

Government-sponsored Falconry Practices, Rodenticides, and Land Development Jeopardize Golden Eagles (*Aquila chrysaetos*) in Western China

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GOVERNMENT-SPONSORED FALCONRY PRACTICES, RODENTICIDES, AND LAND DEVELOPMENT JEOPARDIZE
GOLDEN EAGLES (*AQUILA CHRYSAETOS*) IN WESTERN CHINA

KEY WORDS: *Golden Eagle; Aquila chrysaetos; China; conflict; falconry; Xinjiang.*

Currently, falconry is making a resurgence in some areas of western China, although this activity has been prohibited or discouraged for the last 60 yr. Under the influence

of neighboring countries such as Mongolia, Kazakhstan, and Kyrgyzstan, local Chinese governments have begun encouraging local people to tame eagles and other raptors for

Table 1. Raptor species used in falconry by different people-groups in China.

NATIONS	REGION	RAPTOR SPECIES USED						
		GOLDEN EAGLE	GOSHAWK	SPARROW-HAWK	NORTHERN HARRIER ¹	BARBARY FALCON ¹	SAKER FALCON	OTHER ²
Uygur	Western China	+	+		?		?	+
Kirghiz	Western China	+	+			+	+	
Kazakhs	Northern China	+						+
Manchu	Eastern China		+				?	
Hui, Baoan, etc.	Northern China		+	+				
Naxi, Yi, etc.	Southern China		+	+				+
Han (Chinese)	Northern China		+	+			+	+
Tajik, etc.	Western China		+					+

¹ Scientific names: Northern Harrier (*Circus cyaneus*), Barbary Falcon (*Falco pelegrinoides*).

² Other species utilized include Steppe Eagle (*Aquila nipalensis*), Peregrine Falcon (*Falco peregrinus*), sea eagles, kestrels, buzzards, owls, and vultures.

falconry festivals and to construct falconry cultural centers to develop tourism. The Kazakh and Kyrgyz ethnic groups prefer to catch larger birds such as Golden Eagles (*Aquila chrysaetos*), whereas the Uygur, Hui, Yi, and Manchu people catch and tame only smaller raptors such as Goshawks (*Accipiter gentilis*) and Eurasian Sparrowhawks (*Accipiter nisus*). Saker Falcons (*Falco cherrug*) are rarely used for falconry in China (Ma 1999), in contrast to Saudi Arabia where they are commonly used (Ma 2004).

Chinese falconry involves large numbers of various raptors (Table 1) and is in direct conflict with a Chinese law, the National Animal Protection Act (1988), which protects all wild birds of prey. The Golden Eagle is listed as a first-class protected species, so the capture, adoption, transportation, and trade in eagles (and other raptors) are all illegal activities throughout China. Nevertheless, in the poor western regions of China, local governments consider falconry to be a "green" activity, although such capture and taming of eagles and other raptors is antithetical to conservation. Recently, modern threats including falconry, mining development, poaching, and the widespread use of rodenticides, have become a significant threat to populations of Golden Eagles and some other raptors in China.

Local falconry traditions can be traced back thousands of years in ancient rock paintings, and today Kyrgyz tribesmen at festivals in the streets of Akqi County (Fig. 1), Xinjiang, in western China, are reminiscent of a time over 700 yr ago, when Genghis Khan led a military expedition to Europe (Xu 1995, Gao 2002). Mongol forces then were

accompanied by numerous hunters and falconers who supplied fresh food for such expeditions.

Traditional methods of capturing and taming birds probably had little effect on raptor populations (Su 1988). Today, too many eagles are removed for wild populations to sustain the losses. It is possible that eagles could be supplied by captive breeding, but such breeding is expensive and requires special knowledge. In addition, after capture and training, the birds (mostly captured as nestlings) become tame and are not suitable for release back into the wild and thus will not contribute to wild breeding populations.

Local governments in China have encouraged falconry since 2007, and many families receive substantial governmental subsidies, i.e., 300–600 Yuan (\$50–100US) per month for taming birds. Because of these subsidies, the enthusiasm of local people for catching and training eagles has increased greatly. Thus, traditional falconry has been subverted into an industry in China.

During the last 10 yr our team, including international collaborators, has surveyed the distribution and ecology of falcons, eagles, vultures, and buzzards in Xinjiang and Tibet (Potapov and Ma 2004, Wu et al. 2008). We surveyed routes in the Karamay Mountains (or Kalamaili Mountains) from 2004 to 2011, and recorded the locations of all nests found using a GPS. We visited these nests every year to record breeding success (Ma et al. 2010). In addition, during the breeding season, we studied various nests using the continuous observation method, and recorded the behavior, prey types delivered, and reproductive out-



Figure 1. Falconry festival for the tourists in Akqi County, March 2010. (Photo by Ming Ma.)

come. Second, we used questionnaires to document the extent and history of falconry and poaching. Third, at each Eagle Cultural Festival from 2007–11 in Akqi County (40°56'N, 78°29'E), we observed and counted raptors on display (Fig. 1). We also obtained additional information from the local newspapers and government websites.

