

Birding in Banaskantha related to
Egyptian Vulture *Neophron percnopterus*



Abstract: Banaskantha district covers various types of ecosystems like; cropland, terrain, desert, urban etc. Its terrain consists of hills with cliff faces, valleys, and riverine forests. Jessore Wildlife Sanctuary, Balaram-Ambaji Wildlife Sanctuary, a part of Wild Ass Sanctuary known as Nalabet as well as River Banas and other water bodies play an important role in sustaining rich biodiversity. Local people of the area are engaged mainly with farming and cattle rearing. Banas Dairy is a well-known milk industry. In the district numbers of Gaushalas and Panjarapols are run by charity trusts and local people. Dumping sites nearby the Gaushalas and Panjarapols attract scavengers. During our visits, we found good numbers of Egyptian Vultures at Mervada Panjarapol, Kant Panjarapol, and Banas Dairy sites.

Introduction

A complete ecosystem is developed by biotic and abiotic elements, which underpin the stability of nature. When a component of the eco-cycle weakens or gets unwell, the entire bio community is disrupted. Scavengers are essential to the ecology, vertebrate scavengers provide various ecosystem services, including cultural (e.g., spiritual value), supporting (nutrient cycling), and regulating services (carcass removal from the landscape) (Wenny et al. 2011; DeVault et al. 2016). Vultures perform a vital role in nature's sanitation process by eating meat from carcasses (Houston 1974). Through their scavenging service, they provide a clean and healthy atmosphere. They defend the planet from diseases like anthrax and rabies (Anon 2016).

Total 23 species of vultures divided in two groups viz., old and new world vultures. 9 species of Old-world vultures are found in India (Ali & Ripley 1987) among them 7 species of vultures are found in the Gujarat State (Kamboj et al. 2016), out of them 4 species are residential viz., Egyptian Vulture *Neophron percnopterus*, Red-headed Vulture *Sarcogyps calvus*, White-rumped Vulture *Gyps bengalensis*, Indian (Long-billed) Vulture *Gyps indicus* and 3 are migratory; Himalayan Griffon

Gyps himalayensis, Griffon Vulture *Gyps fulvus*, and Cinereous Vulture *Aegyptius monachus* (Kamboj et al. 2016).

The most drastic decline of all in vulture populations occurred over the Indian subcontinent since the 1990s (Prakash 1999, Prakash & Rahmani 1999). Related to this matter many research have done and going on. (Saran & Purohit 2014; Kumboj et al. 2016). It is varied to know Egyptian Vulture population has declined by up to 90% in the last decades (BirdLife International 2017).

Our observations shows that the Banaskantha District provides a healthy environment for Egyptian Vultures. Thus, they are sighted in huge amounts as compared to other regions. Between December to March maximum numbers of individuals were observed in the district, which was up to 600-700 birds at Mervada Panjarapol.

Materials and Methods

The present study shows the population status at various sites located in Banaskantha (BK) district of Gujarat state, India. We mentioned data in this paper on the bases of time-to-time observations of our group members between 2006 to 2022. Birds are spotted with the naked eye as well as by Binoculars and photographs captured by Cannon and Nikon Cameras. Geographically, Banaskantha is located between latitudes 23° 35' and 24° 43' N and 71° 0' and 73° 0' E on the northwest of Gujarat state and bordering Rajasthan state as well as sharing the international border with Pakistan. The area of the district is 10754.7 km², which accounts for 5.5% of the total area of the state and is considered as the third largest district of the state. BK is spread across a plain, saline area that resembles a desert in the west and a curving, hilly area in the north and northwest. Jessore Wildlife Sanctuary and Balaram Ambaji Wildlife Sanctuary are the reserve forest habitat in this region, which supports rich biodiversity. Aravalli hills are the origins of the majority of the rivers. These rivers completely rely on the monsoon and dry up in the summer. Banas, Sipu, Balaram,



Photo 1

Arjuni, Sarawati, Sabarmati and Umaradashi are some of the significant rivers. The three distinct seasons of the climate are the monsoon, which lasts from July to September with brief breaks sometimes, winter, which lasts from October to February, and summer, which lasts from March to the end of June. The temperature in the north Gujarat region varies greatly, dropping to 5 °C in the winter and rising to 46 °C in the summer. Average rainfall during the monsoon season is 731 mm (GFS-2020-21), which creates the perfect environmental conditions for the occurrence and quantity of various flora and fauna.

