

From the Editorial Desk: About the Raptors of Gujarat

This issue of Flamingo, Gujarat, is a special issue titled '**Raptors of Gujarat**' brought together by the team of Flamingo, Gujarat, BCSG. I hope the readers enjoy this issue, with various articles discussing different observations and aspects of raptors from Gujarat.

I am genuinely grateful to the members of our editorial team for accepting the suggestions and theme by Mr. Devratsinh Mori. It has been an exciting experience to compile comprehensive studies by different authors/submitters, enriching this issue with diverse observations, methodologies, and documentation for many a species of raptors.

Etymologically, '**raptor**' is derived from its Latin root '*rapio*,' meaning '*plunderer, robber, beast or a bird of prey*,' from the verbiage of '*rapere*,' which refers to the action of seizing and carrying away by force. Raptor refers to a group of birds known as 'Birds of Prey.' These birds have extremely powerful eyesight, strong wings, sharp talons, and strong beaks for hunting and discerping. Raptors are generally medium or large-sized and prey on other smaller animals, including small birds, fishes, mammals, lizards, and insects. These birds typically hunt live prey and carry it away with their beaks, though occasionally, raptors consume fresh carcasses in scarce situations. Globally, raptors are widely distributed across all the continents except Antarctica. There are over a dozen different groups of birds categorized as raptors or birds of prey, namely Eagles, Hawks, Buzzards, Kites, Harriers, Vultures (Old & New World), Ospreys, Owls, Falcons, Secretary birds, Seriemas, and Caracaras.

Within Gujarat:

India's westernmost state, Gujarat, is one of the country's most biodiverse regions. Its political boundaries encompass a uniquely diverse

geographical region comprising various habitat types, ranging from moist deciduous forests to deserts and freshwater wetlands to saline gulfs with mudflats

and mangroves. A majority of peninsular India's mountain ranges, such as the Aravallis, Vindhyas, and Satpura, as well as the Western Ghats (Sahyadris), culminate in Gujarat, creating a rich hotspot of various habitats which harbor unique and diverse flora and fauna, especially avian fauna.

Gujarat's rich, diverse bird fauna features over 615 species of birds, including 75 species of raptors, including resident, migratory, vagrant, diurnal, and nocturnals (Ganpule et al. 2022) belonging to four families; Pandionidae, Accipitridae, Tytonidae, and Strigidae. Birds of Prey are known for their charisma and dynamism, being the apex predators and keystone avians impacting their ecosystems fundamentally. Thus, raptors play an ecologically and culturally significant role, serving as an overarching umbrella or flagship species for conservation programs, benefiting other species multivalently.

Vanishing Vultures:

We know that within the last few decades, an entire genus of Gyps Vulture has catastrophically declined from the Indian Subcontinent (Markandya et al. 2018). Similarly, in Gujarat, vultures have continued to vanish. In the early eighties, Indian White-rumped Vultures (*Gyps bengalensis*) were a common sight, often found soaring uncountably in the skies of Gujarat. However, the species is on the verge of extinction four decades later. I have myself observed and noted substantial numbers of vultures, roosting and breeding right



in the middle of dense urban areas of Gujarat; in Bhavnagar (Gadhadiya Maidan), Jamnagar (Jam and Lal Bungalows), Ahmedabad (Gujarat University Campus and IIMA, Vastrapur), and Vadodara (Sayaji Garden and Zoo) (Vyas 2004 & 2006). Anecdotal to my personal experiences, I have regularly witnessed a small number of injured vultures; almost every year during Uttrayan (kite-flying festival). These vultures were rescued by locals and brought to Sayaji Baug Zoo for treatment and rehabilitation, retained in captivity in the zoo facilities (Walker 1992). Eventually, an entire population of vultures has disappeared, with a handful of rare sightings being recorded now.

The decline of the vultures in the state is, in many ways, a wake-up call, calling our attention to addressing raptor conservation on common grounds. To assess the situation and plan organized action, BCSG declared a workshop, "Current Status of Vultures, Gujarat," on September 19th, 2004, in Anand, with the help of Anand Agriculture University. The workshop, in turn, proved to be a milestone event with a time-sensitive conservation agenda, calling forth an urgent need for awareness, monitoring, and habitat assessment, ultimately helping the vultures recover from regional extinction.

