

3. LIVESTOCK-DHOLE CONFLICT IN WESTERN BHUTAN¹A.J.T. JOHNSINGH², DEKI YONTEN³ AND SANGAY WANGCHUCK^{3,4}¹Accepted March 07, 2006²WWF-India, 3076/5, 4th Cross, Gokulam Park, Mysore 570 002, India. Email: ajt.johnsingh@gmail.com³Nature Conservation Division, Ministry of Agriculture, Royal Government of Bhutan, Thimphu.⁴Email: jamkhar@yahoo.co.in

Dhole (*Cuon alpinus*), a pack-hunting canid, is a coursing predator of the Asian jungles. It preys on wild ungulates such as Sambar (*Cervus unicolor*), Chital (*Axis axis*), Barking Deer (*Muntiacus muntjak*) and Wild Pig (*Sus scrofa*) and also on livestock when available. Bhutan has 72% forest cover (Tshering and Wangchuk 2003), and wild ungulates such as Sambar, Wild Pig and Barking Deer, which provide a suitable habitat for Dholes. The Indian subcontinent has four subspecies of Dholes (Johnsingh 1985) and of these, possibly two occur in Bhutan – *C.a. primaevus* in the lower and middle Himalayan regions, and *C.a. laniger* in the higher regions. The propensity of Dholes to attack livestock, however, had resulted in the people of Bhutan nearly eradicating Dholes in the 1970s by poisoning their kills. Subsequently, for nearly 30 years, Dholes as a problem species were forgotten. Absence of dholes led to another problem, wild pigs, which caused enormous damage to agricultural crops (Wangchuk 2004). Dholes reappeared in many parts of Bhutan in the late 1990s, and started causing considerable damage to livestock, as the villagers in many parts of Bhutan leave their livestock to graze in the forest, sometimes even for weeks at a time.

In order to assess Dhole depredation on livestock, a three-week study was carried out in April-May 2004 in Toeb Geog (block), Thimphu Dzongkhag (district) in western Bhutan, as part of a training program to 15 wildlife personnel from different parts of Bhutan. A questionnaire to gather information on Dhole depredation was developed. The participants were divided into five teams and were guided to collect data on Dhole depredation from six villages on the left bank of Toeb Rong Chhu (a stream in a deep gorge) and four on the right bank. The right bank villages were much more developed due to the Thimphu-Wangdue Highway. In each village, three persons representing different households/families (n=30) were interviewed based on the questionnaire (Johnsingh *et al.* 2004).

The key findings are as follows. Average family size on the right bank, which possibly has more employment opportunities due to the highway, was 8.42, while on the left bank it was 5.78. Average number of livestock held by a family on the right bank was 6.67 and left bank 6.44. Twenty-two respondents, who had lost their livestock to Dholes, said

that all attacks and kills were made while the cattle were left in the jungle. Interestingly, Emou village, which is on the left bank, which in 2004 had 16 cattle and 4 pigs, had not suffered a single livestock loss so far, as the animals were taken to jungle for feeding during the day and stall-fed at night. All the 30 respondents said that livestock penned near homes were never attacked by Dholes. As seen in other parts of Dhole range, there were no attacks on people, and the number of Dholes in the packs averaged around eight.

Livestock numbers on the left bank in 2004 were 80 cows, 12 oxen, 9 calves and 17 pigs. Livestock killed from 1999 to 2003 was 6 cows, 10 oxen, and 3 calves. On the right bank, the livestock numbers in 2004 were 48 cows, 24 oxen and 9 calves. Livestock killed during 1999-2003 was 15 cows, 24 oxen, and 8 calves. More oxen and fewer cows are killed in proportion to availability, and this indicates that the cows are protected well while oxen do not get the needed protection. Annual loss per family due to Dhole depredation on the left bank was US \$ 23.4 (Nu. 1,055) and the right bank US \$ 85 (Nu. 3,833). This loss is substantial, considering that the annual income of villagers in Bhutan is between US \$ 400 and 600 (Nu. 18,000 to 27,000).

Based on the answers of 30 respondents, it was concluded that next to Dhole, Leopard (*Panthera pardus*) was the major predator on livestock (11 reported cases of attacks) followed by Tiger (*P. tigris*, 4 cases) and Black Bear (*Ursus thibetanus*, 1 case). One interesting observation during the survey was that most villagers prefer Dholes to Wild Pigs, as Dholes prey on Wild Pigs. Protecting fields from Wild Pigs is much more difficult than protecting livestock from Dholes. We suggest that with suitable conservation awareness programmes the Emou model should be followed for other villages. Compensation for Dhole livestock kills, if given, could become very expensive for the Government of Bhutan.

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MISCELLANEOUS NOTES

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