of the project was carried out during the month of March 2019 at JCBC in collaboration

with Indian Veterinary Research Institute (IVRI), Izzat Nagar, Bareilly, Uttar Pradesh and Haryana Forest Department. Thirty five Himalayan Griffons were caught and after a health check and observing a quarantine period of 25 days, they were dosed with tolfenamic acid. The birds were housed at the quarantine facility which is 5 km from the centre. Dosing birds for safety testing started from 7th April 2019. Twelve birds were dosed with tolfenamic acid about 13 times the normal veterinary dose (this was based on the maximum level of exposure obtained from carcass sampling) and four birds were used as control birds were dosed with Benzoic alcohol-the carrier fluid. The uric acid levels were monitored real time and most of the birds did not show any elevation of uric acid levels.

b. Monitoring the habitat in an area of 100 km from the pre-release aviary to ensure the success of the release programme

Before introducing the captive bred vultures in the wild, it is important to make sure that the habitat in at least 100 km radius is safe for vultures in terms of low prevalence of vulture toxic NSAIDs, has food resource to sustain vulture populations and has a population of free

ranging birds which could act as guide birds for the captive bred birds once they are released in wild. So the following studies were carried out:

i. Monitoring the Prevalence of various Veterinary Non-Steroidal Anti-inflammatory Drugs (NSAIDs) in the 100 km radius from the centre

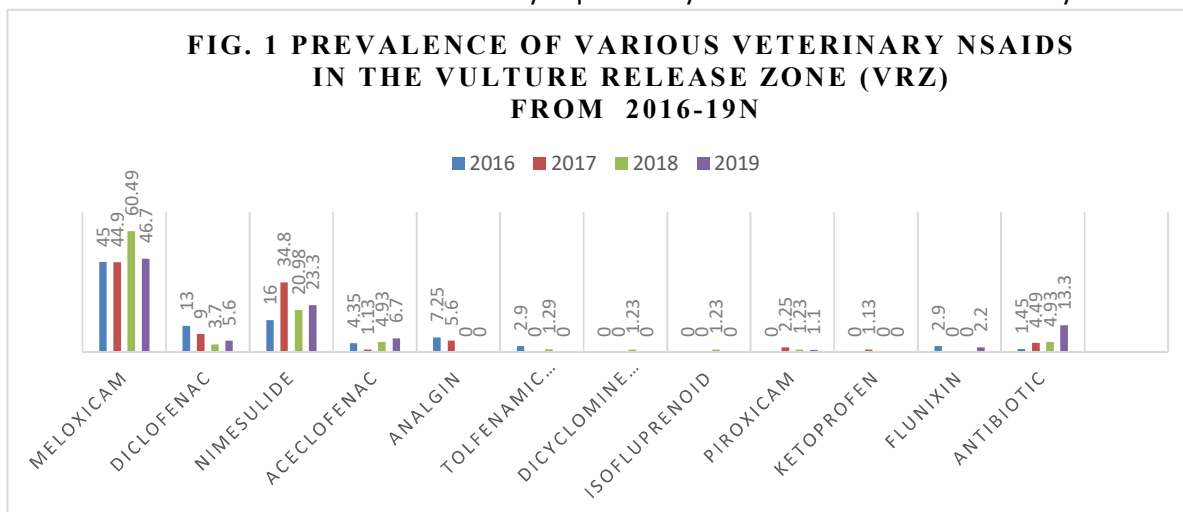
The undercover pharmacy surveys were carried out to find out the prevalence of vulture toxic NSAIDs in 100 km radius from the centre, which is the minimum area to be made safe for a successful reintroduction of the vultures in the wild. The pharmacy surveys were carried out every year since last four years. The surveys were carried out in Haryana, Punjab, Himachal Pradesh, and parts of Uttarakhand and Uttar Pradesh. One pharmacy was covered in each of the tehsils of the districts following the vulture safe zone.

Method of Pharmacy Survey

The pharmacy surveys were carried out by visiting the pharmacies and asking for a medicine for treatment of injured cattle. The surveyor would pose as a local resident looking for a drug to treat his cattle suffering from pain or inflammation. The first drug offered was purchased. The same pharmacy in each town was visited during all the subsequent surveys but in case the shop was closed or it refused to sell medicine, a different pharmacy in the same area was visited.

