



# FALCO

The Newsletter of the Middle East Falcon Research Group  
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**Objectives of the MEFRG** ([www.mefrg.org](http://www.mefrg.org)):

**Provide a forum for information exchange on matters relating to falcons and falconry in the Middle East**

**Promote and/or improve the understanding of:**

- The cultural heritage of Arabic falconry
- The utilisation and management of quarry species
- The conservation of wild falcons used in Arabic falconry
- The management of falcons in falconry
- Advances in veterinary and aviculture care of falcons
- International issues impacting on, or arising from, Arabic falconry

**The objectives of the MEFRG will be achieved by**

- Holding regional workshop meetings and international conferences
- Publishing and distributing a paper and electronic Newsletter (**FALCO**) on issues of common interest to the MEFRG
- Coordinating and hosting a website and maintaining an online subscribers database

We welcome the submission of articles for **FALCO**. Please bear in mind that **FALCO** is not a scientific journal and we would like authors to remember that articles should be accessible to a diverse readership comprising falconers, biologists, veterinarians and policy makers. We are interested in authoritative, accurate and informative articles related to the subject areas listed below

### Falconry

articles about the practice of falconry of interest and relevance to Arabic falconers

### Falconry Heritage

articles about Falconry Heritage of interest and relevance to Arabic falconers

### Quarry Management

articles on the conservation and management of quarry species utilised in Arabic Falconry or of interest to Arabic falconers

### Raptor Conservation

articles on the conservation and management of raptors used in Arabic falconry, but also more generally of any raptors in the Middle East

### Avian Health and Management

articles on veterinary and avicultural issues specifically originating from work carried out in the Middle East, but external studies that are relevant to improving the health of raptors in the Middle East will be considered

### Research Biology

articles on biological research of falcons used in Arabic falconry, to cover issues such as migration, taxonomy, genetic research, etc

### International Issues

articles and updates on international policy decisions and discussions relating to falconry, conservation, trade and animal health that is of relevance and interest to Arabic falconry

### Public Awareness and Education

articles on initiatives that can contribute to a better understanding of Arabic falconry and the wider issues surrounding it

### Technical Updates

reviews and updates on new products/equipment etc. that may be useful for biologists, falconers and vets working with raptors

### Photo Section

interesting images of relevance to subjects covered by the MEFRG

### Raptors in the News

summary of recent press releases relating to subjects covered by the MEFRG

### What's New in the Literature

Review of recently published scientific literature relevant to the objectives of the MEFRG

We also accept and publish Book Reviews and Letters. If you are in doubt about whether or not an article fits any of the above categories please contact the editor:

**Dr. Andrew Dixon** (Email: [falco@falcons.co.uk](mailto:falco@falcons.co.uk))

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### Cover picture

Saker Falcon and artificial nest, Mongolia  
(Photo: Batmunkh Davaasuren;  
<https://www.flickr.com/photos/123664928@N06/>)

### Back Cover picture

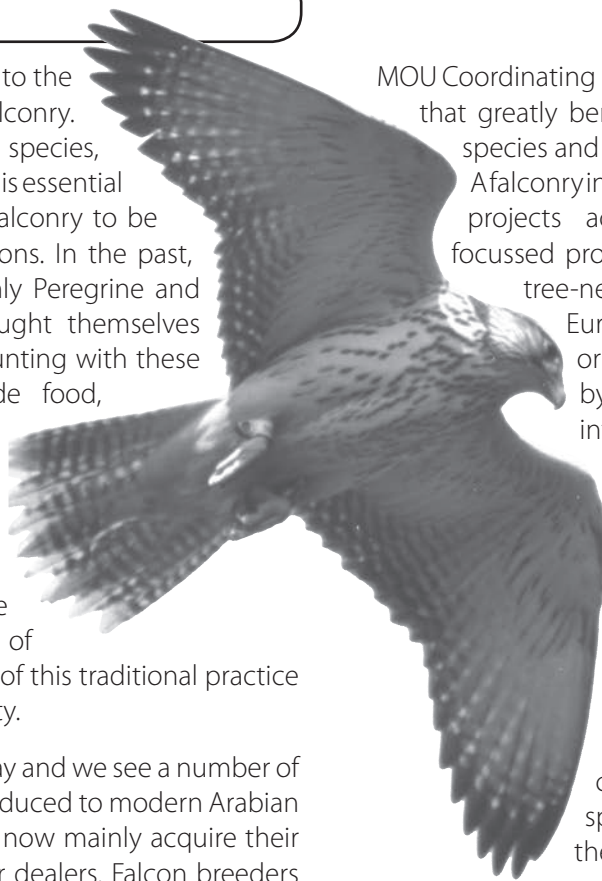
Female Saker Falcon brooding recently hatched chicks, Ile River, Kazakhstan, 12 April 2015  
(Photo: Altay Zhatkanbayev)

