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Technical Report of Vulture Safe Zone, Uttar Pradesh 2022-23

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Technical Report of Vulture Safe Zone, Uttar Pradesh 2022-23

Team

Dr. Rohan Shringarpure, Project Coordinator,

Mr. Manan Singh Mahadev, M.Sc., Conservation Biologist

Mrs. Alka Dubey, M.Sc., Conservation Biologist

Mr. Sourabh Ruhela, M. Sc., Conservation Biologist

Mr. Jeff Francis, M.Sc., Conservation Biologist

Mr. Lakhan Basudev,Field Assistant

Mr. Mohammad Qasim, Driver

Dr. Vibhu Prakash, Principal Investigator

Dr. Abhishek Ghoshal, Program Lead

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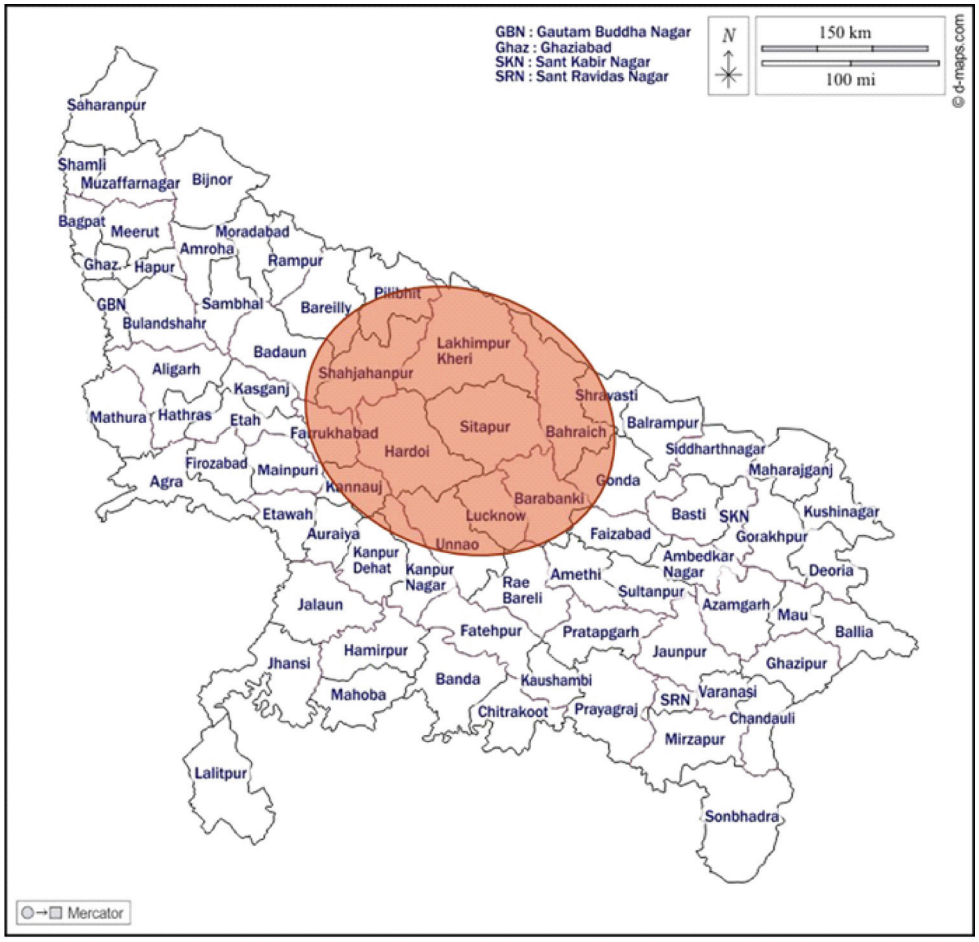
Location

