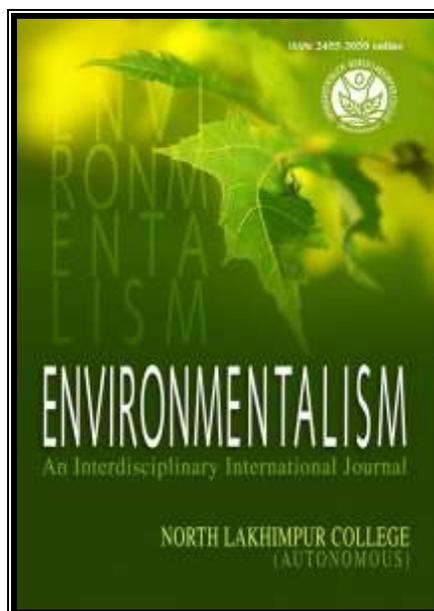


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A STUDY ON VULTURE DECLINE IN ASSAM, INDIA

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Abstract

Assam comprising the eastern Himalayas is one of the Mega Biodiversity hotspots of the world. Biodiversity is important for many reasons including helping to provide food and medicine, breathable air, drinkable water, livable climates, protection from pests and diseases and ecosystem stability. The long necked bald headed magnificent bird has none the less lived up to their reputation of “cleaners” of the environment and masters of the skies. Vulture were once most common birds until the 90s before being affected by the lethal contaminants of our environment found in the poisoned carcasses which consist the major portion of its foods. Human kind is only one species in a vast array of life forms. It is however, an especially influential and increasingly disruptive actor in the huge cast of characters on the stage of planet earth. This paper highlighted decline of vulture in Assam.

Keywords: Biodiversity, ecosystem, environment, disruptive endangered species

1 Introduction:

Bio-diversity refers to diverse living organisms which balance earth’s ecology. It is the variety within and between all species of plants, animals and micro-organisms within which they live and interact. Each species plays a unique role in an ecosystem. Vultures are one such species which plays a very important role in protecting the bio-diversity (www.assambirds.blogspot.com).

The important characteristics of vultures are. They are large sized bird having a wingspan of about 3 meters and weight about 10 kgs. The vultures have bald head, and hooked the blade and neck of the vulture allows the head to be pushed inside the carcass without getting the feather bloody and messy.

Vultures are the scavenging birds. They feed mostly on the carcasses of animals. Vultures do not kill animals but by consuming the dead animals, they keep the environment clean. Thus, the vultures prevent spread of

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dangerous diseases like rabies and anthrax, which could play havoc to the wildlife, livestock and human.

The vultures have such weak bills that their food must be partly rotted before they can tear the flesh. The vultures are gregarious birds with groups perching for long period around the feeding areas. They feed entirely on the carrion by way of scavenging for carcasses by soaring. A flock of vultures can clean carcasses of dead bullock within 30 to 40 minutes. Thus the vultures help cleaning the vicinity from the dirt and danger of any epidemic breaking out due to the dead bodies of animals lying around.

2 Data Analysis

The rapid decline and extinction of vulture population was first recorded at the Keolodeo Ghana National Park, Rajasthan during mid 1980's to mid 1990's followed by Northern India road counts. This led to carry out survey at identified location throughout the country.

Data on vulture population changes across wider area of Northern India of about 99.7% decline in *Gyps bengalensis* (white backed) during the period 1992-2003. *Gyps indicus* (long billed vulture) *Gyps tenuirostris* (slender billed vulture) declined to the extent of 97.4% during the period. That is estimated note of decline of *Gyps bengalensis* was 34% per year. The estimated rate of decline of *Gyps indicus* and *Gyps tenuirostris* was 27% per year (Patnaik 2008).

The Himalayan griffon, a migratory bird which comes to Assam every winter from the Himalayan region, has been becoming a victim of poisoning in Assam every year and over 200 vultures, mostly Himalayan griffons, have died in the last one year in Assam. There were at least 10 critically-endangered white-backed vultures (*Gyps bengalensis*) and slender-billed vultures (*Gyps tenuirostris*), which has caused serious concern to the naturalists (www.assamtimes.org).

The white-backed vultures and slender-billed vultures, which are resident birds of Assam, are facing extinction at present and over 99 per cent of the population of these two species has already been lost in recent times, compelling the Birdlife International and the International Union for Conservation of Nature (IUCN) to list the white-backed and slender-billed vultures in the Critically Endangered categories. The Indian Wildlife (Protection) Act, 1972 has also included these two species in Schedule I (www.save-vultures.org).

The three *Gyps species* (white-backed, slender-billed and long-billed vultures) have declined by 97.99 per cent during the last 15 years," said a book, Threatened Birds of Assam, written by Asad R Rahmani and Anwaruddin Choudhury.