Conservation is fundamental to the well-being and future of falconry. The conservation of quarry species, wild falcons and their habitats is essential for the cultural tradition of falconry to be practiced by future generations. In the past, Arabian falconers used mainly Peregrine and Saker Falcons that they caught themselves on autumn passage. After hunting with these birds overwinter to provide food, they were then released back to the wild in spring to return to the breeding grounds in places as far away as Arctic Russia (in the case of Peregrines) and the Eurasian steppes (in the case of Saker Falcons). The longevity of this traditional practice demonstrated its sustainability.

Fast forward to the present day and we see a number of changes that have been introduced to modern Arabian falconry. Gulf State falconers now mainly acquire their birds from falcon breeders or dealers. Falcon breeders can produce hybrid falcons and species that were not widely used in the past, such as Gyrfalcons. The falcon dealers can also source their falcons from trappers. These trappers operate across continents, especially catching falcons in Sub-Saharan Africa, North Africa, the Middle East, Central Asia and Russia. The demand for falcons in the Gulf States is huge, fuelling a legal trade in captive-bred birds and a largely illegal international trade in wild falcons. This commodification of wild falcons has led to major concerns about the impact of trapping on wild populations.

The impact of trapping on falconry species will vary among species and across geographic regions. Furthermore, trapping for falconry is just one of a number of threats facing species like Peregrine, Saker Falcon and Gyrfalcon. Habitat and prey loss as a direct and indirect consequence of human activity, pollution and climate change are a real concern with impacts on species at a global scale. There are more specific threats too, such as electrocution at low and medium voltage electricity distribution lines and persecution to protect game interests.

As the falconry hunting season ends we approach the start of the breeding season for falcons and the period when field programmes aimed at the conservation of falcons are active. In this issue of *Falco* there is a review of the international research, conservation and education initiatives undertaken in 2015 by the Environment Agency-Abu Dhabi. The cultural value of falconry in emirate is the main driver for this programme of work. EAD also hosts the Convention of Migratory Species Office-Abu Dhabi, which accommodates the Raptors



MOU Coordinating Unit; an international memorandum that greatly benefits the conservation of falconry species and other migratory birds of prey.

A falconry interest underpins many conservation projects across the globe, from species-focussed projects like the one to re-establish a tree-nesting population of Peregrines in Europe to the broad range of raptor-orientated projects implemented by the Peregrine Fund. A falconry interest also extends to transferring skills such as captive breeding, artificial incubation, hacking and rehabilitation to conservation projects, as demonstrated by the work of the International Centre for Birds of Prey to establish captive breeding for vulture conservation in the Indian subcontinent. There are also many projects in place to conserve important falconry quarry species and their habitats, such as the Houbara and desert hare.

It is important that a newsletter like *Falco* does not ignore or dismiss the problems that arise due to some of the excesses of Arabian falconry, but we should also record the huge efforts being made by falconers across the globe to help save the birds they love and the environments in which they live.

**Andrew Dixon**

Editor, *Falco* Newsletter

### **An appeal for contributions**

We would like to see more MEFRG subscribers share their opinions, experience and knowledge through *Falco*. We can accommodate articles written in Arabic and English that fit within the subject areas listed opposite.