Results of the pharmacy survey

A total of 80 pharmacies from different tehsils of the five States were surveyed during 2019. Of the 80 pharmacies surveyed, a total of 69 pharmacies offered NSAIDs, 10 pharmacies offered NSAIDs with an antibiotic and only 1 pharmacy sold antibiotics for veterinary use.



The vulture safe drug meloxicam was the most popular drug for cattle treatment as 46.7% (n=42) pharmacies offered this drug. The prevalence of the vulture toxic drug, diclofenac was very low and only 5.6% (n=5) pharmacies sold this drug. All these were human formulations of 3 mL ampoules or as tablets. It is however important that the prevalence of this drug is less than 1% to make the environment conducive for the vultures to be released back in the wild. It is also important to make sure that the illegal use of the human

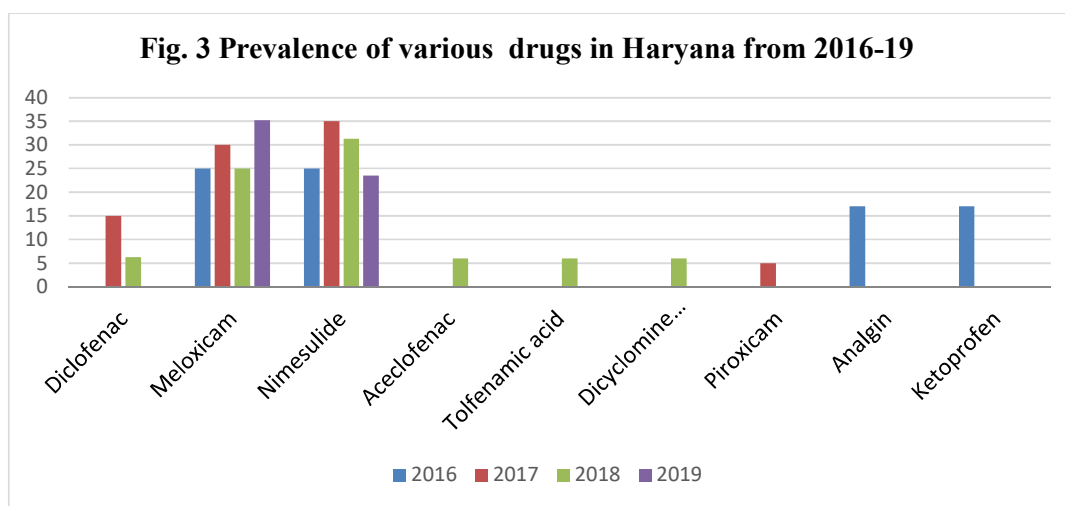
formulations is completely stopped which could be done by strict enforcement by the Drug Controlling Authority.

- **Pharmacy Survey in Haryana**

Four districts namely, Panchkula, Yamuna Nagar, Ambala and Kurukshetra were covered during the pharmacy survey.

A total 13 pharmacies were surveyed in 12 tehsils during the surveys among which 12 pharmacies offered NSAIDs without prescription and only 1 pharmacy asked for a prescription. Three pharmacies sold antibiotics along with NSAIDs for the treatment of injured cattle.

No pharmacy sold diclofenac, neither in form of injections nor tablets. A total of 35.2% (n=6) pharmacies provided meloxicam, 17.64% (n=4) pharmacies offered nimesulide and two pharmacies sold flunixin.



The results of surveys carried out during 2019 in Haryana, indicates that the drug meloxicam was getting popular in veterinary use and it is certainly good for vulture conservation. However the popularity of nimesulide is still high which is worrying as there are indications that it could be toxic to vultures.

ii. Monitoring the population of vultures in the 100 km radius from the centre

It is important that there is a population of free ranging vultures in the release zone which could act as guide birds to the released captive bred birds. The year-round monitoring of vulture population was carried out during the year 2019-20, which gave a good estimate of the vulture population in the 100km radius area from the pre-release aviary. Based on the censuses carried out, we estimated the resident *Gyps* vulture population in the study area to be between 350-400.

The surveys were conducted in a 100 km radius around the centre which covered parts of the States of Haryana, Punjab, Himachal Pradesh, Uttarakhand and Uttar Pradesh.

