

Population and breeding success of vultures (*Gyps bengalensis* and *Gyps tenuirostris*) in Royal Sukla Phanta Wildlife Reserve

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Introduction

Vultures are probably the largest flying birds in Nepal and are closely tied with the human being in diverse way. The vultures are regarded as the most efficient scavenger of nature and thereby prevent the human beings attack from many fatal diseases (Giri and Baral, 2001).

There are eight species of vultures in Nepal. Among them, three species (*Gyps bengalensis*, *Gyps indica* and *Gyps tenuirostris*) are considered as the "Critically Endangered" by Birdlife International (Birdlife International, 2000). This highlighted the threat for all the *Gyps* species in South Asian region. In the Indian subcontinent this species is found from Pakistan east through Assam and Manipur and south from Kashmir and along the Himalayas including Nepal (Ali and Repley, 1987).

Decline of vultures at noticeable rate in South Asian region is not long back. It is about one and half decade back (Thiolly, 2000). White-rumped Vulture was very common in Thai-Malaya peninsula previously, however now it is confined to particular area only and declining at massive rate (Wells, 1999). Vultures have been declining from different parts of Nepal also. The White-rumped Vulture *Gyps bengalensis* was one of the very common vulture species in lowland Nepal (Fleming et al. 1984, Inskipp and Inskipp 1991) now becoming local to few areas. One of the most recent examples is Royal Chitwan National Park where previously many vulture nests were found but now totally wiped out. The vulture population at Koshi Tappu Wildlife Reserve and its surrounding within 2001 to 2004 is declining at alarming rate (Giri et al. 2004).

The White-rumped Vulture (*Gyps bengalensis*) and Long-billed Vulture (*Gyps indica indica*) are the Common vultures in the lowland Nepal and throughout Indian Subcontinents (Fleming et al 1984, Inskipp & Inskipp 1991). White-rumped Vultures found throughout the area from West Pakistan, East through Assam & Manipur, South from Kashmir except West Pakistan, N. Himalayas, Parts of North east, North West and South east India and Pakistan. White long-billed are the resident of South east Sindh, Pakistan, Southern Part of Nepal and North Bangladesh and most of India except parts of the North west, North east and South east (Ali & Ripley, 1968). The White-rumped is the widespread resident below 1000m but recorded upto 1800m in summer while Slender-billed is resident mainly below 350m but recorded upto 1525 m in summer (Inskipp & Inskipp, 2000). Their population had been very unusually high. In New Delhi, upto 400 pairs were found in an area of 150 sq. kilometers (Newton, 1979). In Keoladeo National Park, the active nests of White-rumped Vulture very sharply from 353 in 1987/88 to none in 1999/2000. As many as 265 White-rumped & 29 Slender-billed dead vultures were recorded from 1997 to 2000 in the park (Prakash, 1999). Unexpected death & similar declines of White-rumped Vulture were recorded in other parts of India.

The decline in Vultures have been noticed for last ten or more years in South-east Asia and throughout Indian Subcontinents (Thiollay, 2000). In the Thai-Malay peninsula, where the White-rumped Vulture was "resident & widespread" previously now described as "local and sparse" (Wells, 1999). However, since 1997, the decline in White-rumped Vultures in parts of Northern India has been occurring at alarming rate becoming locally extinct in places (Risebrough, 1999; Rahmani, 1999; Prakash in press; Virani in prep.).

