

ABUNDANCE OF VULTURES IN SHIVALIK FOOTHILLS OF NORTH WEST INDIA

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Abstract: Vultures are known for their valuable ecosystem services, very sensitive to environmental changes and act as excellent bioindicator of ecosystem health. The Indian subcontinent is home to nine species of vultures namely bearded vulture, himalayan griffon, eurasian griffon, egyptian vulture, oriental white-backed vulture, long-billed vulture, slender billed vulture, red headed vulture and cinereous vulture. There was drastic decline in vulture population in the Indian subcontinent in the early 1990s. However after the launch of several conservation initiatives by Government and NGOs, the decline of vulture population has been controlled. There are various conservation research studies which have been carried out by various researchers. Here we present some notes on various sightings of the vultures in the Shivalik landscape which is the youngest mountain in India.

Keywords: Vultures, Shivalik landscape, Conservation initiatives, Northwest India.

Introduction

Vultures are known for their valuable ecosystem services, very sensitive to environmental changes and act as excellent bioindicator of ecosystem health. They are large, obligate scavenging birds that eat dead vertebrates and are an important element of the environment cycle. Efficient energy management is a key adaptation of vultures. When vultures eat carcasses, they actively remove pathogens from the environment which in turn maintains the equilibrium in ecosystem. India has nine species of vultures in the wild (Ali and Repley, 1987), of which four species - *Gyps bengalensis*, *Gyps indicus*, *Sercogyps calvus* and *Gyps tenuirostris* are listed as critically endangered in the International Union for Conservation of Nature Red Data Book (IUCN, 2016).

During the early 1990s, there was a drastic decline in vulture population in the Indian subcontinent (Rahmani, 1998; Prakash, 1999; Chhangani, 2005). In absence of carcass disposing mechanism, vulture decline lead to associated disease risks for wildlife, livestock and humans (Prakash *et al.*, 2003). Decline of vultures in India was first recorded at Keoladeo Ghana National Park, Rajasthan during mid 1980s to mid 1990s. Rate of decline of Indian

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White-backed Vulture was estimated to be around 96% between years 1991 to 2000 (Thakur and Narang, 2012).

The causes of vulture population decline have been under study. A variety of explanations and hypotheses have been proposed, including a reduction in food availability, poisoning, habitat loss, pesticide intoxication, calcium deficiency, infectious diseases (Prakash, 1999; Chhangani, 2005). The report of the International South Asian Vulture Recovery Workshop (2004) identified the seven potential causes of rapid vulture population decline: (i) loss of nesting habitat, (ii) infectious diseases, (iii) Indiscriminate use of veterinary drug diclofenac, (iv) general environmental contamination, (v) deliberate poisoning of carnivores leading to secondary poisoning of vultures, (vi) low food availability, and (vii) exploitation and persecution. The ban on manufacture, import and sale of painkiller diclofenac for veterinary use in 2006 by Drug Controller General of India and the timely response of the Governments in India has helped in the return of nature's guard. There has been some deceleration of the rate of decline between years 2000 to 2007 (Prakash *et al.*, 2007).

Study area

Shivalik landscape is the youngest mountain in India and is also called sub-Himalaya spans across states of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh and union territory of Chandigarh. It is extended from the Indus basin to the Brahmaputra with one gap of over 300 km from the Sapta Kosi to the Manas River. The Shivalik landscape, has been categorized under Indo-Gangetic plains and it has special significance in India's biogeography due to intermingling of taxa from the Indo-Malayan and Palaeartic regions.

In the Northwest part of Shivaliks, a total of 21 wildlife protected areas had been established in six States and one Union Territory covering up to ca 2500 km². 80% of existing protected areas of Shivaliks are in the Northwest Shivaliks. Wildlife Divisions of Ropar, Hoshiarpur and Gurdaspur in Punjab, and the catchment area of Sukhna Lake in Chandigarh have been identified as potential Community/Conservation Reserves (Sivakumar *et al.*, 2010). The movement of vultures depends on environmental conditions and food availability. Most vulture species are territorial and widely distributed over a sizable area (Fuller and Mosher, 1981). There have been various sightings of different species of vulture recently in Shivaliks which is an indication that they are coming back and signifying the importance of the area as a healthy ecosystem.