Methods of Vulture population monitoring

The population of vultures in the area was estimated by following methods.

●Road Transect Method

This is a standard method of estimation of population of large birds of prey which occur in low densities and usually perch at conspicuous places where ever they occur. The count was carried out usually half an hour after sunrise, with two observers watched the birds on either side of the vehicle. The vehicle was driven along a pre-determined transect. The birds were counted about 500 m on either side of the transects. All transects were approximately 100 km long and were marked in different areas of the Vulture Release Zone. The transects were:

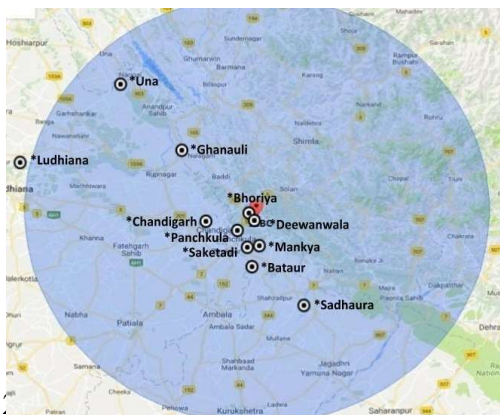
- Pinjore-Una
- Pinjore-Kurukshetra
- Pinjore-Hathnikund
- Pinjore-Solan-Poanta Sahib
- Pinjore-Badisher

●Absolute count of vulture population at carcass dumps

Vultures are scavengers and largely feed on the carcasses of large ungulates both domestic and wild. They are social birds and feed in flocks. So it is possible to get information on their numbers in the surrounding areas by regular monitoring at food concentration areas. The cattle carcass dumps were identified and were monitored regularly for the vulture populations. A cluster of carcass dumps near Pinjore was monitored every week, a few less accessible dumps were monitored once in fifteen days and a few were opportunistically monitored.

The carcass monitoring gave us information on the minimum number of birds utilizing the area and also on food availability for vultures. Attempts were made to do an absolute count of birds at the carcass dumps. The maximum count obtained was considered for population estimation. All the carcass dumps were marked on a map.

Fig. 4. Identified Carcass dumps for population monitoring in Vulture Release Zone, Pinjore



iii. Absolute count of vulture population outside the pre-release aviary

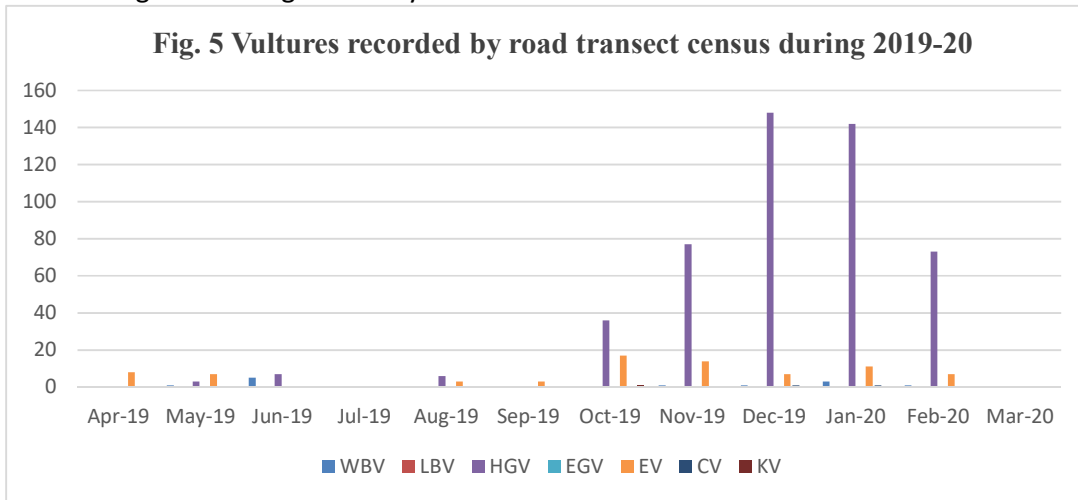
The vultures will be released following the soft release method. The birds are kept in the pre-release aviary which is netted from all sides. The free ranging birds are attracted outside the pre-release aviary to encourage interaction between

the captive bred birds, which are to be released, and are housed in the pre-release aviary, so that when the captive bred vultures are released, they will easily join the flock of the wild vultures. The free ranging vultures' number was estimated twice every week near the pre-release aviary when the food was provided both within and outside the aviary.