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**Facebook**

We now have a MEFRG Facebook page. This is a closed site open to members only. In order become a member use the following link to send a request to be a member: <https://www.facebook.com/groups/835021173290084/?ref=bookmarks>

Click the 'Join Group' button and the site administrator will add you to the membership list. All members can post on the site with the approval of the site administrator.



### Incidental death of a Saker Falcon as a result of trapping

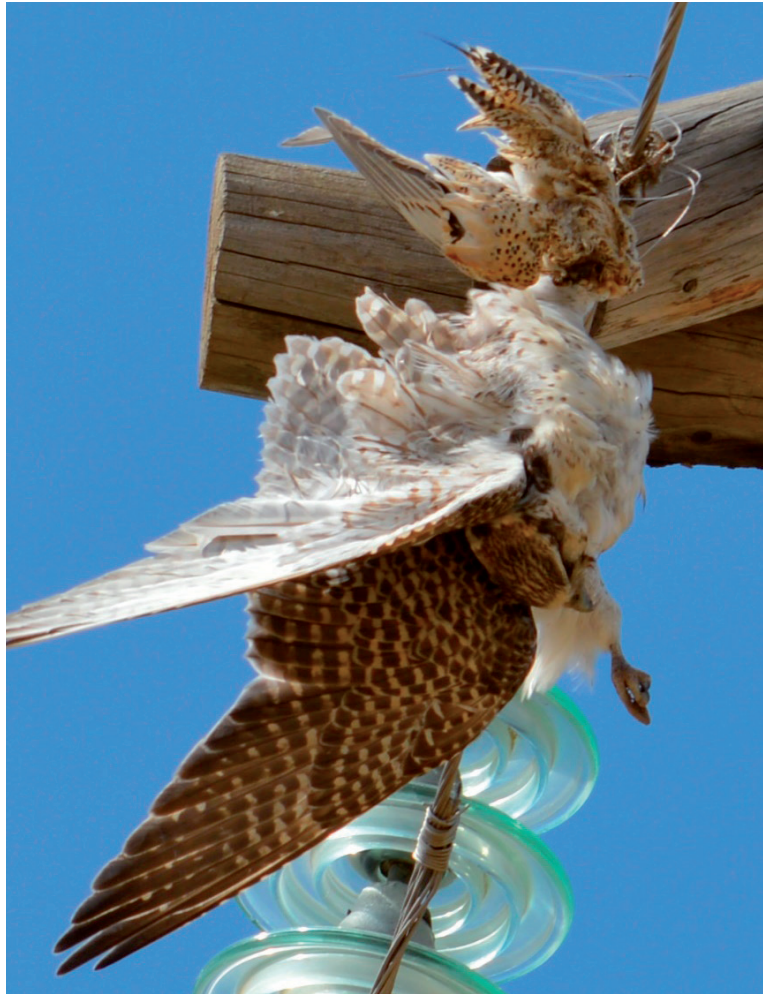
#### Batbayar Galtbalt

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These photographs taken in the Bayanjargalan district, Töv province, Mongolia on 18 July 2013 show a dead adult male Saker Falcon hanging from a power line clutching the corpse of a Pallas's Sandgrouse *Syrrhaptes paradoxus*. Closer examination reveals that this bird died as a result of falcon trapping that takes place, primarily during the late summer and autumn, in Mongolia.

Trappers use a variety of methods to catch Sakers in Mongolia, including live birds such as pigeons and sandgrouse that have been fitted with nylon nooses. Often these noose-birds are not tethered or weighted as this can make them less attractive to the falcon that has been targeted for trapping. Once released these noose-birds, if not caught by the targeted falcon, are not always retrieved by the trappers and can be left to roam in the environment. These stray noose-birds can then be caught by another falcon or any other raptor. The hapless predator gets caught in the nooses and may never work itself free or, as in the case seen in the photograph, subsequently become entangled somewhere.