Vulture sightings

As per report of Vulture Conservation in Kangra, Himachal Pradesh (2004-15), surveys were conducted by Wildlife Wing of the Forest Department in Kangra which revealed that the number of vultures has shot up from 30 in 2004 to over 900 in 2013. The first observations on vulture were started in 2003-04, where only 26 nests of Oriental white backed vulture were observed during 2004-05, which reached to an incredible figure of 288 during 2014-15. These master birds were observed to have been breeding in 35 to 46 colonies in Kangra District on very old straight trees of *Pinus roxburgii* growing on mild slopes in Shivalik hills. Further it has been reported that Indian White-backed Vulture has been distributed in small patches in Bilaspur, Chamba, Hamirpur and Kangra districts of Himachal Pradesh (Thakur *et al.*, 2012). A total of 22 nesting colonies of this species have been reported during breeding season (October to March/April) in 2010-2011. Further a single nesting colony of Slender-billed Vulture and 14 nesting colonies of Himalayan griffon has been recorded from Himachal Pradesh. In Una district, presence of globally threatened species Egyptian vulture highlights the conservation issue in the area (Singh, 2015).

In Rajaji National Park, Uttarakhand, of the total nine species of vultures found in the Indian sub-continent, six species has been reported namely Egyptian Vulture, Cinereous Vulture, Red-headed vulture, White-rumped vulture, Indian vulture and Himalayan griffon during the years 2007-2011. The population of long-billed vulture, egyptian vulture, cinereous vulture and red-headed vulture was recorded stable and of white-backed vulture was not common (Joshi, 2012). Notably, Egyptian Vulture, Cinereous Vulture, Red-headed vulture, White-rumped vulture and Indian vulture were observed in small flocks, ranging from 2-17. However, only one species, Himalayan griffon was observed in large flocks, ranging from 3-38. Experts feel that the sudden increase in the number of vultures inside Rajaji is due to restoration of the right ecological balance.

Thakur and Paliwal, 2012 have recorded the presence of Indian white-backed Vulture, slender-billed vulture, red-headed vulture, Egyptian vulture and cinereous vulture in the Sukhna wetland of Chandigarh. Further a survey carried out between December 2002 and March 2003 of the winter birds of the Gya Miru Wildlife Sanctuary in the Trans Himalayan region of Ladakh, Jammu & Kashmir revealed that Bearded Vulture was the most frequently sighted species (Namgail, 2005). Whereas Uttar Pradesh has six species of vultures namely Egyptian Vulture, Slender-billed Vulture, Indian Vulture (Long-billed Vulture), White-rumped Vulture, Red-headed Vulture (King Vulture) and Himalayan Griffon (Jha, 2015).

Breeding colonies of Longbilled Vultures were also reported in Bundelkhand region of Uttar Pradesh near sources of water such as rivers, canals, ponds or dams (Kushwaha, 2016).

Conclusion

These sightings of vultures in the protected area of Shivaliks support this fact that they are getting the nesting space, food, and probable water source. Protected areas, such as wildlife sanctuaries, national parks, and biodiversity reserves, are critical for supporting biodiversity and play a key role in essential ecological functions (Heal, 2000). The awareness and concern among the Forest Department as well as local people will aid in exploring more vulture sites. It can be rightly said that the decline of vulture population has been controlled due to many conservation programmes like captive breeding of vultures, community participation, creation of vulture safe zones by government and natural history society agencies. Asia's first 'Gyps Vulture Reintroduction Programme' has also been launched in Pinjore. Further vulture restaurants set up to provide safe and adequate food for these scavengers are helping the nature's guard to return back to nature.

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