



Some observations on vultures in Pench Tiger Reserve, Madhya Pradesh

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Between October 2006 and June 2008 information on population, group size, habitat use and food habits of six species of vultures was collected in Pench Tiger Reserve (79°9'-79°22' 30"E & 21°38'-21°50'30"N) Madhya Pradesh. The Tiger Reserve comprises of Sanctuary, National Park and reserved forests. The total area of the Pench Tiger Reserve is 758km². According to Champion & Seth (1968) the flora of Pench falls under tropical dry deciduous forest (Champion & Seth 1968). Based on ad-libitum observations, locations of vultures were recorded using Global Positioning System (GPS) from the entire Tiger Reserve. In addition, the number of individuals of each species, major vegetation type around 20m radius and the prey species on which vultures were found feeding were also noted on each observation.

In total 547 individuals belonging to six species of vultures were recorded. Of these, the Oriental White-backed or White-rumped Vulture (*Gyps bengalensis*) were found to be the most abundant (n=334) followed by Long-billed Vulture (*Gyps indicus*) (n=184), Red-headed or King Vulture (*Sarcogyps calvus*) (n=12), Egyptian Vulture (*Neophron percnopterus*) (n=9), Indian Griffon Vulture (*Gyps fulvus*) (n=5) and Cinereous Vulture (*Agypius monachus*) (n=3). The Indian Griffon and Cinereous Vulture were recorded only during winter (November-February) whereas the other four species were recorded throughout the year.

The number of individuals and percentage flock size of vultures is given in Table 1. A maximum of 28 individuals were recorded for white-backed vulture in a flock, where as the

Long-billed Vulture had a maximum of 18 individuals in a flock. Multiple associations among different species of vultures were also recorded during study period (Table 2).

Vultures were largely found in riparian forest (70%) followed by miscellaneous forest (23%) and teak mixed forest (7%). White-backed and Long-billed Vulture nests were recorded on *Tectona grandis* and *Dalbergia paniculata* at four sites each in Gumtara, Alikatta, Chiklakhari and Chindwani. No attempts were made to study the nesting success of vultures. However fledglings of White-rumped Vultures were seen once during the study period.

In total 24 kills of Wild Ungulates (20 Chital, three Sambar and one Nilgai) were recorded. Of these, 16 kills were located due to vulture's activity. On ten occasions Jungle Crow (*Corvus macrorhynchos*) was found associated with vultures on the feeding grounds followed by Golden Jackal (*Canis aureus*) on five occasions and Wild Pig (*Sus scrofa*) on two occasions. During the study period two vultures, one each of White-backed and Long-billed were found dead in the study area. Post-mortem reports revealed that these were natural deaths (Akhilesh Mishra pers. com.). Since Pench harbours one of the highest prey-predator densities (Biswas & Sankar 2002) in central Indian landscape, vultures have better chance of survival on carnivore kills. It is suggested that the reported breeding sites of vultures in Pench need monitoring for the survival of chicks. Since the 1990s vulture populations especially the *Gyps* species across the Indian subcontinent have declined drastically (Gilbert et al. 2002; Prakash et al. 2003; Green et al. 2004). The findings of the present study showed encouraging results regarding the population of *Gyps* species in Pench

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Table 1. Number of individuals and percentage flock size recorded for six species of vultures in Pench Tiger Reserve (2006-2008)

Species	Number of flocks	Mean flock size	Number of individuals	Flock size in %				
				1	2-3	4-10	11-20	21-30
King vulture	11	1.5	12	91	9	—	—	—
White-backed vulture	66	14	334	11	50	26	11	3
Long-billed vulture	37	9	184	24	27	37	11	—
Egyptian vulture	4	1.5	09	50	50	—	—	—
Indian griffon vulture	3	1.5	05	33	66	—	—	—
Cinereous vulture	1	3	03	—	100	—	—	—

Table 2. Multiple associations among different species of vultures recorded in Pench Tiger Reserve (2006-2008)

Species associations	Number of occasions
Long billed - White Backed	15
White backed - Long billed - Egyptian	3
White backed - King Vulture	2
King Vulture - White backed - Long billed	3
King Vulture - White backed - Long billed - Egyptian - Indian Griffon	1
King Vulture - White backed - Long billed - Egyptian - Indian Griffon - Cinereous	1