While this is not a major cause of mortality for Mongolian Sakers, this photograph demonstrates that noose-birds



left flying wild pose a significant danger to birds of prey and should serve as a reminder to all falcon trappers that noose birds should always be retrieved after release.





## Observation of an escaped falconry bird feeding on Socotra Cormorants *Phalacrocorax nigrogularis* in Abu Dhabi

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As part of an environmental monitoring plan during a seismic survey commissioned by the Abu Dhabi National Oil Company (ADNOC), a bird count was conducted on 15 December 2014, on Az Zabbut, a small rocky island situated approximately 1 km north of the Shuweihat Island peninsula in western Abu Dhabi, United Arab Emirates.

cormorants nearby that may also have been killed by this bird previously.

It is interesting to note that while there appeared to be a sizeable breeding population of feral pigeons, a more typical falcon prey item, present on the island, this individual falcon preyed on Socotra Cormorants, perhaps indicating that the latter species represented an easier or more worthwhile prey due to its larger size.

Some falcon species regularly prey on certain species of seabirds (e.g., Peregrine and Gyrfalcon taking alcid), but references to falcons preying on cormorants of any species are scarce (e.g., Sutton. 2014. *British Birds* 107, 704-705). In this instance the falcon is certainly a



During the bird survey, a falcon was observed sitting on top of a Socotra Cormorant *Phalacrocorax nigrogularis*, grasping its neck with its talons. The falcon carried a VHF radio transmitter, a leg ring and was equipped with jesses. Despite the presence of telemetry this bird had been lost by a falconer. It was panting heavily as if just having finished an intense chase. Drag marks in the sand indicated that the cormorant had been brought down a distance away and dragged to the observed location next to a cliff wall. There were older carcasses of

captive-bred hybrid, probably a Peregrine x Gyrfalcon. Escaped falconry birds of captive origin are thought to have little prospect of surviving for long periods in the Arabian Gulf, but it appears that this individual had found a readily available supply of cormorants to exploit.

### **Acknowledgements**

We thank ADNOC who commissioned the seismic survey and who graciously gave permission to have the information detailed above distributed.

# International falcon project work undertaken in 2015 for the Environment Agency-Abu Dhabi

## Andrew Dixon

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## Introduction

International Wildlife Consultants Ltd. (IWC; Director: Dr. Nick Fox), undertakes falcon research and conservation management projects on behalf of the Environment Agency-Abu Dhabi (EAD). The IWC research team comprises Dr. Andrew Dixon (Head of Research), Dr. Md. Lutfur Rahman (Research Biologist) and Nicola Dixon (School Links Coordinator) who implement the EAD projects through working with specialists in partner organizations in several countries.

The EAD projects undertaken in 2015 focused on species of cultural importance in Arabian falconry i.e., Saker Falcons, Peregrines and Gyrfalcons, with fieldwork undertaken in four countries: Mongolia, China, Russia and Bulgaria alongside a parallel genetics project investigating the genome and population genetics of each species.

## Saker Falcon research and conservation management in Mongolia

Research Partner - Wildlife Science and Conservation Center: Nyambayar Batbayar (Director), Batbayar Galtbalt (Mongolian Project Leader), Batmunkh Davaasuren and Batbayar Bold (Project Assistants), Sarangerel Ichinkhorloo (School Links Assistant).

## Artificial Nest Project

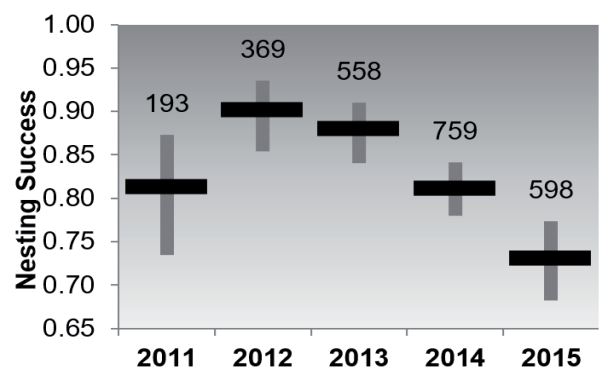
In 2015 we recorded 598 Saker Falcons breeding in the artificial nests established by EAD in Mongolia. This year, 73% of Saker Falcons at the artificial nests successfully produced at least one fledgling, with an average of 3.0 young birds fledged per successful nest.