Results of the Vulture population monitoring

•Road transect method

The population of vultures fluctuated between months throughout the year. The highest population of vultures was recorded during the months of December and January, probably because of the arrival of wintering vulture populations. The population of vultures was however sighted throughout the year.

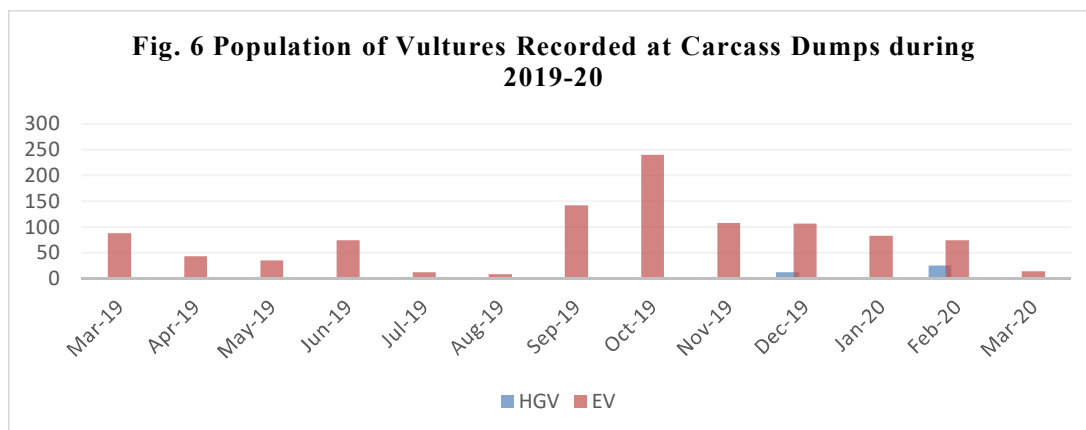


(Where WBV- Oriental White-backed Vulture, LBV- Long-billed Vulture, HGV- Himalayan Vulture, EGV-Eurasian Griffon Vulture, EV-Egyptian Vulture, CV-Cinereous Vulture and KV-King Vulture)

Seven species of vultures were recorded. Only three species of vultures were sighted regularly. The Egyptian vulture and Oriental white-backed vulture were resident, while Himalayan vulture was wintering and were sighted from the month of December till March. The population of Oriental White-backed vulture was very low, but was sighted in small numbers throughout the year.

• Absolute count at carcass dump

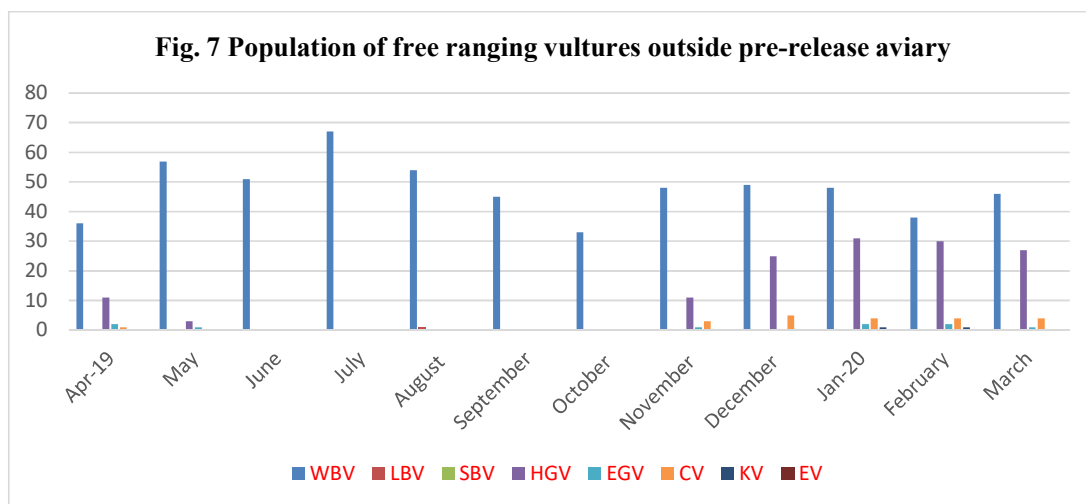
The population of vultures was recorded at various carcass dumps (foraging sites), including a cluster of carcass dumps around the vulture centre in a radius of 100km from it. All these sites were located within the area of the proposed vulture safe zone. Only Egyptian vultures were recorded throughout the year. Very few Himalayan vultures were observed during the winter months. No Oriental White-backed vulture was recorded at the carcass dumps. A highest count of over 200 Egyptian vultures was recorded in October 2019. The Himalayans are wintering species and hence were only seen from the month of November up to March.