Vultures have been declining in many parts of Nepal of the most noticeable is the White-rumped & Slender-billed. No any vulture was recorded in Kathmandu Valley since 1993 (Baral, 1993a & b). There is no any vulture nest recorded within Royal Chitwan national Park since 1995 (Hem Sagar Baral, Bishnu Mahato pers. comm.). Very small number of Vultures were found at Chitwan and Bardia in 2001 compared to 1982 (Inskipp and Inskipp – 2001). A total of 45 dead vultures were recorded in Koshi last year. There were 67 active nests in 2001 which decreased to 12 in 2003. Out of 67 active nests, only 19 were able to fledge the chicks successfully. The 67 active nests of 2001 decreased to 12 active nests in 2002 among which only 2 were successfully fledged their youngs (Giri & Baral, 2001, 2002). Vulture population in Koshi declined sharply in 2002. In Suklaphanta, only 3 nests were able to fledge the chicks out of 19 active nests. As total of 7 dead vultures were recorded in Suklaphanta. It was suspected that number might be increased if the whole area was thoroughly surveyed (Giri & G.C., 2002). Vulture of Nepal is decreasing in massive rate and they may extinct in near future if the situation is not changed and no any intervention make. Only the four nests were capable to fledge chicks in 2003 in Sukla Phanta in 2003 (G.C. and Giri, 2003). The White-rumped Vulture is almost gone from Koshi area. Only a few numbers of nests (only four in 2002, two in 2003 and two in 2004) were able to fledge their chicks in Koshi (Baral, et. al, 2004).

December 2003 (G.C. and Giri, 2003). Like wise highest number of Slender-billed Vulture recorded in one day was only 8 individuals in February. Not more than eight Slender-billed Vultures and four White-rumped Vultures were seen in a flock in Simal Phanta (Piparia). Like wise 20 White-rumped and 10 Slender-billed in February, 16 White-rumped and 6 Slender-billed in April, 8 White-rumped and 3 Slender-billed in May and 7 White-rumped and 3 Slender-billed in June were recorded (See in table). If we compare the total number of both the vulture species recorded either in a flock or different flocks in 2003 and 2004, it is clearly shown that the vulture population in Sukla Phanta Wildlife Reserve has decreased by more than fifty percent in 2004. There were more chances of repeated counting of the same individual this year in comparison to previous year. However, they were recorded in different time and location and tried to minimize the double counting so far as possible. The activities as well as number of the vulture was decreased from breeding season onwards and reach minimum in May-June as in previous years.

A total of 22 carcasses were recorded this year. It was less than the 34 carcass of 2002 and 24 of 2003. Out of 22 carcasses majority was belonged to Swamp Deer (12 number). Chittal carcasses were only four; other four were belonged to cows and two of buffaloes. Carcasses in the human settlement area were found in the assistantships of local youths. There was low possibility of finding out the intact carcass inside the reserve however only the skeletons were available as in the previous years. It might be due to high density of scavengers in the reserve. Again, the interior parts of some of the grassland like Barkaula, western border of Sukla Phanta, Singhpur Phanta was not possible to scan the carcass leftovers due to security problem. The data of last three years showed that there is no fluctuation in food of vultures even though the vulture population is decreasing every year.

Conclusion

The vulture population in Royal Sukla Phanta Wildlife Reserve was sharply decreasing in 2004 in comparison to the population of year 2002 and 2003 even though there was no significant alteration in number of carcass. The availability of food was good. There was no any dead vulture seen in the study period. Even though three and four nest were able to fledge their chicks, no a single nest neither active nor inactive was found in 2004. This scenario shows very sensitive effect result to all the people working in the field of conservation. The use of diclofenac is very common in this area also. Only one nest was seen in Hirapur Phanta in this year (Personal communication with B.S. Paudel, Assistant Warden, Sukla Phanta Wildlife Reserve, 2004)

Recommendation

The establishment of captive breeding centre in the appropriate place is urgently required to save the concerned *Gyps* vultures. Breeding of animal in ex-situ condition can not be recommended in their normal condition. However, the situation of these species is very poor and they might be extinct rather than return in normal condition very shortly if the in-situ situation is not changed.

There might be some strong causes for the declining of vultures in such an alarming rate. One of those causes is the **diclofenac**, which is already declared by experiment. There is no alternative solution except the banning of diclofenac to control the vulture mortality immediately. Besides this, an unidentified epidemic infection might be there for that catastrophic decline. Therefore, there should be proper scientific study in different aspects of biology.