Results and Discussion

The Egyptian Vulture was listed as endangered species in Red Data Book (IUCN 2007). This vulture species is worldwide threatened with extinction and the most rapid declines have occurred in the vulture-rich regions of Asia and Africa (Saran & Purohit 2014; BirdLife International 2018). It is categorized by the Convention on International Trade in Endangered Species of Wild Fauna and Flora, category II as per Indian Wildlife Protection Act, 1972. The Egyptian Vulture found resident species in some parts of Banaskantha district. It's gujarati name is 'Khero', whereas local people of Banaskantha called them 'Safed samadi'.

Egyptian Vultures normally feed on carrion and generally prefer forested habitats to human-dominated areas. Ali & Ripley (1987) however, highlight that the Egyptian Vulture can persist near human habitation and that it forages in refuse dumps. It is therefore an opportunistic scavenger that uses a variety of food sources in its diet. The aim of the present study was to check the population status and feeding sites of Egyptian Vultures in a selected area of Banaskantha.

The importance of the Gujarat state as a stronghold of vultures has been linked with the state's important role in dairy industry and livestock rearing. A large population of cattle and other livestock supporting the dairy industry naturally resulted in higher availability of carcasses that serve as food for various vulture species (Pandey et al. 2007). The crisis of vulture population declines in the country came to limelight in early 1990s (Pandey et al. 2007), Even after that, Gujarat was a state with good vulture diversity.

The Egyptian Vultures are large-distance migratory birds; they move Europe, Africa, and Asia. In Indian Subcontinent they observed residents and migrants (Bird Life International 2018). A huge congregation of Egyptian Vultures was recorded in Afar region, Sudan, Oman, and Chad. In India,

Table 1 - Scavenging Species at Mervada Panjarapol (Palanpur)

Sr No	Common Name	Species
1	Steppe eagle	<i>Aquila nipalensis</i>
2	Greater spotted eagle	<i>Clanga clanga</i>
3	Egyptian vulture	<i>Neophron percnopterus</i>
4	Red-wattled lapwing	<i>Vanellus indicus</i>
5	House crow	<i>Corvus splendens</i>
6	Jungle crow	<i>Corvus macrorhynchos</i>
7	Common myna	<i>Acridotheres tristis</i>
8	Bank myna	<i>Acridotheres ginginianus</i>
9	Black drongo	<i>Dicrurus macrocercus</i>
10	Brahminy starling	<i>Sturnia pagodarum</i>
11	Long-tailed shrike	<i>Lanius schach</i>
12	Cattle egret	<i>Bubulcus ibis</i>
13	Red-naped ibis	<i>Pseudibis papillosa</i>
14	Black-headed ibis	<i>Threskiornis melanocephalus</i>
15	Owl sp.	-
16	Wild boar	<i>Sus scrofa</i>
17	Feral dog	<i>Canis lupus familiaris</i>
18	Jungle cat	<i>Felis chaus</i>
19	Striped hyena	<i>Hyaena hyaena</i>
20	Small Indian civet	<i>Viverricula indica</i>
21	Bengal monitor lizard	<i>Varanus bengalensis</i>

large congregations were recorded in Rajasthan during 2004 of 1171 individuals of Egyptian Vultures (Chhanagani 2005). Mishra et al (2018), studied a state-wise congregation of Egyptian Vultures in UP more than 800 individual were noted. In Gujarat, the state-wise estimation carried out by GEER Foundation, Gandhinagar during May 2012 and May 2016, while the count of Egyptian Vultures was observed 97 and 132 respectively (Kamboj et al. 2016).