Every year, BCSG members, university researchers, and enthusiastic bird-watchers now come together and monitor the vulture populations, across Gujarat, with the help of the GEER Foundation and State Forest Department. These sincere and proactive efforts have yielded crucial information about the Vultures of Gujarat, revealing important aspects that lead to this epochal decline. Indeed, the catastrophic decline of vultures across the Indian subcontinent was a prolonged result of diclofenac's introduction as a common veterinary drug, especially for cattle, during the '90s (Oaks et al., 2004). Many cases documenting vultures facing severe health issues emerged with the widespread use of diclofenac (Green et al. 2004). In no time, it was unmistakably accepted that

this culprit drug was mainly responsible for the sudden sharp decline of *Gyps bengalensis* and Indian Vulture *Gyps indicus* populations (Prakash et al. 2005). Also, parallelly other two species of vultures are declining throughout India, including the Egyptian Vulture *Neophron percnopterus* and Red-headed Vulture *Sarcogyps calvus* (Cuthbert et al. 2006).

A situation like this is a classic example where indirect anthropogenic threats impact wildlife and thus require active awareness and consistent conservation measures. Often, ruptures reveal resilience and opportunities. Likewise, this situation required novel solutions and concepts to ensure that the wild vulture populations were consuming diclofenac-free foods. Hence, the concept of 'vulture restaurants' caught momentum, and dedicated vulture-feeding sites were found across the vulture distribution range. Surat Nature Club started a vulture restaurant in Gujarat at Hajira in 2009, helping vultures feed on diclofenac-free food with conscious human-led efforts. More than 100 vultures thrived in the vicinities of the Hajira restaurant. In 2012, the experiment could no longer sustain itself as the number of visiting vultures diminished. So, within three years, the Vulture restaurant had to shut down, ending a wonderful experimental initiative.

On the other hand, the State Forest Department has been running a captive breeding facility for Gyps Vultures at the Sakkerbaug Zoo, Junagadh, with a constant hope to reintroduce and rehabilitate captively bred vultures back into Nature. However, as far as the efforts of the breeding center are concerned, very little has been documented and published. We continue to tread into the future with a blur promise and a firm hope, marveling if our future generations would be fortunate enough to spot vultures circling the Gujarat skies, as we once did in the recent past. Across the state, there still are a few places where the vulture populations have managed to survive despite significant shrinkage; near Girnar, Khambhat, Pavagadh, Kadana, Kutch, and small

pockets of North Gujarat. Somehow, this dismal premise only accounts for a specific group of raptors, leaving a lot to be desired for other raptor birds. A veil of obscurity and a lack of real-time monitoring of other raptor groups, such as Eagles, Hawks, Buzzards, Kites, Harriers, Falcons, and Owls, only adds to our concerns about these species and their chances of survival.

Numbers:

A total of 557 extended species of birds from various groups considered raptors by BirdLife International (2017) are known to occur in India, of which 98 species belong to four families of birds (Praveen et al., 2016; Praveen & Jayapal, 2023). 75 raptor species (diurnal & nocturnal) have been reported from Gujarat (Ganpule et al., 2022). Discrepancies with these reported numbers may occur due to the consideration of some vagrant species or the discretion of a few ornithologists not to consider specific species as raptors.

Of the 557 extant raptor species assessed by BirdLife International (2017), 103 (18%) were considered threatened (Vulnerable, Endangered, or Critically Endangered), with a further 70 (13%) classified as Near Threatened. Over half the species (n=292, 52%) had declining population trends, and only 9% of species (n=49) had increasing population trends, with a 3% having unknown population trends (n=15: five owls and 10 hawks and eagles). Among the 142 Least Concern species, 38% had declining population trends. A comparison of the proportion of threatened or declining species among the raptor groups showed that the old-world vultures were disproportionately threatened (McClure et al., 2018).

Status:

Old World vultures are the most threatened group of raptors, with 12 of 16 species listed as Endangered or Critically Endangered, and over 80% of species declining steadily. The global loss of raptors per se is worrying, not just because of their charismatic presence and flagship role

in our ecosystems but also because a reduced abundance of raptors bears cascading effects on an entire ecosystem. Shrinking raptor populations imply reduced prey availability and changes in prey's behavioral attributes. The present scenario and research results indicate that raptors are more endangered than birds in general, with 52% of raptor species in decline and 18% currently classified as threatened with extinction.

Threats:

Like other forms of wildlife, all raptor species are affected by various threats. Threats to raptor populations include habitat loss and alteration, direct and indirect poisoning, electrocution, climate change, collision or entanglement with handmade kites/threads, contagious diseases, and wildlife trade. Raptors are often understudied because they occur in low densities over large ranges and can be elusive and, thus, difficult to detect. A recent study (Mahananda et al. 2022) shows that raptors still need to be studied more. Thus, it can be stated unequivocally that inadequate information on the regional status and ecology of birds of prey predominantly hinders the development of effective conservation measures.

The loss of Vulture populations signals the first warning, hinting to us to reconsider our approach and action toward other groups of raptors, who are more or less following similar trends. The clock is ticking, and the more we hesitate or remain dormant toward these shrinking populations, the closer we approach a disastrous future.

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