

## The status of Demoiselle crane (*Grus virgo*) and Common crane (*Grus grus*) in District Lakki Marwat and Bannu, khyber Pakhtunkhwa province Pakistan

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**Abstract:** 【Objective】 This research aimed to evaluate the current situation of demoiselle cranes and common cranes in the districts of Bannu and Lakki Marwat, located in the province of Khyber Pakhtunkhwa, Pakistan. 【Method】 The study employed a comprehensive approach, involving field visits, interviews with crane hunters and breeders, and the collection of relevant data through questionnaires. Furthermore, blood and stool samples were obtained from deceased cranes for parasitic analysis. 【Result】 During the Fall 2021 and Spring 2022 hunting seasons, a total of 31 cranes were captured, including 24 demoiselle cranes and 7 common cranes in Lakki Marwat, and 42 cranes (27 demoiselle cranes and 15 common cranes) in Bannu. Subsequently, in the Fall 2022 and Spring 2023 seasons, 52 cranes were captured, comprising 39 demoiselle cranes and 13 common cranes in Lakki Marwat, and 66 cranes (45 demoiselle cranes and 21 common cranes) in Bannu. The study also documented the number of cranes killed during these hunting seasons, with 17 cranes killed in the 2021-2022 season and 25 in the 2022-2023 seasons in Lakki Marwat. In Bannu, the corresponding numbers were 20 and 29 for the respective years. Throughout the survey, cranes were also studied in captivity. Breeders in both districts successfully increased egg numbers through multiple clutching, resulting in 6-8 eggs per clutch. In Lakki Marwat, the hatching success rate was 51% for demoiselle crane eggs and 50.8% for common crane eggs. The chick survival rate for demoiselle and common cranes in this district was 62.3% and 54.2%, respectively. In Bannu, the hatching success rate was 54.8% for demoiselle crane eggs and 56.8% for common crane eggs, with a chick survival rate of 54.8% for demoiselle cranes and 63% for common cranes. Notably, both adult and chick mortality rates were higher among demoiselle cranes compared to common cranes. 【Conclusion】 The primary causes of mortality observed in captive cranes were climate-related factors, predation, stomach blockage, influenza, head tumors, and coccidiosis caused by *E. gruis* and *E. reichenowi* in both districts. Additionally, leg breaking during growth, climate conditions, predation, mud trapping, unknown diseases, and endoparasites (*E. gruis* and *E. reichenowi*) were identified as factors contributing to chick mortality in both crane species. The decline in the number of migratory cranes in the southern districts of Bannu and Lakki Marwat was attributed to excessive hunting pressure over the years.

**Key words:** demoiselle crane; common crane; captivity; Bannu; Lakki marwat.