We nature lovers frequently go for birdwatching in nearby places around Palanpur, Banaskantha District. The first author (SP) collected some counts during his research work on Ecology of Common Avian Species in the Balaram-Ambaji Wildlife Sanctuary. Related to research work selected Hathidra site (20 km from Palanpur in east) for bird data collection during 2006-2008 and sighted

49-63 individuals of Egyptian Vulture (Photo 1). A good number of Egyptian Vultures sighted at Banas Dairy from September 2012 to December 2012 by our teams members Sanjay Patel and Prakash Chaudhary. During the observation, they found 51-59 Egyptian Vultures. Dr Mayank Shah a Physician, observed 100+ Egyptian Vultures in November 2013 at Mervada Panjarapol site. On January 14, 2014 we observed around 300 individuals. During the tracking on February 26 and March 5, 2017 at Ranitunk site (West side of Jessore Wildlife Sanctuary) Kailas Jani and others observed 19 and 3 individuals respectively. During both the visit they found a pair involved in mating. We observed 400-500 Egyptian Vultures on December 29, 2017 while on January 13, 2018 they were in huge numbers around 600-700 individuals at Mervada Panjarapol site. On this site 420-500 Egyptian Vultures were sighted on



March 4, 2018 and 42 individuals on October 12, 2018.

Sagar Dave, PG student HNGU, Patan did survey on Population status of the Egyptian Vulture at various sites like Mervada Panjarapol, Banas Dairy and Kant Panjarapol during December 2018 to March 2019 and he observed Mervada Panjarapol is the richest site about Egyptian Vulture. During the data collection he sighted 123-257 individuals at MP, 6-21 at BD and 47-83 at KP. He also observed site wise population of adults, sub-adults, and juveniles. At MP 31-64 adults, 35-82 sub-adults and 39-134 juveniles; at BD 0-6 adults, 0-8 sub-adults and 0-9 juveniles, while at KP 8-24 adults, 11-26 sub-adults and 19-34 juveniles sighted by him. Mayank Judal, PG student HNGU, Patan studied on similar site that the carcasses were visited by a diverse group of 21 vertebrate species, including 15 species of birds, five mammals, and one reptilian species, were seen feeding on carcasses (Table 1).

On December 10 & 11, 2022 birdwatchers surveyed vulture species and their numbers in Banaskantha (The program organized by GEER foundation). During this survey, the team members went to various sites like; Mervada Panjarapol, Kant Panjarapol, Banas Dairy, Ranitunk, Sardar

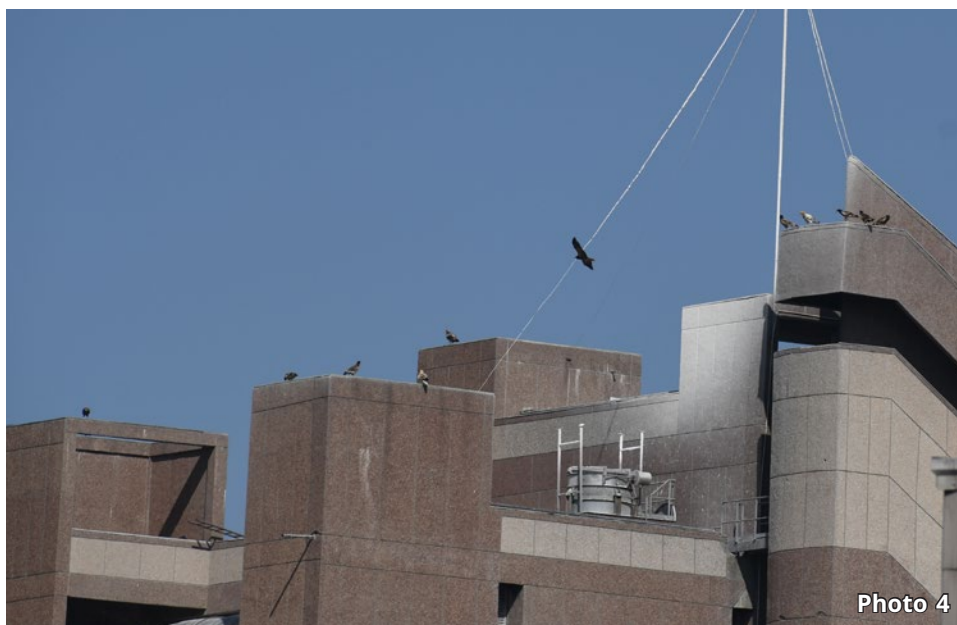
Dantivada Agriculture University (SDAU) campus, Bhakhar Hill, Sodal Panjarapol, Vid Panjarapol and Jessore hill. Out of them, Mervada Panjarapol, Kant Panjarapol, Banas Dairy, Ranitunk, Bhakhar Hill and SDAU were the sites where 412, 314, 15, 4, 5, and 3 individuals were sighted respectively.