The people who are working in the field of biodiversity or environment should be tied strongly. There is urgent need of the formation of net-work among the scientists group to take initiatives for the control of fauna extinction from the world. Formation of net-work and circulation of information make the people more

As the vulture population in Royal Sukla Phanta Wildlife Reserve is decreasing at accelerating rate, the continuous monitoring of the population is essential for collecting the further information. There can be some nests in the area next year which should be entered in our account to understand the real condition of the species.

Local community is always closeness to the reality whatever the situation. Effort of the local community play vital role for conservation of the nature and natural wealth. There is no effect of any initiative in the real ground until and unless the local people are not educated. Therefore, conservation education to the locals should be at the first priority of each and every government.

Objectives

- (i) To estimate the population of vultures (White-rumped & Slender-billed) in Suklaphanta.
- (ii) To find the total nest and breeding success.
- (iii) To evaluate the food availability.
- (iv) To assess the mortality rate.

Method

The Royal Suklaphanta Wildlife Reserve is located in low land of Far-western region of Nepal covering an area 305 Sq. Km. It has tropical climate. *Dalbergia sissoo*, *Bombax ceiba* *Acacia catechu* are the dominant tree species of the area. Tropical mixed forest, pure Sal *Shorea robusta* (*Shorea robusta*) forest and largest grassland in the country harboring the largest remaining heard of swamp deer are the characteristics of the area. This study was the continuation of previous two years work. The study area was surveyed thoroughly. Main focus was given to that area where study was conducted since two years back.

The preliminary survey was made in December 12 to 17, 04 considering that November-December is the nesting period for the White-rumped and Slender-billed Vulture in South Asia (Ripley et. al. 1987). All the last year's nesting sites along with new potential sites were carefully surveyed to find out the nests. A total of four visits were made in the area in different seasons. The first visit was made in December, second in February, third in April and last in June. Direct field observation and direct counting method were applied to estimate the population. A pair of telescope, a pair of binoculars (8×40) and *Birds of Nepal* by Grimmett, et. al. 2000 was used for distinct visualization and species identification. Vulture roosting sites were carefully monitored in regular intervals from the beginning of the study to find out the dead vultures. Grasslands as well as the residential area close to the reserve were visited to find out the carcass in every field trip.

Result and discussion

There was not a single vulture nest recorded in Sukla Phanta Wildlife Reserve in the year 2004 even though all the nesting sites of previous year were thoroughly checked in every field visit. However a total of fifteen and fourteen nests were recorded in 2002 and 2003 in the area respectively. Out of those nests, three and four were able to fledge their chicks respectively. It was the most surprised finding of that in spite of previous year; no any nest was detected this year in the study area. However, one active nest of White-rumped Vulture was seen in Hirapur Phanta located near Arjuni Post. No any vulture nest was reported from the area in last two years. This study was confined to the area where most of the nests were aggregated in past two years. However, nearby areas were scanned thoroughly hopping the change of nesting locality. Most of the vulture population flew towards India across the western border. The White-rumped Vulture had changed the nesting locality in 2002 and 2003 but it was not so far. It has been supposed that the nesting colony might be formed in India this year also.

Although remains of seven dead vultures in 2002 and two in 2003 were recorded from the area, no either any dead vultures or remains was found this year. The vulture mobility was also low this year. Very few numbers of vultures were seen in roosting position this year which was unpredictable to last year's population. No any vulture was sited with head-drooping behaviour in 2004.

As many as 37 White-rumped Vultures and twelve Slender-billed Vulture were recorded in January 2002 in two different flocks (Giri and G.C., 2002). As the same way as many as twenty one Slender-billed Vultures in December and twenty-eight White-rumped Vultures in February were the largest number recorded in 2003. However a total of 34WR White-rumped Vulture (29A+5SA) and eleven Slender-billed Vultures (9A+2SA) were recorded in different four days in December 2003. The highest number of White-rumped Vulture seen was 15 individuals in a flock in

Table and figure

Fig. 1. Vulture population recorded in Sukla Phanta in different months of 2004.