We estimated that Saker Falcons breeding in the artificial nests produced 1,404 fledglings (95% CI = 1,332 to 1,476 fledglings). In addition, we recorded 328 Common Kestrels, 151 Upland Buzzards and 404 Ravens breeding in the artificial nests during monitoring in April (the only time when all artificial nests were visited as subsequent visits targeted nest occupied by Saker Falcons). However, It is likely that additional Common Kestrels and Upland Buzzards initiated their breeding attempts after this April visit, so the recorded number of breeding pairs is conservative.



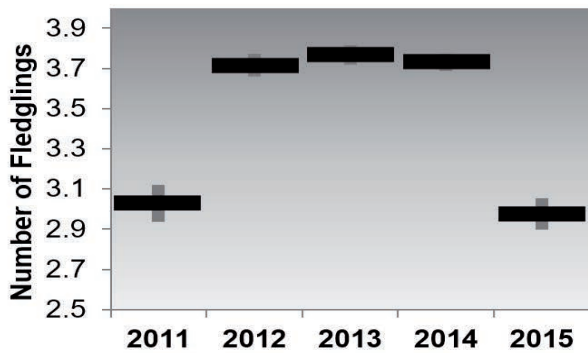
(Photo: B. Davaasuren)

Compared to the previous year, the number of breeding Saker Falcons in the artificial nests declined by 21%, with declines of 19% and 40% also recorded for Common Kestrel and Upland Buzzard respectively (comparing counts in April 2014 with those in April 2015). In contrast the breeding population of Common Raven increased by 9%. This was the first season since we erected the artificial nests in 2010 that the breeding Saker Falcon population had declined. Not only was the number of breeding pairs lower than in previous years but also the nesting success declined along with the number of fledglings produced per successful nest (see Figures 1 and 2).



**Figure 1.** Nesting success (i.e., proportion of nests that successfully raised at least one fledgling) at artificial nests in Mongolia in 2011-15. Bars show 95% confidence intervals and values indicate number of nesting pairs in each year.

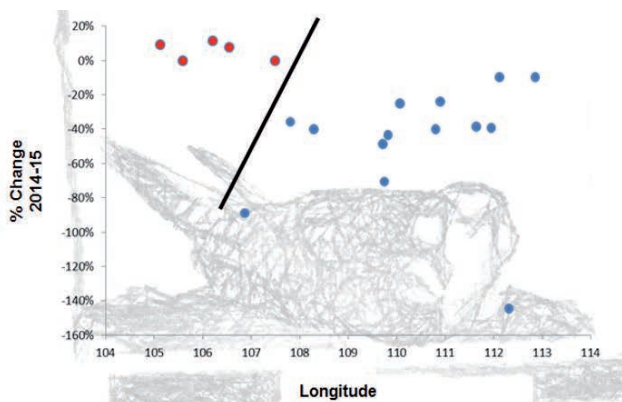




**Figure 2.** Number of fledglings from successful nesting attempts at artificial nests in Mongolia in 2011-15.

It is possible that the population decline in 2015 reflects a downward population trend in important prey species such as Brandt's Vole and Mongolian Gerbil. These rodents undergo periodic cyclical changes in their populations. We found evidence of geographic variation in the population trend of Saker Falcons, with the population declines being most marked in the eastern regions of the country (Figure 3). We are undertaking analysis of Saker Falcon diet across years to determine if declining population trends correlate with changes in the prey species eaten.

**Figure 2**



**Figure 3.** Changes in the breeding population of Saker Falcons at artificial nest grids between 2014 and 2015 in relation to their west-east location in the Mongolian steppe zone. Blue dots indicate artificial nest grids with a declining population and red dots indicate grids with a stable or increasing breeding population.