Compared to other regions of Gujarat state, Banaskantha found very potential for population of Egyptian Vultures (Table 2). It is also observed that Mervada Panjarapol is richest site where good numbers of individuals of this species counted (Photo 2) followed by Kant Panjarapol and Banas Dairy. Jessore, Ranitunk, Bhakhar Hill and SDAU are the other sites where 3-4 Egyptian Vultures were counted. During birdwatching, Kailas Jani observed nesting activities of Egyptian Vulture at Ranitunk and Sankleshwari hills. One working nest was sighted near Isaria (Virampur) and another at the Bhakhar Hill site.

Mervada Panjarapol is located 20 km away from Palanpur on 24°14'37"N, 72°33'51"E. Panjarapol was established in 1973 by an authorized charity trust for serving unhealthy or unfertile cattle. This site is spread over 400 acres of land covered with cropland and forest, which provides shelter to around 2100-2500 cattle. Dumping sites of Panjarapol dump 12-15 carrion



every day which provides rich amount of food to this vulture and other wildlife fauna (Dave 2019). Most frequent numbers of scavengers are found at the study site (Table 1) (Judal 2023). Various birdwatchers noted that winter is favourable for this species, when 500+ Egyptian Vultures were observed. As per my observation during 2018 sighted 42-700 individuals on this site. Nearby the region Hathidra Hills are helpful to roosting and breeding activities of Egyptian Vulture (Photo 3).



Kant Panjarapol, Deesa (24°26'60"N, 72°24'17"E) is another site, where noted good numbers of this species. As per Dave's observations (2019) this shelter home provides shelter around 1100-12000 cattle like cow, buffalo, camel got, sheep etc. During the Vulture census-2016 as part of GEER foundation team, we observed some Egyptian Vultures on this site and Dave (2019) counted 47-83 individuals of this species. Last December was found with richest record while 314 Egyptian Vultures were sighted on this site.



Banas dairy, Palanpur (24°08'16"N, 72°26'21"E) is largest milk industry in Asia located close to Palanpur urban area. During year of 2010 when I pass through dairy side road some Egyptian Vultures were resting on roadside trees and a few were in flight. It was also observed that some birds were

Table 2 - Population of Egyptian Vulture at various sites of Banaskantha during the study

Sr. No.	Site	GPS	Date	Count	Remark
1	Hathidra Hills, Palanpur	24°13'43"N 72°36'11" E	2006	56-58	Suresh
2	Hathidra Hills, Palanpur	24°13'43"N 72°36'11" E	2007	46-62	Suresh
3	Hathidra Hills, Palanpur	24°13'43"N 72°36'11" E	2008	49-63	Suresh
4	Banas Dairy, Palanpur	24°08'16"N, 72°26'21"E	2012	51-59	Sanjay, Prakash & Suresh
5	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	Nov- 2013	100+	Dr Shah
6	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	14/01/2014	290-300	Suresh
7	Ranitunk, Dantivada	24°23'06"N, 72°24'01"E	26/02/2017	19	Kailas Jani Observe mating
8	Ranitunk, Dantivada	24°23'06"N, 72°24'01"E	05/03/2017	3	Kailas Jani Observe mating
9	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	29/12/2017	400-500	Suresh
10	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	13/01/2018	600-700	Dr Shah
11	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	04//03/2018	420-500	Suresh & Kailas Jani
12	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	12/10/2018	42	Suresh & Kailas Jani
13	Kant Panjarapol, Deesa	24°26'60"N, 72°24'17"E	Dec-2018	47-56	Sagar Dave
14	Kant Panjarapol, Deesa	24°26'60"N, 72°24'17"E	Jan-2019	71-83	Sagar Dave
15	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	10/02/2019	80-90	Sagar Dave
16	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	17/02/2019	180-200	Sagar Dave
17	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	10/12/2022	375	Soni & Judal
18	Mervada Panjarapol, Palanpur	24°14'37"N, 72°33'51"E	11/12/2022	412	Nemi & Judal
19	Banas Dairy, Palanpur	24°08'16"N, 72°26'21"E	10/12/2022	15	Kailas Jani
20	Ranitunk, Dantivada	24°23'06"N, 72°24'01"E	11/12/2022	4	Kailas Jani
21	Kant Panjarapol, Deesa	24°26'60"N, 72°24'17"E	10/12/2022	314	Sutariya & Hadiya
22	Bhakhar Hill, Dantivada	24°16'38"N, 72°17'18"E	10/12/2022	5	Sutariya & Hadiya
23	SDAU, Dantivada	24°19'19"N, 72°19'13"E	10/12/2022	3	Sutariya & Hadiya