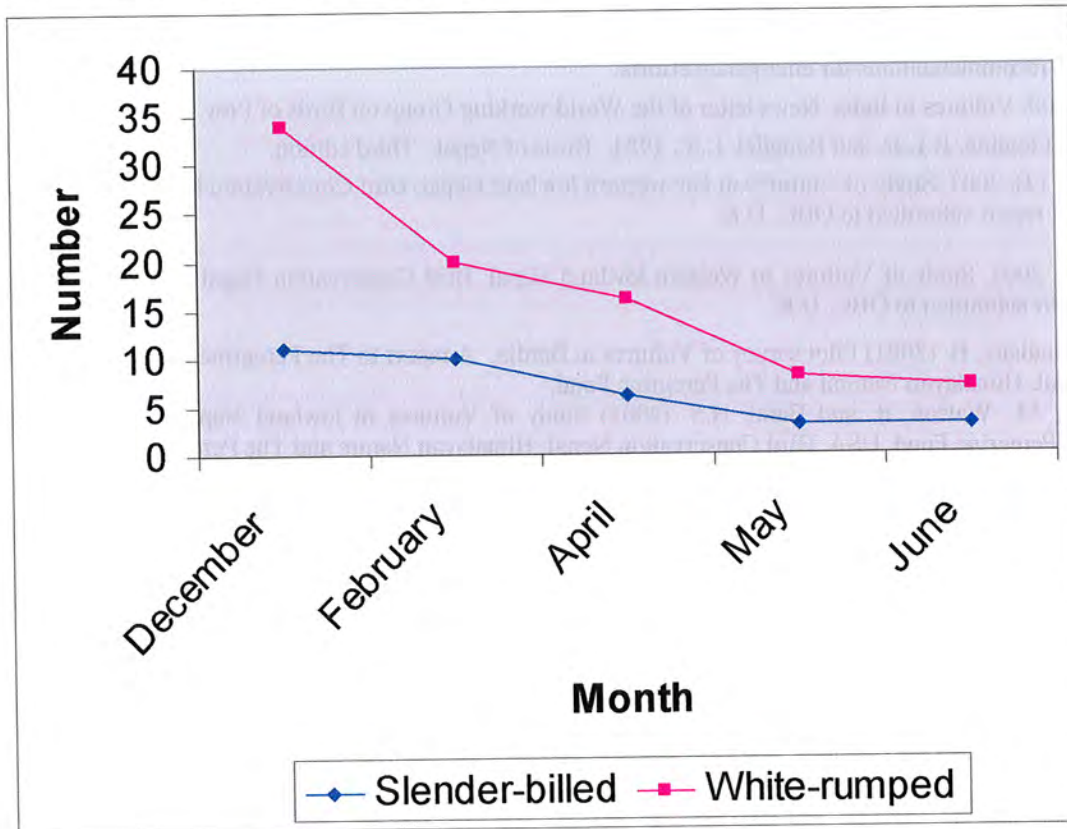


Table-1. Vulture recorded in Suklaphantain 2004

Area	December	February	April	May	June
Sukla Phanta	15WR (7A+2SA)	5WR (A) 0 2SL (A)	6WR (4A+2SA)	4 WR (A) 0 1SL (A)	3WR (2A+1SA) 1SL (A)
Western border	8WR (A) 4SL (A)	8WR (A)	5WR (3A+2SA) 0 2SL (A)	1WR (A) 0	2WR (A) 0
Simal Phanta	7 SL (5A+2SA) 6WR (5A+1SA)	8SL (6A+2SA) 4WR (2A+2SA)	4SL(A) 2WR (A)	2SL (A) 2WR (A)	2SL (A) 1WR (A)
Majhgaun	0	1WR (A)	0	0	1WR (A)
Mahakali river	5WR (3A+2SA)	2WR (A)	3WR (A)	1WR (A)	0
Total Slender-billed Vulture	11SL (9A+2SA)	10SL (8A+2SA)	6SL (A)	3SL (A)	3SL (A)
Total White-rumped Vulture	34WR (29A+5SA)	20WR (18A+2SA)	16WR (12A+4SA)	8WR (A)	7WR (6A+1SA)