The work for creating a Vulture Safe Zone was initiated at the study area within a radius of 100 km from district Maharajganj of Uttar Pradesh. This previous site centred around Palia-Kalan of district Lakhimpur-Kheri was shifted to Maharajganj based on a meeting with the Chief Wildlife Warden of U.P. at Gorakhpur in August 2022, wherein it was felt that more conservation efforts should be focused on the eastern part of U.P. The selected area fell withinthe normal distribution ranges of White-rumped vulture and Slender-billed vulture, whereas the Long-billed vulture was distributed to the south-west of the Vulture Safe Zone. Thesethree species were our focus species for conservation action. There was a regular carcass dump at Nichlaul of Maharajganj district where regular sightings of vultures and a constant food supply were recorded. Besides, a nesting colony of White-backed vulture was identified in Sohelwa Wildlife Sanctuary, which was just outside the western periphery of the proposed new provisional Vulture Safe Zone.



Introduction

Vulture Safe Zones are established to make the area, where there are extant populations of resident *Gyps* vultures, free from the veterinary drug diclofenac and other drugs thatare toxic to vultures.

The studies were initiated with the following objectives:

1. To obtainecological information on the population of vultures in the region, as well as the prevalenceof diclofenac and other vulture-toxic NSAIDs,
2. To carry out targeted advocacy and awarenessprogrammes with various stakeholders to completely remove the drug diclofenac fromveterinary use, and
3. To evaluate the efficacy of the undertaken conservation actions.

The main strategy for establishing the Vulture Safe Zone was to carry out targetedadvocacy and awareness programmes among various stakeholder groups, including theForest Department, Food and Drugs Administration, Animal Husbandry Department, DistrictAdministration, Education Department, Public Relations Department, students, teachers andmembers of general public. Thus, the targeted advocacy and awareness programmesformed the conservation actions.

Evaluation of the effectiveness of conservation action was done by regularly monitoring thevulture populations, carrying out periodic undercover pharmacy surveys to estimate theprevalence of diclofenac and other NSAIDs in the region, and cattle carcass sampling to findout the actual use of diclofenac in cattle treatment in the region.

Project Highlights

1. Conservation actions: advocacy and awareness meetings

During the period April 2022 to March 2023, a total of 60 advocacy meetings, including one-to-one meetings and group-level discussions, were conducted with senior officials of various departments, including Forest Department (25 meetings; 13 state-level, 2 circle-level, 10 district-level), Animal Husbandry Department (20 meetings; 5 state-level, 4 circle-level, 11 district-level), Food and Drugs Administration (10 meetings; 4 state-level, 4 circle-level, 2 district-level), and District Administration (5 meetings). The VSZ team maintained a constant rapport with senior officials of various departments and kept them updated about the progress of the project through regular telephonic conversations and/ or online meetings. The meetings achieved the desired outcomes in the form of advisories/ letters/ directives issued by the officials to their subordinates to ensure effective implementation of the diclofenac ban, assured cooperation in the form of telephonic instructions to their subordinates to extend their cooperation in vulture conservation, and providing platforms to the VSZ team at their intra-departmental meetings or webinars to convey the message of vulture conservation.

Figure 1: Meeting with Shri Ved Prakash Gupta, MLA of Ayodhya

Figure 2: Administration of an oath for vulture conservation during an awareness event in Kanpur on International Vulture Awareness Day 2022

Awareness programmes for creating vulture safe zones

The VSZ team also conducted several awareness programmes throughout the year. A total of 90 online/offline awareness programmes were conducted/ participated in by the VSZ team, directly sensitizing about 3,000 people in the process.

