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## Egyptian Vultures: The Unfortunate Victims

Shivangi Mishra<sup>1</sup>, Adesh Kumar<sup>1,2</sup> and Amita Kanaujia<sup>1,2\*</sup>

<sup>1</sup>Biodiversity & Wildlife Conservation Lab, Department of Zoology, University of Lucknow, Lucknow-226007  
Uttar Pradesh, INDIA

<sup>2</sup>Institute for Wildlife Sciences, ONGC Center for Advanced Studies, University of Lucknow, Lucknow-226007  
Uttar Pradesh, INDIA

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### ABSTRACT

Vultures are the keystone species and very important scavengers responsible for the maintenance of balance of ecosystem. Diclofenac is the main reason of mass decline in the population of vultures in India but there are other factors too that are adversely affecting the vultures, like the shortage of food after the change in lifestyle of people, the closure of slaughterhouses in Uttar Pradesh, indiscriminate cutting of trees as a part of urbanization, and the unawareness regarding the importance of vultures. Due to rapid urbanization and deforestation the whole natural equilibrium has changed. It has displaced vultures from their habitats. The present study aimed at showing the drastic decline in the population of Egyptian Vultures in Rae Bareli district of Uttar Pradesh. Repeated surveys show that there has been a decline in individuals from an average 171 individuals to only 02 individuals. Strict measures and proper awareness with comprehensive education regarding the environment helps people to understand how important these species are and there is the necessity to keep these species alive from the brink of extinction.

### 1) INTRODUCTION

Vultures are nature's cleaning squads. They clear the dead remains of animals and thereby prevent the spread of various harmful zoonotic diseases such as anthrax [1, 2, and 3]. The clearing of carcasses by vultures facilitate the flow of energy in the ecosystem [4]. The report of the International South Asian Vulture Recovery Workshop (2004) identified the 7 main causes of rapid vulture population decline: destruction of nesting habitat, infectious diseases, use of veterinary drugs (NSAIDs), general environmental contamination, deliberate poisoning of carnivores leading to secondary poisoning of vultures, low food availability, and exploitation and persecution. According to the recent scientific investigations regarding the causes of vulture decline recognized the use of veterinary drugs, especially Diclofenac Sodium, a non-steroidal anti-inflammatory drug administered to domesticated cattle in the Indian sub-continent, as the major cause of the decline of vulture populations [5, 6, 7, 8, and 9]. However, it is not known whether Egyptian Vulture and Red-headed Vulture are also sensitive to diclofenac. [10]. There are various adverse consequences of the decline in vulture population like spread of harmful diseases like rabies, anthrax etc., and increase in the population of feral dogs. A survey, by the National Institute of Communicable Diseases, Delhi [11] has estimated that the recent dog population in India has been increased dramatically.

Pearce and Brown [12] identified two main forces affecting deforestation. They are: -

- Competition between humans and other living beings for the remaining ecological niches on land. This factor is

demonstrated to a great extent by the conversion of forest land to other uses such as infrastructure, urban development, farming practices, bridge construction, industrial development and others [13].

- The Failure in the working of economic systems to reflect the true value of the nature and environment.

The former can be regarded as the direct and latter as indirect cause of deforestation.

Habitat loss is one of the greatest threats to biodiversity [14, 15, and 16]. The study will assist in determining the threats due to rapid urbanization and their adverse effects on the population of globally endangered Egyptian vultures. The trees preferred by them for roosting should be protected otherwise the habitat loss will leave these crucial species from gradual decline to extinction finally.

### 2) MATERIALS AND METHODS

#### Study Area

Study has been done in Rae- Bareli District of Uttar Pradesh during January 2014 to December 2017. The roosting site of Egyptian vultures (N26<sup>o</sup>12.168' E081<sup>o</sup>15.052' Elevation-93m) is behind the Indira Udyan. There were tall and mature tree species like *Holoptelea integrifolia* (Chillbill), *Ficus bengalensis* (Banyan tree), *Ficus religiosa* (Peepal tree), *Acacia nilotica* (Babool), *Eucalyptus obliqua* (Eucalyptus), *Melia azedarach* (Maha neem).

