Proceedings of the II International Conference on the Saker Falcon and Houbara Bustard, Mongolia, 1-4 July 2000.
Potapov et al. 2001: 132-137.

Nest site selection in Mongolian Sakers.

Eugene R. Potapov Nick C. Fox*, D. Sumya**, S. Gombobaatar**, O. Shagdarsuren***
** Falcon Research Institute, PO Box 19, Carmarthen SA33 5YL, UK*
*** Zoology Department, Faculty of Biology, National University of Mongolia.*

Монгол дахь идлэг шонхорын үүрлэх байрын сонголт

Монгол оронд идлэг шонхор нь уул, ойт хээр, хээр, цөлөрхөг хээрт үүрлэнэ. Монголын идлэг шонхорын нэгэн онцлог нь хүний гараар бүтсэн буюу зохиомол обьектуудыг илүүтэй (55.3%) сонгоно (байгалийн обьектод 44.7%). Зохиомол обьектод цахилгаан болон утасны шон, хаягдсан худаг, төмөр замын тоосгон жижиг байшингийн дээвэр, төмөр бетон болоод томоохон автозамуудын ойролцоох ашиглагддаггүй байгууламжууд багтана.

Зохиомол болон байгалийн обьектууд дээр үүрлэсэн хосуудын хувьд шинээр гарч буй ангаахайн тоонд мэдэгдэхүйц ялгаа илэрдэггүй болохыг 1998 оны бидний тооллогын судалгааны үр дүнгээс харж болно. 2000 онд цахилгаан болон утасны шонд үүрлэсэн идлэгүүдийн популяцид шинээр төрүүлж буй залуу шувуудын тоо цөөн байгаа нь ангаахайн үхэл хорогдол ихэссэн болон V сарын эхний хүчтэй салхи шуурганд өндгүүд хайрагдсантай холбоотой.

Выбор мест для гнездования соколом-балобаном в Монголии.

В Монголии балобан гнездится в горном, степном, полупустынном и лесостепном ландшафтах. Отсличительной чертой монгольского балобана является его способность гнездиться на искусственно созданных структурах даже в большем количестве (55.3%) чем на естественных субстратах (44.7%). Из искусственных структур гнезда отмечены на столбах электролиний, а также на заброшенных колодцах, избушках путевых обходчиков, на железобетонных конструкциях и даже вблизи напряженных автодорог.

По результатам учетов 1998 года мы не нашли статистически значимих отличий между размерами выводков у пар, гнездящихся на искусственных и естественных субстратах ($F=0.968254$, $P = 0.5311$). Однако в 2000 году пары, гнездящиеся на столбах имели меньший размер выводка из-за большой смертности птенцов и переохлаждения яиц вызваных ураганным ветром в начале мая.

In 1998 as part of the agreement between the Environmental Protection Agency, Ministry of Nature and Environment, Mongolia and the National Avian Research Center, UAE we carried out surveys of Saker Falcons in Mongolia. As a routine method we registered nest site locations according to the NARC protocols. The nests were in 5 study areas scattered across Mongolia (Shagdarsuren et al. this volume) as well as on routes between the study areas. The total number of nests was used to calculate the breeeding performance of birds nesting in different substrates, whereas the data from the study areas were used to assess the whole country percentage of nests at artifical and natural nest substrates. The latter method has been applied before (Shijirmaa et al. 1999) and differs significantly from the data collection protocol used by Ellis & Tsengeg. (1997) as they used mostly road counts.

In Mongolia the Sakers were found breeding in mountain, open steppe, semi-desert and forest-steppe habitats. A remarkable distinction of breeding habitat of Mongolian Sakers is that the number of nests found on artificial nest substrates (electric poles, bridges, buildings) outnumber those nests located on natural substrates such as cliffs and rock ledges (Figure 1). This pattern persistently exists during both years of the monitoring. For both 1998 and 1999 years 55.3% of the active nests were located on artificial structures, whereas 44.7% on natural substrates (N=141). Amongst artificial nests the falcons prefer poles of electric lines of various kinds (Figure 1). Electric poles are not the only nest sites available for falcons in flat steppe areas. It is not unusual to see falcons nesting on abandoned wells, metal and wooden electric poles, even close to busy roads and railways on deserted concrete and log cabins.