2. Assessment of the effectiveness of conservation actions

Monitoring the vulture populations in the Vulture Safe Zone

The most important indicator of the effectiveness of vulture conservation actions is the trend in population of vultures in the region. A stable or increasing population indicates that the conservation actions are effective, whereas, a decreasing population indicates that an improvement or modification of the conservation strategy is required. The vulture populations were monitored using three methods, road transect method, total count method at vulture foraging sites, and nest count method at nesting colonies.

a. **Road transect method:** This was conducted by two researchers seated on either side of a vehicle driven along a pre-determined route at slow speeds of < 40 km/h. Perched and low-flying vultures sighted up to a distance of 500 m from the vehicle were recorded. This gave an idea of the minimum resident population of vultures in the region. Road transects along five pre-determined routes on state or national highways throughout the provisional Vulture Safe Zone were covered with Palia-Kalan as the starting point in June, August, and September 2022, and with Maharajganj as the starting point from October 2022 to March 2023. Road transects were also conducted inside and surrounding the protected areas of Suheldev Wildlife Sanctuary and Sohagi-Barwa Wildlife Sanctuary in November 2022.

b. Results of the road transect method

The results of the road transect method along highways with Palia-Kalan as the centre and Maharajganj as the centre are summarized in Figures 3a and 3b.

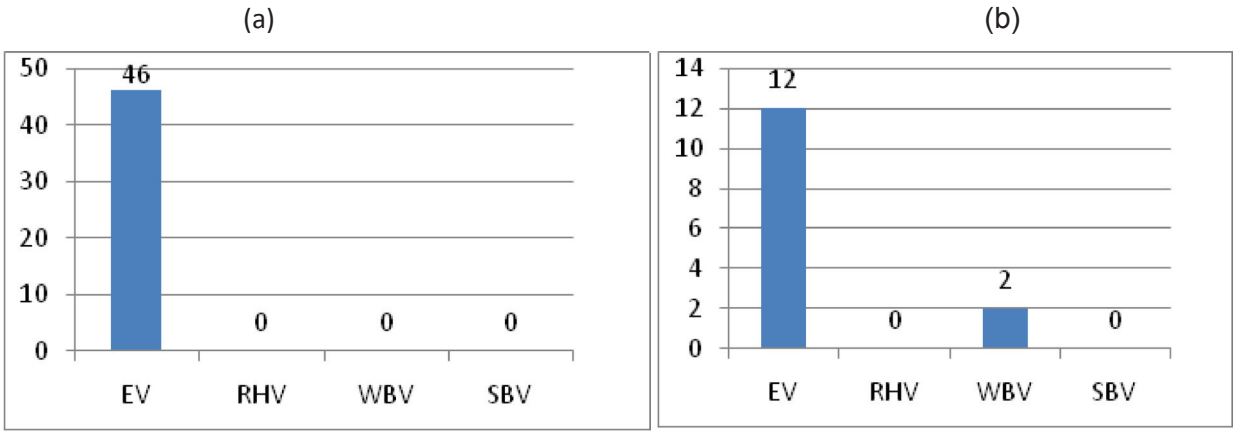


Figure 3: Total number of vulture sightings in transects along highways with (a) Palia-Kalan as the centre and (b) Maharajganj as the centre.

EV, Egyptian vulture; RHV, Red-headed vulture; WBV, White-rumped vulture; SBV, Slender-billed vulture

A total of 42 vultures (13 EV, 17 WRV, 2 EG, 8 HG, and 2 CV) were recorded in the surveys inside and surrounding Suheldev Wildlife Sanctuary. Most vultures were recorded in SWLS3 (Sohelwa to Bankatwa) (n = 33). The least number of vultures was recorded in SWLS5 (Mokhampur to Semra) (n = 3).A total of 2 vultures (2 WRV, ER: 0.0138) were recorded in the surveys in Sohagi Barwa Wildlife Sanctuary. Both sightings were recorded in SBWLS4 (Madhwaliya to Shivpur Range). No vultures were recorded in the rest of the transects.

Opportunistic sightings

A total of 215 vultures (11 EV, 1 RHV, 137 WRV, 1 LBV, 15 EG, and 51 HG) were recorded at 8 different locations in Suheldev WLS during the surveys (Fig. 4). However, these sightings were not along the transect and were either at nest/roost sites or foraging sites. Therefore, these sightings were recorded as opportunistic sightings.