3 Its Significance

Survival of vulture is crucial to the health of the planet and survival of all life on earth. Vultures are the most efficient defenders of disease outbreaks. They are able to consume a large amount of dead meat in a very short span of time. They help earth's nutrient to cycle by releasing the organic matter to the soil. Thus the vultures play a key ecological role in our bio-diversity. Any threat to biodiversity poses immense threat to the survival and, well being of mankind. However, today our bio-diversity is facing a typical problem – that is the rapid decline in the vulture population, The scientists, environmentalist are concerned with finding out the causes of rapid decline of vulture population and the ways to overcome the problem so as to protect the bio-diversity from any danger on account of the rapid decline of vulture population. The vultures were the most neglected birds and considered as vermin and ill-



omen. Yet their help to making by cleaning up the cattle carcasses and keeping human habitat safe from various diseases is noteworthy. The scientist realized the role of vultures in day to day life of us and decided to help the “Jatayu- the vultures who help us”.

Almost two decades ago, the vultures were found in plenty near cities, towns, villages, open area, scrubby jungles and scattered tall trees. However in 80’s the gradual decline in vulture population was observed by the environmentalists. The decline of vulture population started assuming alarming proportion. Today these scavenging birds are hardly seen at the places where they were seen in large numbers (<http://www.bnhs.org/core/activities/research/vulture-proramme.html>). So the scientists world over have focused their attention to protect and preserve this important species playing a vital role for the mankind.

India has nine species of *vultures* (www.abc.lynxeds.com). These are:



Fig. 1: White backed vultures (*Gyps indicus*)



Fig. 2: Slender billed vultures (*Gyps bengalensis*)



Fig.3: Long billed vultures (*Gyps tenuirostris*)



Fig. 4: Egyptian vultures (*Neophron percnopterus*)



Fig. 5: Red headed vultures (*Sarcogyps calvus*)



Fig. 6: Himalayan Griffon (*Gyps himalayensis*)



Fig.7: Indian Griffon vulture (*Gyps fulvus*)



Fig. 8: Cinereous Vultures (*Aegypius monachus*)



Fig. 9: Bearded vultures (*Gypaotus barbatus*)



Overview of Successful Conservation Breeding Centre Away from the cacophony of Guwahati city, yet close to it, it is established a vulture conservation breeding centre (VCBC) Rani with the Meghalaya's beautiful hills backdrop, it spreads over 2 hectares of Assam Forest Department land that fall in the Jorasal Reserve Forest in Rani range. Tiny villages like Belguri, Nalapara, and Mairapur are spread around with their paddy fields and Arica nut orchards giving a picturesque rural landscape on both side of the dusty road, hidden from the modern world, the centre work for noble cause vulture conservation (Gogoi 2014).

This vulture conservation effort started long back more than couple of decades. After noticing the decline in the vulture population his team undertook intensive surveys and breeding programs and the last way to save the population.

In India, we have three VCBCs established and the VCBC at Rani is the latest among them. In 2007 setting up a breeding centre for vultures. They have to construct aviaries for vulture that would be scientific and fulfilling the requirements of vultures.

First of all, the area was demarcated by perimeter electric fence which also keep wild and domestic animals. Being an elephant prone area, it was necessary appliance, step by step the aviaries for vulture were developed. As per them use, the aviaries-the houses where vulture are kept are named as nursery. They have currently five small aviaries and a huge colony aviary. The colony is the aviary mainly used for maintaining breeding birds and keeping them as wild as they are in nature.

The closed circuit television camera installed in the colony aviary serves the monitors, the vultures and their activities without disturbing them.

The main challenge was to collect vultures for the breeding stock. They collected young vultures as well as received vulture from all over the state. Although the collection yet not completed fulfilled, they have breeding stock of about 70 vultures. As they are naturally distributed in NE, the white backed and slender-billed vultures are kept here for breeding.

It takes quite a long time to mature vulture but generally the young birds start play with the nest material, try to build nest and from a pair. It takes about 5 years to mature the birds and start successful breeding. During the breeding, once a pair is informed, the breeding activities go on for more than half of the year.

The year 2012 has special significance for the VCBC, Rani as this year saw the first successful breeding of both species- white backed and slender-billed vulture. These were mainly the rescued birds and hence the breeding was a bit early than expectation.

The first successful breeding certainly has given confidence to all nature lovers. This is the only way to be assumed that we have at least small flock of vultures, safe from various poisons and accidents in nature. The veterinary formation of diclofenac is banned in India, but the human formulations are misused for cattle treatment.