Figure 1. Proportion of nests located on artificial substrates vs. natural nest sites.

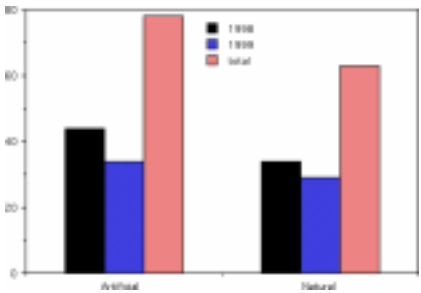
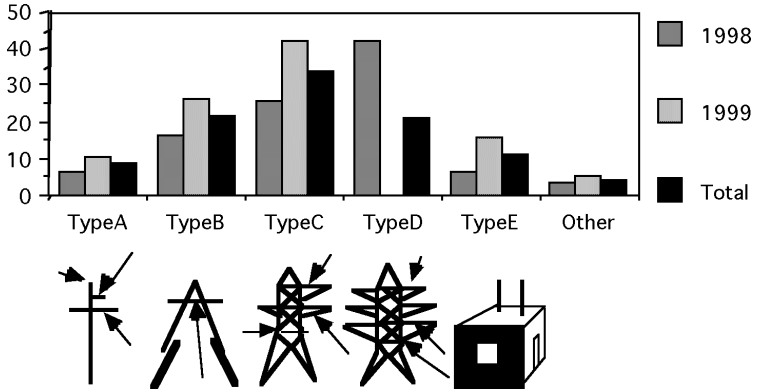


Figure 2. Types of artificial nest-sites.



Amongst natural substrates the Sakers preferred cliffs (niches and ledges) (Figure 3). The proportions of other types were much smaller. The most remarkable was finding a Saker nest on flat ground. Ground nesting has been described in Peregrine Falcons *Falco peregrinus* (Ratcliffe 1993 and references therein) but as yet no ground breeding records were known for the Saker Falcons*. This falcon breeds in a variety of habitats from high mountains of Afghanistan, Kyrgistan, southern taiga of Transbaikalia, to rolling steppes of Kazakhstan, Mongolia and China (Baumgart, 1995). In Mongolian steppes habitats the Sakers show a variety of choice of nest sites including cliffs, rocks, abandoned buildings, railway bridges (Ellis et al 1997). Nevertheless the Sakers in Mongolia were previously thought to be nest site limited and their presence in some flat habitats where there were lack of rocks with cavities heavily relied on man-made structures like electric poles of various kinds and deserted buildings and ruins. Also it was noted that Sakers show a high degree of dependence on stick nests made by Ravens *Corvus corax* or Upland Buzzards *Buteo hemilasius* (Ellis et al 1997, Baumgart, 1995). The paradox of Mongolian Sakers is that it was considered to rely heavily on artificial nest sites which generally outnumber the natural sites (Potapov 1999).

On 24 of May 1999 we found a ground nest of Saker Falcon in the rolling steppe of Delgertsoght somon, Dundgov' Aimak (province). The nest was located on top of a relatively low hummock, and was in fact a disintegrated old nest of an Upland Buzzard. Upland Buzzards were successfully breeding some 200 meters away also on the ground. Their

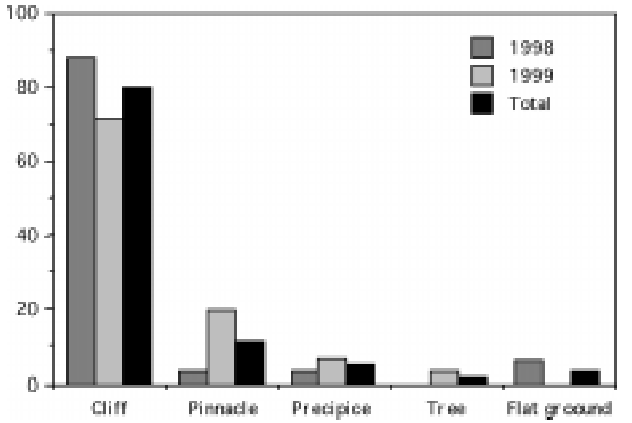
active nest was evidently blown down from a telegraph pole located in the direct view of the Sakers' nest. A busy unpaved road was some 250 m away from the nest. The hummock was not the highest amongst surrounding hillocks.