Figure 4: Opportunistic sighting of a sub-adult Long-billed vulture among a flock of vultures feeding at a carcass dumped along the roadside near Suheldev Wildlife Sanctuary.

c. **Total count method:** This was done by visiting the carcass dumps or food concentration sites for vultures between 8:00 am to 5:00 pm (the time when most of the vulturesforage) and quickly counting all the vultures feeding on the carcasses, perched on trees nearby, or in low-flight just above the dump. Two carcass dumps i.e. Majhgain dump & Bela dump (near Dudhwa Tiger Reserve, Uttar Pradesh) were monitored every 15 days during the study period (April 2022 to October 2022). From November 2022 to March 2023, a carcass dump in Nichlaul tehsil of Maharajganj district was monitored every week and data was collected on the species richness and diversity of vultures at the carcass dump.

Results of total count method

At the carcass dump in GauSadan, Nichlaul, the highest overall count of vultures was in January 2023, when a total of 112 vultures (99 HV, 9 WRV, 3 EGV, 1 CV) were recorded (Fig. 5).However, the maximum number of resident *Gyps* vultures was recorded in December 2022 (30 WRV), when the total count was 77 (30 WRV, 42 HV, 4 EGV, 1 CV). At the carcass dump in Bela, a maximum of 2 Egyptian vultures was recorded in July 2022,while at the carcass dump in Majhgain, a maximum of 14 vultures (12 WRV, 1 HV, 1 SBV) was recorded in August 2022.

Monitoring the availability of food for vultures

To assess and monitor the availability of food for vultures, records of cattle carcassesencountered along the transects, as well as at the carcass dumps, were maintained andanalysed. Two unorganized carcass dumps and carcasses dumped along the roadsidewere recorded during thesurveys.During road transect surveys throughout the year, a total of 21 carcasses were recorded, out of which 18 were of cows (15 adults & 3 calves) and 3 were of buffalos (3 adults) recorded opportunistically along the roadside. At the monitored foraging sites, a total of 45 carcasses (40 cow, 5 buffalo) were recorded during the surveys. Furthermore, 5 skeletons were also recorded, indicating less supply of food for the vultures. A common pattern observed at foraging sites was that the cattle carcasses were buried and not left out in the open

Figure 5: A flock of vultures feeding on a buffalo carcass at Nichlaul, Maharajganj district.

after skinning them. Only accidental deaths of cattle or carcasses of feral cattle were left untouched and constituted the food source for vultures. Based on the calculations described in the methods, a total of approximately 8,832 kg meat (mean, 883 kg per month) was available to vultures (after excluding the weight of hide & bones) at the surveyed food concentration sites and along the roadside. This estimate is only based on a sample and the actual food availability could be much higher.

3. Assessment of the prevalence of various NSAIDs for cattle treatment in the VSZ

To assess the availability of various NSAIDs for treatment of cattle, with emphasis on the vulture-toxic NSAIDs, undercover pharmacy surveys were carried out at randomly selected pharmacies in the VSZ,Uttar Pradesh. The undercover pharmacy surveys were conducted by a local field assistant posing as a cattle owner and asking the pharmacist for a drug to treat his cow/buffalo suffering from pain and inflammation. The first offered drug was purchased and the Biologist would record all relevant details from a distance. A total of 17 districts (Bahraich, Balrampur, Barabanki, Basti, Faizabad, Gonda, Gorakhpur, Hardoi, Kushinagar, Lakhimpur Kheri, Maharajganj, Pilibhit, Sant Kabir Nagar, Shahjahanpur, Shravasti, Siddharth Nagar, Sitapur) were selected in Uttar Pradesh and 111 pharmacies were surveyed. Out of 111 pharmacies, 7 refused to sell any medicine without prescription.