HGV- Himalayan Vulture, EV-Egyptian Vulture

•**Absolute count outside the pre-release aviary**

Seven species of vultures were seen outside the pre-release aviary. With the ensured availability of food, twice a week, the vultures would come in good numbers. The Oriental White-backed vulture was seen all the year round. The Himalayan vultures are wintering species and were seen in flocks from November to April.



(Where WBV- Oriental White-backed Vulture, LBV- Long-billed Vulture, SBV-Slender-billed Vulture, HGV- Himalayan Vulture, EGV-Eurasian Griffon Vulture, CV-Cinereous Vulture, KV-King Vulture and EV-Egyptian Vulture)

iv. Monitoring the food availability for vultures in the 100 km radius from the centre

The food of vultures constitutes wild ungulates and also domestic ungulate carcasses. It is important that the food is available in the vulture release zone to ensure survival of the captive bred birds which will be released in the wild.

The food availability for vultures was estimated by carrying out periodic surveys of the identified carcass dumps to get an idea of the availability of carcasses.

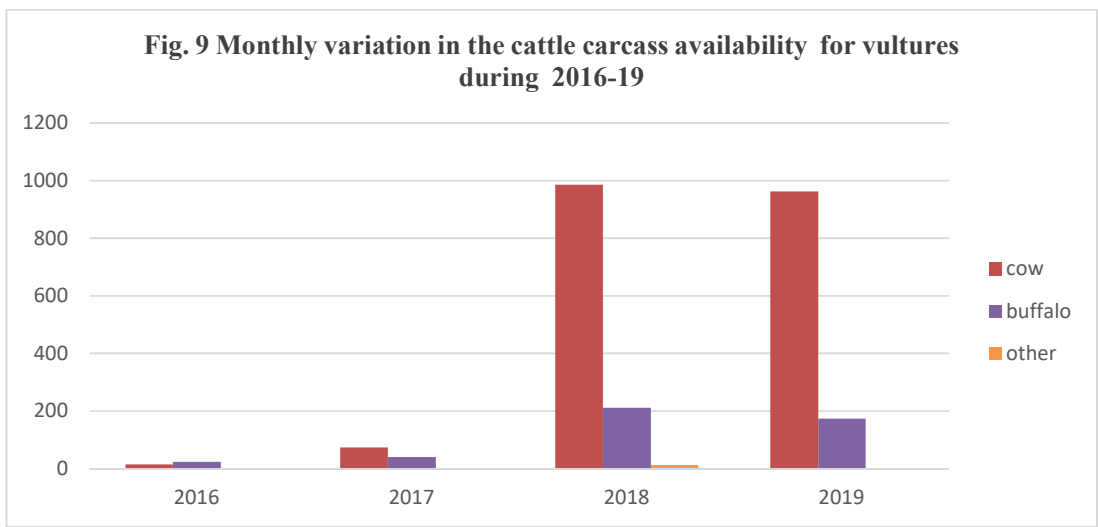
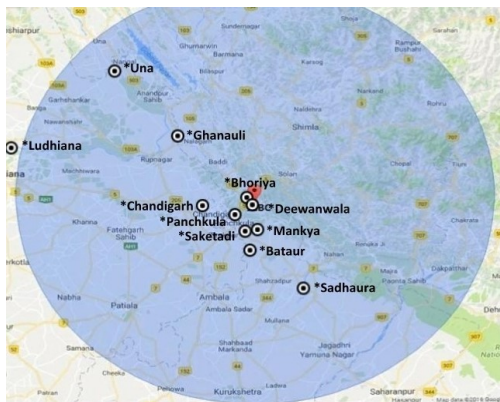
Method for estimating food availability

The observer would walk all over the dump looking for the dead animals. All carcasses available at the dumps were recorded with the age of the dead animal, approximate consumed meat and condition of the carcass. The amount of food was calculated in kilograms using the average weight of carcasses according to their age, and while doing so 40% of the weight was reduced from the total as weight of hide and bones. The carcass dumps falling in the Vulture Release Zone were identified and marked on the map and were visited once a week.