At the start of the breeding season in April, 44% of the available artificial nests were occupied by breeding raptors and by the end of the season in July 2014 a total of 3,323 artificial nests were still standing. Since 2010, 1,827 nests have been removed, broken or fallen over. Artificial nests are taken to sell as scrap, bolts holding barrels to the poles are removed to use on motorbikes and both the barrels and poles are taken to be used as building materials. Others fall over due to soil erosion or

are pushed over by livestock, and some barrels break off the posts in strong winds. Artificial nests in Sukhbaatar district have been systematically removed, such that only a handful of nests remain standing.

## School Links Programme

The Schools Links Programme runs parallel with EAD falcon research projects as a way of developing



**Figure 4.** Painting of a Saker Falcon by Turbold from Bayan School, Mongolia. Student paintings were used in the 2015 School Links Programme calendar.

community outreach and education. The programme links schools in countries where falcon research is undertaken with international schools, using the research work as a common theme of introduction.

Currently, there are 11 units of work available for teachers and students to access through the School Links Programme website [www.schoollinksprogramme.org](http://www.schoollinksprogramme.org). Each unit of work contains PowerPoint presentations, student activities, worksheets and teachers notes. Students can learn about falconry, falcon ecology including migration and diet, conservation threats such as electrocution and conservation actions like species reintroduction and the use of artificial nests.

Falconry is a widespread and culturally important practice in many parts of the world, incorporating aspects of heritage, history, literature and science, making it an ideal subject for educational programmes as it represents a common theme that cuts across a diverse range of cultures. We are very grateful to the growing number of falconers who are giving their time and expertise to visit link schools with their falcons and hawks and help teachers deliver units of work. This year, the SLP took part in the IAF World Falconry Day for the first time, with 516 children, from six countries taking part.

Schools are encouraged to get involved with local falcon conservation programmes. In June 2015, nearly 300 Mongolian students visited artificial nests near their schools with biologists, to monitor nest occupation by Saker Falcons.



**Figure 5.** School children visiting artificial nests in Mongolia.

The programme can be modified to suit students of all ages. Currently we have children aged from 6 to 15 years old participating in the programme, in 45 schools from 13 countries. New schools from UAE, Bulgaria, Austria, Norway, Portugal and Russia joined the programme in 2015, which has enabled some Mongolian schools to be linked with two international schools. Students send pen pal letters and write on closed blogs which allows daily student correspondence and is only accessible during school hours and only visible to students and teachers with access to the blog.

A 2016 calendar has been produced using some of the 118 paintings and poems sent to us by children in the school links programme (Figure 4).

## Reintroduction of the Saker Falcon in Bulgaria

*Research Partner: Green Balkans Wildlife Rehabilitation and Breeding Center, Ivailo Klisurov (Manager), Darren Weeks, David Izquierdo (Saker Reintroduction Project Officers), Ivan Kaishev (Project Assistant).*

EAD has pioneered *ex-situ* conservation efforts in Abu Dhabi and internationally; it hosts the IUCN reintroduction specialist group and in relation to falconry is a world leader in the reintroduction and reinforcement of quarry species such as Houbara. *Ex-situ* activities also include the release of wild-caught falcons used in falconry through the falcon release programme. The reintroduction project being implemented in Bulgaria aims to restore the Saker as a breeding species in the country. This project has been developed over a number of years, first through the production of a 'feasibility study' (2006-09), then through the implementation of a series of 'pilot releases' (2011-14) to develop methodological skills and to obtain data on movements and survival via satellite tracking. The project manages a captive-breeding population of Sakers at the Green Balkans Wildlife Rehabilitation and Breeding Center, Stara Zagora (Figure 6).

This project involves releasing captive-bred Saker Falcon nestlings at a 'wild hack' site in the agricultural landscape of central Bulgaria. The captive breeding group of Saker Falcons at the Green Balkans WRBC comprised five pairs, which laid 24 eggs and produced 21 chicks; 19 were released at hack and two were retained for future breeding stock.



**Figure 6.** Parent-reared Saker Falcon chicks at the Green Balkans Wildlife Rehabilitation and Breeding Center, Stara Zagora (Photo: Green Balkans).