5 Causes of Decline

Scientist, Veterinarians studying the carcasses of rapid decline of vulture population world over have not been able to find any single reasons for such a decline. However their analyses have thrown important lights on various causes responsible for the rapid decline. The some are analyzed below:



i Use of Veterinary Drugs

It however took years to identify diclofenac as the cause of their precipitous decline and was established by a three years intensive research by the Peregrine Fund and Ornithological Society of Pakistan (Bird life on Pakistan), investigating vulture mortalities in the Pakistan Punjab. Diclofenac drug is a non-steroidal anti-inflammatory drug. This medicine was introduced in Indian Market in 1980's. It is by far the most commonly available veterinary pain killer in India. Exposure of vultures to diclofenac is presumed to occur to the consumption of carcasses of live stock that have been treated with diclofenac can cause kidney failure and liver diseases. A study on experiment with some of the dead vultures of Diclofenac is their kidney. Sachin P. Ranade centre manager of Rani based VCBC centre in Kamrup district, said 99% of the deaths of Oriental, White backed, Slender billed and long billed vultures are because of diclofenac.

ii General Environmental Condition

Environmental contaminants have been seen known to cause heavy mortality in vultures and raptor populations. Pesticides and insecticides cause environmental contamination and death of vultures. There is wide spread use of chemicals / poison in water sources which is a potential source of contamination.

iii Low Food Availability

Carcasses are the main food supplement to the vultures. The practice of dumping carcasses in the open was a predominant form of a disposal, now such practice has almost disappeared. Hence a gradual reduction of available food on the form of carcasses may be another cause of vulture population crash.

iv Exploitation and Persecution

A Vulture body part in traditional medicine has led to exploitation, persecution of vulture for preparation of traditional medicine.

v Loss of Nesting Habitat

The nesting habitats of vultures are affected by disturbances like cutting of trees, interference by the mankind and the natures furry. The large scale destruction of trees providing shelter to the vultures occurred during the 80's prior to the awareness about the environmental impact. Super cyclones in Orissa, earth quakes and tsunami created havoc for the mankind and also vulture's populations. So such natural phenomena also contribute to the rapid decline of vulture population.

6 Consequences of decline

Given the rate at which vultures are declining, there have been surprisingly few studies about the ecological consequences of the widespread disappearance of these scavenging birds. Communities of facultative scavengers are highly structured and complex and birds contribute most to this structure because they are the most specialized scavengers.

As carrion specialist, the absence of vulture from carcasses may affect the community composition of scavengers at carcasses which could alter scavenging rates for individual species.

In localized regions where vultures are functionally extinct, such as in Assam, the absence of vulture at carcasses appears to have driven a rapid increase in the abundance of opportunistic species. Economic consequences of vulture decline include costs to human health. A world without vultures would be a breeding ground for diseases.

7 Suggestion

Vultures perform important functions in our ecosystem. They provide service to mankind from potential health risks posed by decomposing livestock carcasses. So it is the responsibility of all concern to protect and prevent the disappearances of vultures in India.

To preserve and protect these endangered species by taking the following action

i Ban Diclofenac use Meloxican drug

It is essential to recognize the impact of diclofenac of the decline of vulture population. As a measure of protection, vets and chemists are being continuously consulted about the use of diclofenac and advised to replaced with it Meloxican which is proved safe for vultures yet it is still a challenging to ensure the birds survival in its home ranges.

ii Awarness and Educational Campaign

Intensive awareness programs are required especially among those who are still using this drug. Rural and village based veterinary doctors be made aware through campaigns, regarding the impact of Diclofenac and vulture population. The campaign should reach out to the grass root level. NGOs to be involved in such campaign.

iii Establishment of Captive Vulture care/Breeding centres

A network of captive vulture care and management centre to be established in different zones in India, to maintain a healthy population of vultures. This will prevent all vultures being affected by diclofenac or other reasons for their decline.

iv Analysis of Sick Vulture Specimen

Recognized institution to be established to collect and send the sick vulture to their laboratory for the analysis and identification of the factors and sickness of the mortality.

iv Monitoring of Vulture Population

It is essential to establish agencies to continue survey and monitor in different regions to study the vulture population decline and their recovery.

8 Conclusion

The importance of vultures in protecting our biodiversity is well known to the mankind. Most of all recognizing vultures vital role played in our environment and acknowledging its valuable contribution towards our health and our planet are two necessary acts that everyone should take up. Vultures are scavenging bird they clean the environment by removing the carcasses. This nature of job voluntarily performed by the vultures since ages has helped in reducing epidemics like rabies and anthrax.

In addition to the above, certain proactive actions like establishing vulture breeding and care center have been taken up to increase the vulture population. Further research needs to be encouraged and financial support given to organizations. Engaged in protecting, preserving and increasing the vulture population. These actions will go long way in protecting our biodiversity and mankind from the decline of vulture population. The vultures have served mankind for thousands of years, now it is our turn.

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