feeding on the roof of milk processing unit (Photo 4). September to December 2012 My students Patel Sanjay and Chaudhary studied the site focused on Egyptian Vultures activity. During the observations they found 51-59 Egyptian Vultures as solitary or in small groups which feed on the roof of Banas Dairy powder plant. In morning 7.00 to 10.30 the birds were observed mostly involved in foraging when they feed on milk power deposited there. At noon time they observed on trees of inside and around the campus as well as in hovering. A research poster prepared with these data on the title 'Foraging Observations on Egyptian Vulture (*Neophron percnopterus*) at Banas Dairy, Palanpur', in the National Seminar jointly organized by BCSG and ASPEE College of Horticulture and Forestry, NAU, Navasari on January 22, 2012. As an employee of the dairy Kailash Jani frequently observed Egyptian Vultures around and inside this industry. He noted foraging activities such like observed by Patel, Chaudhary and Prajapati (2012). Kailash Jani captured some photographs of this bird while they were foraging milk powder (Photo 5).

Conclusions

Our observation shows that the Banaskantha is rich region about Egyptian Vulture population. During winter the bird count increased largely where during summer and monsoon, it's numbers found decreased. Directly or indirectly cattle support to this species. Forest and Hilly habitat observed breeding sites for them.

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References

Ali, S. & Ripley, S.R. 1987. *Handbook of Birds of the birds of India and Pakistan*, Oxford University press, New Delhi, Pp.296-314.

Anon. 2016. Vulture: An Endangered Bird. *Punjab ENVIS Newsletter* 13(1&2).

BirdLife International. 2017. *Neophron percnopterus*. The IUCN Red List of Threatened Species 2017:e.T22695180A118600142 <http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T22695180A118600142.e>

BirdLife International. 2018. Birdlife Data Zone. <http://www.birdlife.org/datazone/home>. Accessed 19 Jan 2017.

Chhangani, A.K. 2005. Population ecology of Vultures in the western Rajasthan, India. *Indian Forester* 131: 1373-1382.

Dave, S. D. 2019. Population status of the Egyptian Vulture: A case study in Banaskantha District, Gujarat. MSc Zoology Dissertation thesis, HNGU, Patan Pp.30-34.

DeVault, T. L., Beasley, J., Olson, Z. H., Moleón, M., Carrete, M., Margalida, A., & Sánchez-Zapata, J. A. 2016. Ecosystem services provided by avian scavengers.

Judal, M.L. 2023. Study on participatory feeding of vertebrate scavengers and their ecosystem services. MSc Zoology Dissertation thesis, HNGU, Patan Pp. 26-33.

Houston, D. C. 1974. The role of griffon vultures (*Gyps africanus*) and (*Gyps ruppellii*) as scavengers. *Journal of Zoology* 172: 35-46.

IUCN. 2007. Extinction crisis escalates: Red List shows apes, corals, vultures, dolphins all in danger, Press Release Sept 11, 2007.

Kamboj, R.D, K. Tatu & Munjpara, S.B. 2016. Status of vultures in Gujarat-2016. Gujarat Ecological Education and Research (GEER) Foundation, Gandhinagar Pp.25.

Mishra, S., Kumar, A., Sharma D.S, & Kanaujia, A. 2018. Congregations of two subspecies of Egyptian Vulture *Neophron percnopterus* in Unnao district of Uttar Pradesh, India, *International Journal of Life Sciences*6(4):905-910.