The nest contained 4 young chicks, and was subsequently re-visited several times. All 4 chicks were recorded to reach the age of 30-36 days when it was visited for the last time. Parent's observation points were on the slopes of adjacent hummock overlooking both nests and the road with the parallel telegraph line. The later was also used as perch for hunting. There was a high population of Gerbils (*Meriones spp.*) and increasing population of Brandt's vole (*Microtus brandtii)* in the surrounding steppes.

The finding of ground nesting pair of Saker Falcons is of a great significance to the reliability of surveys. As a rule, most of the Saker's surveys were just driving across the steppe and visiting any object or natural structures which might accommodate Saker's eyries like rocks, pinnacles, edges of mountains, abandoned buildings and powerlines. Flat or undulating steppe was simply disregarded and it was assumed that falcons do not breed in habitat lacking potential nest sites. More than 4/5 of the steppe habitat has sufficient food supply for the Sakers and was considered to lack potential nest site. Systematic survey undertaken by us in 1998 assumed that the average nearest neighbour distance between the nests is 7 km and in some cases it could be as little as 3 km. The survey routes of 1998 surveys were planned to cover all plain steppes in grid of 5-7 km with denser coverage of rocky areas. More accurate surveys of 1999 took into account the possibility of cluster nesting of Sakers and the plans included to cover flat areas with no potential nesting sites with the density of survey routes 3 km apart. The found nest account for less than one percent of total nesting types, but has a great significance on the extrapolation results since the rolling steppe which was considered to be not suitable for falcon breeding unless it contained nest sites on man-made structures amass a total of 20% of Mongolian territory. As a result, the low density ground breeding might increase the total estimated population numbers 10-15%.

The nesting of Sakers in easily accessible places such as roofs of abandoned wells or at the poles close to roads, and on ground is unusual in Asia, due to human interference. The peaceful attitudes of local people towards these falcons are based on Buddhist traditions which prohibit the killing or disturbance of birds except a few species considered to be medicinal. Moreover there is also an ancient belief that to kill a falcon means to kill a soul of a warrrior (Simakov 1998).

Figure 3. Nest sites locations on the natural substrates. N=63.



According to the results of 1998, there was no significant difference between brood sizes of pairs breeding on artificial and natural sites (F=0.968254, P = 0.5311). However in 2000 breeding season the pairs breeding on electric pole demonstrated a significantly less reproductive output due to high mortality in young and overcooled eggs caused by a devastating windstorm in early May.

Comments

* Dr. A. Bold told us after the presentation that he knew one ground nest in 1970s in eastern Mongolia. The nest was located in an old ground nest of Upland Buzzard. This confirmation is of a great importance as it supports the idea that ground nests do exist in natural populations but are difficult to find using standard searching patterns.

References

Ellis, D. and Tsengeg, P. 1997. Remarkable Saker Falcon (*Falco cherrug*) breeding sites in Mongolia. J. Raptor Research 31(3): 234-240.

Potapov, E. S. Banzragch, D. Shijirmaa. 1999. The paradox of industrialisation on Mongolia: expansion of Sakers into flat areas is dependent on industrial activity. Falco, The newsletter of the Middle East Falcon Research Group 13 (1999): 10-12.

D. Shijirmaa, S. Banzragch, N. Fox, Potapov, E. 1999. Saker Falcon (*Falco cherrug*) in Mongolia. Proceedings of the Vth World Conference on Birds of Prey and Owls. 4-11 August 1998, South Africa, 4-11 August 1998, Midrand, Johannesburg, South Africa.

Simakov G.N. 1998. Falconry and cult of birds of prey in Middle Asia (ritual and practical aspects). Peterburgskoe Vostokovedinie, St. Petersburg.