Fig. 8 Carcass dumps surveyed in the Vulture Release Zone, Pinjore

Results of the estimation of food availability

There appeared to be no shortage of food for vultures in the Vulture Release Zone as carcasses were recorded during all the months. There was good proportion of uneaten carcasses, partially eaten, completely eaten and just skeletons. This indicated that the food was available throughout the year. Hence food did not appear to be a problem for the birds when they will be released back in the wild. The vulture feeding areas (carcass dumps) could also be a death trap for vultures; hence the check on the supply of diclofenac in the veterinary use is of utmost importance.



v. Advocacy and awareness programmes in vulture release zone in 2019-20

The reintroduction programme of vultures of the Jatayu Conservation Breeding centre is likely to be initiated this year. So far, the birds were housed in captivity, were off display and visitors were not allowed. Now, however, the birds will be released, they will be in human environment and will be exposed to human activity. So it is important to inform and aware the various people who could influence their survival. Therefore strong advocacy and awareness programmes are a requirement for raising awareness among various stakeholders including the decision makers, cattle owners, villages, veterinarians, drug sellers, end users and the members of public.

The targeted awareness and advocacy programmes were carried out with various stake holders. The stake holders were informed about the vulture conservation efforts, importance of vulture conservation and the help and support required for the successful reintroduction of vultures in the wild from Vulture Conservation Breeding Centres.

Stakeholders of the targeted advocacy and awareness programmes in the vulture release zone

- Forest Department (they implement the Indian Wildlife Protection Act 1972)
- Animal Husbandry Department (they are responsible for livestock health and hence are the major end users of the veterinary drug)
- Food and Drugs Administration (they implement the Drugs and Cosmetics Act 1940)
- District and local Administration (they are responsible for governance and implementation of law in the district)
- Cattle owners and farmers (the end user)
- Students (Could influence the use of drugs)
- Pharmacists and Chemists (provider of the drugs)

The Following targeted advocacy programmes were conducted during the year to prepare for the reintroduction of vultures in the wild

1. Workshop for chemists and druggists association

A workshop on Vulture Reintroduction Programme was conducted on 3rd June 2019 for chemists and druggists association of the neighbouring states of Haryana as a part of preparation for the Vulture Reintroduction Programme, to sensitize the field staff, the drug inspectors and the Chemists and Druggists association of Panchkula district and were explained in detail the importance of making the area around the centre safe for vultures by preventing the sale and availability of vulture toxic NSAIDs.

The workshop was attended by Mr. V. S. Tanwar, IFS, PCCF & CWLW, Haryana who was also the Chairman of the Workshop; Mr. N.K. Ahuja, Drug Controller, Haryana, Mr. Adarsh Goyal,

Deputy Drug Controller, Haryana, Mr. Praveen Kumar, Drug Controlling Officer, Haryana, Mr. Mohinder Kakkar, President, Druggists Association and 56 members of the chemists and druggists association of Panchkula.

The participants were explained the plan of releasing vultures in the wild and their help was solicited in making the area in a radius of 100 km from the breeding centre safe for the captive bred vultures, which will be reintroduced from the centre shortly.

The Drug Controller, Mr. N. K. Ahuja, made the participants take an oath of not selling drugs without prescription, not selling diclofenac for veterinary use and restricting the sale of other known toxic drugs like ketoprofen, aceclofenac and nimuesilide .

2. Other advocacy initiatives

A. The Chairman of the Governing Council of VCBC, Addl. Chief Secretary, Forest and Wildlife Department, Government of Haryana wrote to Drug Controller General of India, New Delhi requesting him to ban aceclofenac, as it was a pro-drug of diclofenac. Aceclofenac, poses the same threat as diclofenac does to vultures and its use is not banned in the veterinary market. It was also taken up by the Haryana Drug Controller with the Drug Controller General of India by presenting scientific evidence.