Note:-WR- White-rumped Vulture, SL- Slender-billed Vulture, A- Adult, SA- Sub-adult.

References

- Ali, S. and S.D. Ripley, 1987. *Handbook of the birds of India and Pakistan*. Compact edition.
- Baral, H.S., J.B. Giri and M.Z. Virani 2004. On the decline of Oriental White-backed Vultures *Gyps bengalensis* in lowland Nepal. In *Raptors Worldwide. Proceedings of the VI World Conference on Birds of Prey and Owls*, Budapest, Hungary 18-23 May 2003 [Eds]. R. D. CHANCELLOR & B.-U.MEYBURG.
- Baral, H. S. 1991. Birds recorded at Gokarna. Unpublished.
- Baral, H. S. 1993b. Birds recorded at Lainchour. Unpublished.
- disease factor and recommendations for emergency efforts.
- Thiollay, J. M. 2000. Vultures in India. News letter of the World working Group on Birds of Prey.
- Fleming, R.L.Sr., Fleming, R.L.Jr. and Bangdel, L.S., 1984. *Birds of Nepal*. Third edition.
- G.C. Som & Giri, J.B. 2003. Study of Vultures in Far-western lowland Nepal, Bird Conservation Nepal and Oriental Bird Club, U.K. A report submitted to OBC, U.K.
- Giri & G.C. Som, 2002. Study of Vultures in Western lowland Nepal, Bird Conservation Nepal and Oriental Bird Club, U.K. A report submitted to OBC, U.K.
- Giri, J.B. and Choudhary, B. (2001) Pilot survey of Vultures in Bardia. A report to The Peregrine Fund, USA. Bird Conservation Nepal, Himalayan Natural and The Peregrine Fund.
- Giri, J.B., Virani, M., Watson, R. and Baral, H.S. (2001) Study of Vultures in lowland Nepal. Final Report. Submitted to The Peregrine Fund, USA. Bird Conservation Nepal, Himalayan Nature and The Peregrine Fund.
- India. *Newsletter of the World Working Group on Birds of Prey*.
- Inskipp, C. and Inskipp, T. (2001) A re-visit to Nepal's lowland protected areas. *Danphe* 10(1/2): 4-7, March-June 2001.
- Inskipp, C. and Inskipp, T. 2000 *Globally threaned birds of Nepal*, Danphe, Vol. 9(4) 3-6.
- Inskipp, C. and Inskipp, T., 1991. A guide to the birds of Nepal. Second edition. Christopher Helm, London.
- Inskipp, C. and Inskipp, T., 1991. A guide to the birds of Nepal. Second edition. Christopher Helm, London. Nature Himalayas, Kathmandu. Oxford University Press, Delhi. Passerines. Academic Press.
- Rahmani, A. R. 1999. Vulture alert! <http://www.allindia.com/vulalert.htm>
- Risebrough, R.W. 1999. Population crash of the *Gyps* Vultures in India: evidence for a
- Satheesan, S. M. 1999b. The decline of vultures in India. *Vulture News* 40:35-36.
- Satheesan, S.M. 1999a. The vanishing skylords. *WWF-India Network Newsletter*, January 1999.
- Wells, D.R. 1999. *The Birds of the Thai-Malay Peninsula. Covering Burma and Thailand south of the eleventh parallel, Peninsula Malaysia and Singapore. Volume One-Non-Passerines*. Academic Press.