

Saker Falcon (*Falco cherrug milvipes* Jerdon) mortality in Central Mongolia and population threats

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Abstract

This study is important because Mongolia is the main reserve country for breeding saker falcons in the world, where they play a key role in the steppe ecosystem as a predator of a rodent pest species. This is the first study to address factors influencing egg, chick and adult saker mortality in Central Mongolia. A total of 338 eggs, fresh remains and carcasses from 194 active nests in the study areas were collected and examined. Egg, chick and adult mortality in the study areas did not differ significantly between 1998 and 2004. Deserted clutches (35.1%) and infertile eggs (30.4%) were found to be the two main factors causing reduced hatching success. Factors causing chick mortality were not significantly different each year. In 1998 - 2004, natural causes accounted for 61.1% of total mortality of Central Mongolian sakers. Human or anthropogenic factors explained 26.4% of all saker deaths. The main predator of chicks was the Eagle Owl (*Bubo bubo*). Chick mortality caused by cleaning raptor nests from poles and HPEL pylons was 21.3%. No significant differences were found between factors influencing adult saker mortality. The highest percentage of total adult saker mortality was caused by electrocution (54%). Poisoning also reduced saker numbers. The number of exported sakers has dramatically increased over the last four years. Saker numbers in Mongolia are relatively high and so trappers are increasingly concentrating on this reserve. A harsh winter in 2002 caused decreased Brandt's vole (*Microtus brandti*) numbers in two study areas. The number of saker breeding pairs decreased in these study areas in 2003. The results will provide an important data source for planning saker falcon conservation strategies and activities in Mongolia.

Key words: Saker falcon, mortality, *Falco cherrug milvipes*, Mongolia

Introduction

Mongolia has four natural habitat zones, taiga, forest, steppe and Gobi desert (Batjargal *et al.*, 1995). All study areas were located in the Middle Khalkh Arid Steppe region, which contain 403 species of grasses and 63 species of bushes, out of a total of 509 species of vascular plants. Mongolia is the main reserve country for breeding Sakers in the world. Saker falcon range within the country spreads from the Mongolian Altai to the western foothills of the Great Khyangan, excluding the forested zone of Khuvsgul lake, Khentii and some forested areas of the northern Khangai (Fig.1). The Saker occurs as a common bird in our study areas. Only adult birds winter in Central Mongolia. Clutch size of the Saker falcon in Mongolia varies significantly across years (Potapov *et al.*, 2002).

The distribution, number, status, diet, breeding biology, home range and migration in Mongolia were investigated during several field expeditions and have been published by Przewalskii (1876); Bianki (1915); Tugarinov (1929 & 1932); Kozlova (1930); Sushkin (1938); Dementiev & Gladkov (1951); Tarasov (1960); Dementiev (1963); Dementiev & Shagdarsuren (1964); Kozlova (1975); Piechocki (1981); Shagdarsuren (1983); Baumgart (1990, 1991); Bold *et al.* (1996); Ellis *et al.* (1996); Ellis *et al.* (1997); Sumiya & Batsaikhan (1999); Potapov *et al.* (1999, 2001a,b, 2002); Badam (2001); Sumiya *et al.* (2001); Shagdarsuren *et al.* (2001); Gombobaatar *et al.* (1999, 2000a,b, 2001, 2003). There are only a few publications on Saker mortality in Mongolia (Bold *et al.* (1998); Ellis & Lish (1999); Potapov *et al.* (1999, 2001, 2002); Shijirmaa *et al.*, 2000; Gombobaatar *et al.*, 1999,