

# Population and Conservation Status of Griffon Vultures in the former Soviet Union

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## ABSTRACT

Recent declines in vulture populations on the Indian sub-continent have caused great concern among researchers and conservationists. However, there is little information on the status of vultures in adjacent regions of Asia. Such information is particularly pertinent because rapid social change has altered the environmental and social systems on which these birds depend.

We surveyed vulture populations over several years in central Asia and the Caucasus to evaluate how they are responding to the multiple threats they presently face. Here we document three important trends in populations of these birds. First, we show evidence for long-term declines of vultures in central Asia and the Caucasus. Second, we have not observed the massive mortality seen in some *Gyps* vultures in India. Third, we document evidence that Eurasian and Himalayan Griffon Vultures are reproducing in these areas. There is no sign of severe decline in vulture populations in the former Soviet Union, indicating that whatever agent kills birds in India is either not fatal to species that generally breed further north, or has not yet impacted these populations. Nevertheless, we also discuss possible routes of spread of this mortality agent through Asia and the Middle East to identify areas particularly suitable for monitoring potential disease spread.

## INTRODUCTION

Vulture populations worldwide are threatened, and many have shown dramatic distributional changes, some to the point of near-extinction. Causative agents for these trends include pesticide use, lead poisoning, habitat loss, changes in livestock populations, and direct persecution by humans. Recent

mortality of Indian White-backed *Gyps bengalensis* and Long- and Slender-billed Vultures *G. indicus* and *G. tenuirostris* in India has caused population declines so severe that they may result in the extinction of two or more species (Risebrough & Virani 2000; Prakash *et al.* 2002; Pain *et al.* 2003). While these declines are massive and sudden, they have also been preceded by slower long-term declines that have occurred in other parts of these species' previous range (Virani *et al.* 2001; Pain *et al.* 2003).

There is little knowledge of the conservation status of vultures and vulture populations in the former Soviet Union, particularly in central Asia. Calls for regional monitoring programmes have become more urgent in the light of evidence that the population declines in nearby India are also occurring in nearby regions (Virani *et al.* 2001). Since *Gyps* vultures from central Asia winter in India, these birds are almost certainly exposed to threats that impact the Indian populations. However, vulture demographics in central Asia and the Caucasus, the hotspots of vulture density in the former Soviet Union, are different than those in India. Most importantly, vultures in these regions occur at relatively low densities, especially when compared to populations in India and Pakistan. Their colonies are smaller, they have been less well studied in recent years and, as a consequence, changes in their populations may be more difficult to detect. Finally, the recent massive economic and political changes in these areas have resulted in dramatic changes in the environment. Most important of these for vultures may be the changes in the numbers of livestock (sheep and cows) and, in some places, wild ungulates (saiga).

Only some aspects of the biology of central Asian and Caucasian vultures have been studied by Russian-speaking biologists. However, because most of the literature on these regions is in Russian, these populations are even less well known outside the former Soviet Union. We surveyed Georgia and south-eastern Kazakhstan to assess the current distribution, population and conservation status of Eurasian Griffon Vultures *Gyps fulvus* and Himalayan Griffon Vultures *G. himalayensis* (the latter does not occur in the Caucasus). The goals of this research were first, to document the locations of vulture nests and colonies for use in future studies; second, to compare historical records of colonies with their current size and status; third, to look for signs of population decline or malaise that could precede death; and fourth, to establish long-term monitoring programmes for these species. In addition to field surveys, we also reviewed Russian- and English-language literature to try to evaluate past and present status of these species throughout the former Soviet Union.

## METHODS

Our field surveys were comprised of three main components. First, we visited known colonies and nests; second, we searched for new colonies and nests in likely areas identified from topographic maps and local information; and third, in Kazakhstan we conducted an annual transect survey in an area well known to support large numbers of foraging vultures. At all colonies and nests, new and old, 1-3 observers stayed for 1-3 days and counted (a) the maximum number of birds observed, and (b) the number of active nests and the number of chicks, and we used that information as a rough index of population

size at each site. Our transect in Kazakhstan was established in the upper valley of the Assy river, a region which has historically supported high numbers of livestock in summertime. In August 2000-2002, two observers surveyed the length of the valley (30km), stopping at 5km intervals to locate, count, and identify vultures observed in 15 minute periods.

For our literature survey, we evaluated historical and current records of vultures throughout the former Soviet Union. We looked for information in both Russian- and English-language sources. In many cases records were incomplete, but when possible we attempted to evaluate whether populations were increasing or decreasing.

## RESULTS

### Kazakhstan

Before our studies were conducted, only two vulture colonies had been well described in Kazakhstan, one on the Usek River (Eurasian Griffon) and another on the Chilik River (Himalayan Griffon). Our surveys indicate that populations at both of these colonies have declined by at least 50% since they were first surveyed, 10-20 years ago. We found at least six additional vulture colonies and we observed evidence of breeding by vultures at five of these. Colony size ranged from 2-3 nests to 7-8 nests. We observed several interesting patterns at these colonies. First, colonies were often not well defined and we frequently observed vulture nests separated by long distances (up to 5km; the term colony may therefore not be particularly appropriate for these loose aggregations). Second, on several occasions we observed the two species of Griffon Vulture, Eurasian and Himalayan, breeding at the same colony. Finally, we did not observe any evidence of sickness in the vultures we monitored.