In Akqi County, the number of falconers increased each year from 2007–11 (Fig. 2), becoming a serious threat to the breeding population of wild eagles. Many eagle nests in the Tien-Shan Mountains have been visited by falconers and nestlings removed, and some young birds have been taken illegally from neighboring countries, e.g., Kazakhstan, Kirghizstan, and Tadzhikistan.

The intensification of economic development in western China is also a serious problem (Mei et al. 2008). During our field research, we found many Golden Eagle nesting areas in the mountains unoccupied. Breeding density has decreased, probably as a result of disturbance caused by mining for coal, gold, and gems, as well as oil development. For example, in the Karamay Mountain Ungulate Nature Reserve (44°50'N, 89°00'E), large mining companies have converted substantial

areas of the reserve into strip mines for coal. This was possible because the local government changed the reserve boundary lines at least three times between 2006 and 2010. The Karamay Nature Reserve already contains wire fences, high-voltage power lines, asphalt roads, and a railway, and the protected areas have been reduced to fit the arbitrary interests of mining companies. Other species in the region are also threatened. The goitered gazelle (*Gazella subgutturosa*) population, which was the largest in China, was reduced to several small fragments and will likely disappear. The last Chinese population of Mongolian wild ass (*Equus hemionus*) is nearly extirpated; the wild horses (*Equus przewalskii*) are often killed by trucks on the highways.

Another threat to raptors has come from policies to eradicate rodents. In many provinces and counties of western China, local governments have initiated intensive programs for the killing of all species of rodents in the steppes and deserts. The rodents have errantly been blamed for pasture degradation, and rodent elimination has drastically reduced the raptors' prey base, with concomitant negative effects on raptor populations. The occupancy rate for raptor nests has fallen from 9% to 3% ($n = 340$ raptor nests), and the breeding density of Golden Eagles has declined from 1.48–1.67 breeding pairs per 1000 km² in 2004–2005 to 0.37–0.56 pairs per 1000 km² in 2010–11 (Fig. 3). In 2012, we found no eggs or nestlings in Golden Eagle nesting areas in the Karamay region.

Not only has the prey base of Golden Eagles and other raptors in this region largely disappeared, but also much of the natural habitat has been destroyed and nesting areas in mountainous regions have been largely deserted (Ma and Chen 2007, Ma 2011). Moreover, in some nature reserves, the national wildlife protection laws have been disregarded or supplanted to satisfy local entrepreneurs. In time, if rodent poisoning were halted, the raptor populations could recover, but there is currently little incentive to promote raptor conservation, and significant economic incentive to continue exploitation of raptors to promote tourism.

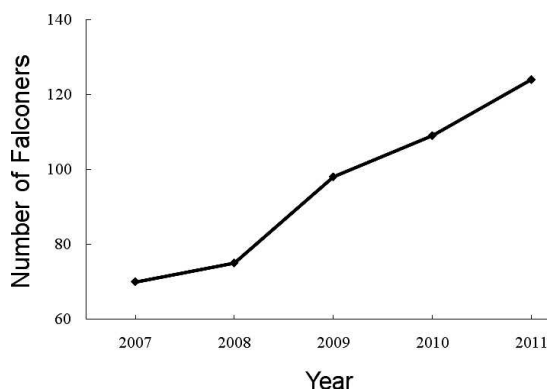


Figure 2. Number of falconers in Akqi County, western China, 2007–11.

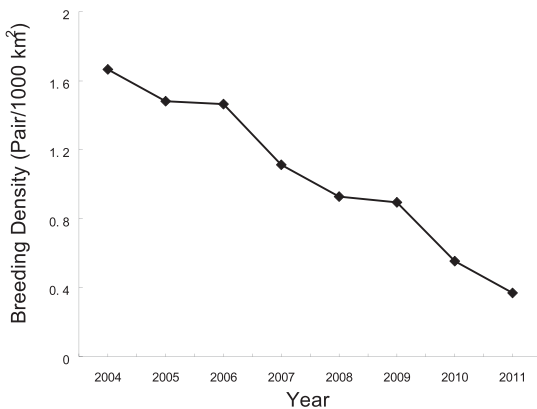


Figure 3. Density of breeding pairs (nests) of Golden Eagles in Karamay Mountain Ungulate Nature Reserve, western China, 2004–11.

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