\* Corresponding Author: **Dr. Amita Kanaujia**

Email address: [kanaujia.amita@gmail.com](mailto:kanaujia.amita@gmail.com)

### Data Collection

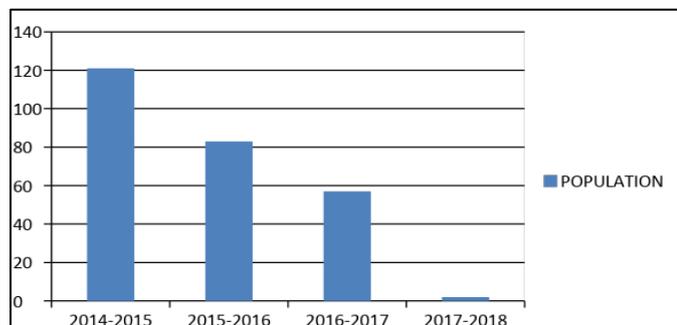
Surveys were carried out seasonally (summer, winter, monsoon), on foot or vehicle according to the area. Three visits per season were made. The regular monitoring of site has been done during the study period. Observations were carried out using Total count and Roost count method with the aid of 10 × 50 binoculars and data is supported with photography using Canon EOS 70 D SLR camera and Nikon Coolpix P900 Point and shoot camera. The decline was documented by comparing results from road transect surveys of raptors [17].

### 3) RESULTS AND DISCUSSION

The decline was noticed by comparing the data on the population changes obtained by road transect survey of raptor populations [18]. The trees have been cut because of the construction of bridge at that region. Number of dense huge tall and old trees observed at the site till June 2017 were the main roosting trees of Egyptian vultures where these species used to go for communal roosting. Their roost site destruction has led to the decline in the population of these species (Table.1; Figure1).

**Table. 1:** Decline of Egyptian Vulture population at Raebareli district during the period 2014-2017

S.NO.	YEARS	POPULATION
1	2014-2015	121
2	2015-2016	83
3	2016-2017	57
4	2017-2018	2



**Figure. 1:** Population decline from road transect count behind Indira Udyan at Raebareli district of Uttar Pradesh

The global population of Egyptian vulture is rapidly declining by the reason of habitat destruction, loss of food availability, chemical contamination, infectious disease, poisoning and pesticides which are the major key factors for the population decline [19]. Human activities are among the most important factors affecting biodiversity [20]. From 2014 onwards the monitoring of site revealed that there were a number of old and mature green and several dead trees which were the main roosting sites of Egyptian vultures (Figure2). The individuals (juvenile, sub-adult and adult) of Egyptian vulture used to spend a major part of their day roosting, sunning and preening there on the branches of those tree species. While the survey in 2017 it has been found that all those trees were cut for the bridge construction at that area (Figure3). Several studies link human density to declining wildlife populations [21, 22]. Expanding cities and towns require land to establish the infrastructures which are necessary to support growing

population, done by clearing the forests [23,24] but this expansion is resulting into the serious threats on wildlife and biodiversity.



**Figure.2:** Showing the scenario from year 2014 to 2016 behind the Indira Udyan and the dump site there



**Figure.3:** Showing the scenario in 2017 (Roost site destruction for bridge construction).

### 4) CONCLUSION

Study suggests for more rigorous steps and actions to make the concerned authorities realize that indiscriminate cutting of the old and tall trees like *Melia azedarach* (Maha neem), *Dalbergia sisso* (Sheesham), *Ficus bengalensis* (Banyan), *Ficus religiosa* (Peepal) etc. would affect these globally

endangered species adversely and one day they may get extinct completely. Nonetheless the stoppage to such continuous destruction of habitat should be done which is of paramount importance for the nature and these unfortunate victims.

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