

The Impact of Falconry on the Conservation of Large Falcon Populations

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Falconry is the hunting of wild animals by means of a trained bird of prey. During Safavid times, this art, called *bazdari*, was a fairly common activity, especially among nobles. In addition to being a hobby of the nobility, falconry was also used as a tool for catching food for the table. For example, the Venetian merchant Joseph Barbaro, a visitor to the court in Tabriz in 1474, reports that the *Aq Qoyunlu* army took with them 250 birds of prey, 100 cheetahs, 4,000 greyhounds and other dogs on a hunt (Allsen 2006). The German naturalist Gustav Radde, who visited the South Caucasus in the 19th century, remarked that falconry was then still widespread in the area that is now Azerbaijan (Radde 1884).

Various accipitriformes (eagles, hawks) and large falcons are mainly used in falconry. Three species of large falcons have been recorded in Azerbaijan: the Peregrine Falcon (*Falco peregrinus*), the Saker Falcon (*Falco cherrug*) and the Lanner Falcon (*Falco biarmicus*). The Saker Falcon is the largest falcon species found in Azerbaijan, but at the same time also the rarest. During migration it can regularly be seen throughout the country and during wintering (Patrikiev 2004). Between 15 and 30 individuals are recorded annually in Azerbaijan (ETSN 2023). The most suitable Saker Falcons (often simply called "Sakers") for falconry are considered wild-take adult birds (Allsen 2006). This is one of the main reasons for a decline in their number. Thus, their global population size is estimated to be between 12200 to 29800 mature individuals, and they are categorized as endangered (BirdLife International 2024).

A popular theory among some scientists was that Sakers don't breed in the Caucasus region because they are replaced in summer by Lanner Falcons (Деметьев & Гладков 1951, 117). However, given that Sakers breed in neighboring Türkiye, Iran, Armenia and sometimes Georgia, and that they have been observed in Azerbaijan during the breeding season, it is likely that they breed in Azerbaijan as well. This hypothesis was first confirmed in 2022 by a team of foreign bird watchers. The observers note that the female bird appeared to have been used for falconry, indicated by the straps on both its legs, and had subsequently escaped into the wild. They added that the bird's behavior did not differ from any other raptor (Vincent Legrand personal communication). Because birds of prey, also known as raptors, are trained by their owners for use in hunting, they can typically adapt to nature, unlike other exotic birds (Rivas-Salvador et al. 2021). There are, however, also reports showing the opposite. Between 1995 – 2013, falconers from the UAE initiated releases of 1545 falcons (726 Sakers and 819 Peregrine Falcons), which were used in falconry and caught for other purposes in the United Arab Emirates, into the wild in Kazakhstan, Kyrgyzstan, Pakistan and Iran. Based on the information on the 10% of the birds that were tracked via GPS transmitters, none of them were able to rejoin wild populations and produce offspring in the wild (Kovács et al.). It is even assumed that 12 of these birds were re-trapped by humans (Muller 2013).

Currently, there is no special permit regulating falconry in Azerbaijan. There is a small percentage of people who engage in this hobby illegally. Sakers are considered extremely valuable among falconers, and the removal of chicks from nests for falconry is one of the factors making it difficult to conserve the species. Given that they are also illegally trapped throughout Azerbaijan for sale to Arabian falconers (Kovács et al.), it is important to keep falconers and the birds they keep under control.

Uncontrolled wild-take falconry poses serious problems for the

conservation of large falcons. On the other hand, Sielicki argues that falconry can be a useful tool for species conservation, citing examples from several projects initiated by individuals and organizations involved in falconry (Sielicki 2016). He notes that in 2014 almost 5000 artificial Saker nests were built in Mongolia, actively producing more than 3,000 chicks. In exchange for that up to 300 licenses for trapping wild Sakers had been issued since 2014 (Sielicki 2016). The published figures show that from 1997- 2010, Mongolia exported a total of 3141 Saker Falcons (10-26% of the global population) to seven countries, especially the Gulf states. The sale of Saker Falcons in 2010 alone generated an income of about US\$3 million for Mongolia (Dixon et al. 2011). This indicates that significant numbers of wild falcons were trapped in exchange for the erection of artificial nests to breed the species.

The biggest problem with the introduction of exotic raptors into the wild from falconry is that they may disrupt the gene pool of native falcons, resulting in hybrids (a mixture of two or more species) (Rivas-Salvador et al. 2021). From 1975-2020, various hybrids accounted for 26,8% of 188.149 traded raptors, as a result of legal wildlife trade transactions, especially in falconry (Connor et al. 2023). This indicates a high proportion of hybrids within falconry species. The increasing number of falcons escaped from falconry across the Caucasus raises concerns about the genetic integrity of the reproductive populations of Saker Falcons and other large falcons, creating a need for urgent conservation measures. Given the origins of female sakers of breeding pairs recorded in Azerbaijan from falconry activity, there is a possibility that it also holds unknown hybrid genes and will eventually pass them to the wild.

Azerbaijan in recent years has implemented projects under the slogan of "Increasing Genetic Diversity," which is intended to introduce raptors into the wild from falconry (AZERTAC 2023). Given the widespread use of various hybrids, especially

falcons, at festivals by falconers, there is a risk that some of the raptors released into the wild will contribute to hybridization and have a negative impact on the local gene pool. The first proposal for the releasing of falcons back into the wild in Azerbaijan is based on the Memorandum of Understanding signed between Azerbaijan and Qatar in 2017 on cooperation in the field of wildlife conservation and protection of the endangered natural environment. The parties to this project are the Ministry of Ecology and Natural Resources and the Qatari Al Gannas Association (Qatar News Agency 2023). As part of these campaigns, about 250 falcons were released back into the Azerbaijani wild between 2020 and 2023 (Abdullayeva 2022, Seymurqızı 2024).

What needs to be done though? Release campaigns of this type should be discontinued until proper genetic testing is conducted to confirm that the birds released in nature are not hybrids. Even if released individuals are not hybrids, care should be taken to ensure that the measures to preserve the gene pool in Azerbaijan of breeding Caucasian-Mediterranean Peregrine Falcons (*Falco peregrinus brookei* in Latin) do not coincide with the reproductive cycle. Because non-native subspecies of falcons are known to cause “genetic pollution” among native wild falcon populations and to increase hybridization even within subspecies (Lindberg et al. 2015). Continuous monitoring and conservation initiatives are crucial to preserve the habitat and population of endangered falcons in Azerbaijan. In particular, given the illegal trapping of large falcons for use in falconry, the protection of nesting places for large falcons breeding in Azerbaijan is of great importance. In addition, the introduction of falcon species to the wild from falconry should be prevented in order to prevent “genetic pollution” among native large falcon populations.

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