### Georgia

Himalayan Griffon Vultures do not breed in Georgia. Eurasian Griffon Vultures breed in three regions of the country, two in the north, and one in the south. At present there are approximately 70-75 breeding pairs, although that number represents a 10-15% population decline in the past decade. Breeding success (proportion of nesting attempts that are successful) in the northern part of the country is close to 100%, whereas breeding success in the southern part of the country is less than 50%.

### Literature survey

The former Soviet Union supports large numbers of Griffon Vultures. However, although there are extensive Russian-language publications on vulture ecology, there is little information on their demography and distribution. What information does exist suggests that the highest densities of vultures have been recorded in the Caucasus and in central Asia (Table 1). Of the 15 countries in the CIS (Commonwealth of Independent States), Russia and Uzbekistan have the greatest number of Griffon Vultures. There are no records of vultures breeding from any of the Baltic States (Estonia, Latvia, Lithuania) nor from Belarus. Moldova once supported breeding vultures, but they are no longer extant. The Ukraine supports a small but declining population in the Carpathians.

**Table 1. Status of Griffon Vultures in the former Soviet Union. Both Himalayan and Eurasian Griffon Vultures breed in central Asia, but the two species are rarely distinguished in the literature**

Country	Region	Population Size & Trend	Source
Armenia	Caucasus	<30 pairs	Adamian & Klem (1999), Abuladze (1997)
Azerbaijan	Caucasus	50-80 pairs	Abuladze (1997)
Belarus	Not breeding	----	----
Estonia	Not breeding	----	----
Georgia	Caucasus	~70-75 pr., declining	Gavashelishvili & McGrady (2003), Abuladze & Shergalin (1998)
Kazakhstan	Tien-Shan, Karatau, Kyzyltau	~10-15 col., declining	Zhatkanbaev (2003), Katzner et al. (2003)
Kyrgyzstan	Throughout	No new data	----
Latvia	Not breeding	----	----
Lithuania	Not breeding	----	----
Moldova	Extinct, 50-75 yrs. ago	----	----
Russia	Caucasus, Altai	~500 birds, declining	Moselkin (2003), Tilba (2000), Tilba & Mnatsakanov (2003), Galushin (2003)
Tajikistan	Present	No new data	----
Turkmenistan	Present	No new data	----
Ukraine	Crimea	~35 birds, declining	Appak (2000)
Uzbekistan	Present	400-600 birds, no new data	Mitropolski et al. (1987)

Vultures occur in all four countries that the Caucasus span - Armenia, Azerbaijan, Georgia and Russia. However, the numbers of birds throughout this region is apparently declining or has declined. Of these countries, vultures in Georgia have probably been the best studied in recent times, although research is developing in other countries, particularly in Armenia and Russia. Vultures also breed in the Russian and Kazakhstan Altai, but details on these populations are also not well known. In central Asia, vultures are present in all countries, but they have been poorly studied. There is almost no information on vultures from Kyrgyzstan, Turkmenistan and Tajikistan. Older records do exist for Kazakhstan and for Uzbekistan. In recent years, vulture surveys have only been completed in Kazakhstan (Sklyarenko 2002). New reports from central Kazakhstan also suggest that this region may be more important for vultures than was previously recognized, although it is not clear if the many birds observed there are actually breeders.

## DISCUSSION

General trends for vultures in the former Soviet Union are not positive. Recent surveys in the Caucasus and in central Asia suggest that vulture numbers are declining in both of these regions. Furthermore, literature surveys suggest that these same patterns may be occurring in countries where we were not able to collect field data. These general patterns of decline are similar to those longer-

term changes that have been observed in south-east Asian vultures and in vulture populations worldwide (Pain *et al.* 2003). As has been previously documented, central Asian and Altai vultures are migrants to south Asia, where they may be exposed to similar threats as birds that reside there (Pain *et al.* 2003).

Local environmental changes may play a highly significant role in population declines of vultures in the former Soviet Union. The most important of these is likely to be the massive declines in the number of livestock herded throughout this region. In Georgia, the only region where livestock declines have been documented, numbers of domestic sheep have declined by approximately 70% in the past decade (Gavashelishvili & McGrady 2002). In Kazakhstan informal surveys of livestock herders and naturalists suggest a similar trend (Katzner & Sklyarenko, unpublished data). Declines of this magnitude have almost certainly occurred throughout other grazing areas in the former Soviet Union. Such fluctuations are almost certain to have impacts on populations of all scavengers, not just vultures. However, this trend of declining livestock is beginning to reverse in Kazakhstan, and discussions with local shepherds suggest that in the past 2-3 years the number of sheep is increasing again.

In the light of these findings, it is critically important that monitoring be continued in these areas, to ensure that future changes in vulture populations are documented and their causes understood. Furthermore, it is important that monitoring programmes be standardized across the region so that results from different areas can be compared

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