B. The Chairman of VCBC also wrote to the Food and Drug Administration, Haryana to initiate urgent measures to ensure no diclofenac is used in treating cattle and livestock. The Drug Controller of Haryana informed that their Department was taking steps to make sure that the NSAIDs are sold only on prescription.

C. The Chairman also wrote to the Department of Food and Drug Administration, Haryana to ensure that the NSAIDs are sold only on prescription to prevent their misuse in treating cattle. The NSAIDs are Schedule-H drugs under Drug and Cosmetic Act and should be sold on prescription only. The Drug Controller of Haryana informed the meeting that they were taking steps to make sure that the NSAIDs are sold on prescription.

3. Awareness and Advocacy with Forest Department

Forest Department is the custodian of wildlife and is responsible for the implementation of Wildlife Protection Act 1972. The centre gave extensive information on vulture conservation and requested help and support from the various training classes of Forests which visited the centre. The trainee officers were from various states and it was possible to create awareness among large number of officers.

The following classes from various forest training schools from the neighboring states and other states visited centre during the year 2019-20. The classes were from Indian Forest Service, from Indira Gandhi National Forest Academy, SFS training colleges from Coimbatore, Tamil Nadu, Dehradun and Himachal Pradesh, Range Officer Training school from Uttarakhand, Himachal and Gujarat. The classes from Haryana of Dy. Rangers and Forest Guards also visited the centre.

22. Rescue and Rehabilitation of wild animals.

Sl. No.	Date of Rescue	Species with number of animals rescued with their sex (M: F:U:T)	Received from	Date of Submission of Report to the CWLW / CZA	Action taken	
	None	None	None	None	None	None

23. Annual Inventory of animals

Form – II

[See Rule 11(1)]

Part – A

Inventory Report for the Year: 1st April 2019-31st March 2020

Endangered Species*

S. No.	Animal Name	Scientific name	Opening Stock as on				Births			Acquisition			Disposal			Death			Closing Stock as on			
			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
1.	Long-billed vultures	Gyps indicus	17	17	133	167	0	0	11*	0	0	0	0	0	0	1	0	2	21	23	141	185
2.	White-backed vultures	Gyps bengalensis	14	15	76	105	0	0	31*	0	0	0	0	0	0	1	1	0	13	14	97	124
3.	Slender-billed vultures	Gyps tenuirostris	5	5	31	41	0	0	4*	0	0	0	0	0	0	0	0	0	7	7	31	45
	Total		36	37	240	313	0	0	46*	0	0	0	0	0	0	2	1	2	41	44	269	354

*Animals under Schedule I and Schedule II of the Wild Life (Protection) Act, 1972

Where

11* 01 nestlings of April 2019 + 10 nestlings of March 2020

31* 20 nestlings of April 2019 + 11 nestlings of March 2020

04* 02 nestlings of April 2019 + 02 nestlings of March 2020

46* 23 nestlings of April 2019 + 23 nestlings of March 2020

24. Mortality of animals

Sl. No.	Animal Name(with individual identification mark, if any)	Scientific name	Sex	Date of Death	Reason of death as the post mortem findings
1.	A00	White-backed vulture	Female	1 st January 2020	Could not be ascertained
2.	A02	White-backed vulture	Male	11 th March 2020	Could not be ascertained
3.	H41	Long-billed vulture	Unknown	26 th May 2019	Liver and kidney failure
4.	H04	Long-billed vulture	Unknown	14 th June 2019	Circulatory shock due to enlargement and pus formation in right atrium
5.	B12	Long-billed vulture	Male	20 April 2019	Shock due to massive internal haemorrhage

25. Compliance with conditions stipulated by the Central Zoo Authority

Sr. No	Norm No. under RZR, 2009	Condition Stipulated	Time Period to Comply	Since when pending	Status with regard to compliance of the conditions
1.	10.5(2)	Water sample to be tested	One month		The vultures are given potable municipal water supply for drinking.
2.	10.5(5)	Perches and shelves should be cleaned and disinfected regularly	Regular basis	Not pending as they are cleaned once every 15 days.	Done
3.	10.9(3)	Acquisition of rescued birds	Immediately as and when rescued	Not pending	No bird was rescued during the year
4.	10.5(3)	Shifting of birds from one centre to other	At the earliest	Not pending	No bird was shifted from one centre to other.