Results of the pharmacy survey

The highest prevalence recorded was of drug nimesulide (35%), followed by aceclofenac (31%). The prevalence of vulture-safe drug i.e., meloxicam, was only 6%. Diclofenac was also provided by some pharmacies, but only human formulations were available. No veterinary formulation of diclofenac was recorded during the pharmacy survey. The prevalence of various NSAIDs in pVSZ UP during the undercover pharmacy survey in January 2023 is presented in Figure 6.

Challenges Faced

- **Rare sightings of vultures in the region**

Repeat transects in the existing pVSZ UP has consistently indicated that the population of vultures in the area is very small. Also, there were no nesting sites that could be regularly monitored throughout the year within the area. These issues could be mitigated by realigning the existing pVSZ to the Bundelkhand region of U.P.

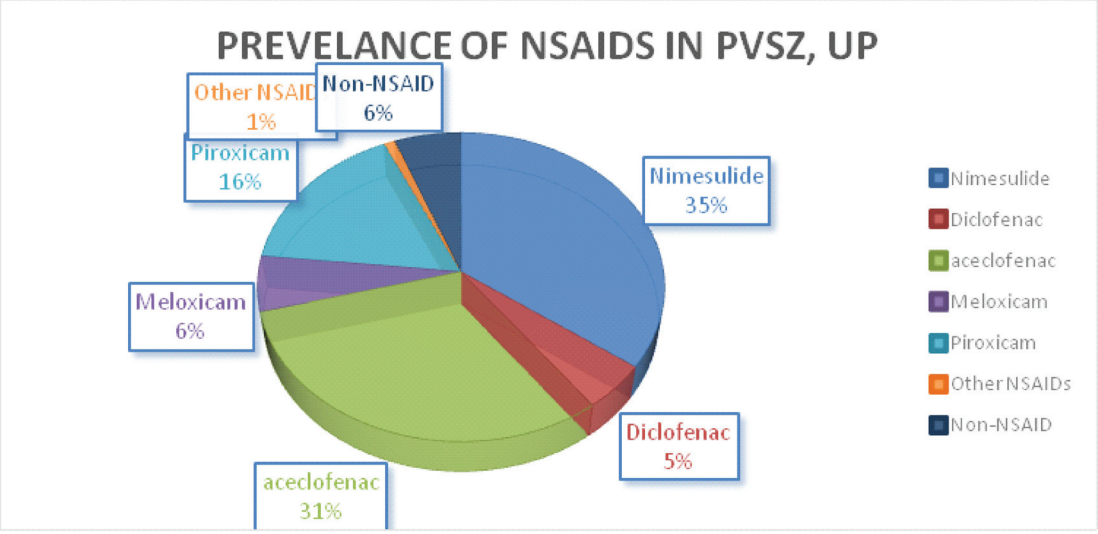


Figure 6: Prevalence of various NSAIDs in cattle treatment at pharmacies in 17 districts in the pVSZ UP. Although the prevalence of diclofenac is low, the prevalence of aceclofenac and nimesulide are higher and a cause of concern

- **Delayed permission from the Forest Department to conduct activities of the pVSZ**

During the year 2022-23, there was considerable delay from the Forest Department in giving permission for carrying out the routine activities of the pVSZ UP. Finally, after multiple meetings with the Chief Wildlife Warden, the permission was granted in October 2022.

Way Ahead

It is proposed to focus conservation efforts towards areas with existing considerable vulture population, such as the Bundelkhand-Vindhyan region of Uttar Pradesh (Fig. 7).

Baseline studies of the area in 2019-20 have confirmed the presence of a sizeable vulture population in Jhansi, Lalitpur, and Chitrakoot districts of U.P. It is recommended to shift the provisional Vulture Safe Zone to this region and perform all activities, such as monitoring of vulture populations, assessment of the prevalence of the veterinary non-steroidal anti-inflammatory drug and outreach activities in the new VSZ area. This will also help merge the activities at the existing provisional Vulture Safe Zone in M.P. and help create a larger and contiguous Vulture Safe Zone.

Figure 7: Map of proposed realigned pVSZ UP showing slight overlap with pVSZ MP