The hack site was located at Malko Kadievo, close to the breeding center at Stara Zagora. We fixed 4 hack cages in trees, positioned 1-3 km apart. Each of the 19 birds placed in the hack cages was fitted with a numbered colour-ring for individual identification after fledging. The hacked nestlings comprised 12 females and seven males. All of the young Sakers fledged and took food provided at feeding tables in the vicinity of the hack cages. Our pilot study results demonstrated that post dispersal survival was higher for birds that remained for longer periods in the hack site after fledging, so our aim was to retain juveniles for at least 28 days after fledging. We achieved this aim and post-release survival rates during 40 days prior to dispersal were very high at 99%.

Satellite tracking during the earlier pilot release project indicated that nestling Saker Falcons released at hack in Bulgaria can return to their natal area. However, there are impacts of using harness-mounted satellite transmitters on young Saker Falcons, reducing their survival chances. Consequently, to maximize the chances that our birds will survive to breeding age, we did not fit satellite transmitters to any of the young birds released.



## Research on Peregrine Falcons and Gyrfalcons in Northern Eurasia

*Research Partners and organizations: Drs. Aleksandr and Vasily Sokolov (Inst. Plant & Animal Ecology, Ural Branch, Russian Academy of Sciences), Dr. Sergey Ganusevich (Administration of Protected Areas - Murmansk region).*

Peregrines fitted with satellite-received transmitters at their breeding sites in Arctic Eurasia continued to send location signals. During 2015, we tracked nine Peregrines but by the end of the year only two were still transmitting; both of these Peregrines were tagged on the lower reaches of the Kolyma River in 2013. One bird ended the year at its wintering range in farmland north of Bangkok in Thailand, while the other occupied a wintering range at a sea-port on the west coast of South Korea.

In 2015 we continued sampling work in preparation for a genomic study of global Gyrfalcon populations. The sampling was undertaken in collaboration with a number of partners in Russia. We collected blood samples from five nest sites on the Kola Peninsula of Russian Lapland (Figure 7).



**Figure 7.** Sergey Ganusevich (right) and Pavel Gorbachev blood-sampling Gyrfalcons on the Kola Peninsula (Photo: Joaquin Arocena).

Seven territories on the Yamal Peninsula were inspected and all were occupied, with breeding proven at six. In April, the Willow Grouse population of the region was judged to be very high, with daily sightings of flocks containing >100 birds. Blood sampling has now been completed for the Yamal study area (Figure 8).



**Figure 8.** Male Gyrfalcon showing an extensive brood path. Yamal peninsula (Photo: V. Sokolov).

Dr. E. Syroechkovskiy (Birds Russia) organized an expedition to Chukotka in the Russian Far East, where our survey team checked nine Gyrfalcon territories, but only one of these was found to be occupied and no breeding took place here. At least three of the visited sites were known to be occupied by breeding pairs in the previous year, so the lack of breeding in 2015 was disappointing. Willow Grouse counts were conducted daily in June, with no more than two birds being seen in any one day, so the population of the region was judged to be very low.

## Land management and Saker Falcon conservation on the Qinghai-Tibetan plateau, China

*Research Partner and organization: Prof. Xiangjiang Zhan (Institute of Zoology, Chinese Academy of Sciences, China).*

In June 2015, we checked the Mongolian-style nesting barrels that had been erected by the Rodent Control Stations in Madoi County, Qinghai and Zoige County, Sichuan. In each region 25 nesting barrels had been erected the previous summer, but only three nests in Qinghai were occupied by Upland Buzzards. During monitoring we identified a number of issues with the artificial nests that had been erected. In Sichuan the nests were erected in a heavily disturbed grassland area populated by many herder encampments and visited by large numbers of tourists. Consequently, the region was poorly suited for breeding raptors. There was no such disturbance issue at the Qinghai location, but here the nest box construction team had added a wooden

perch at the entrance of the nesting barrel. These wooden perches restricted access to the interior of the boxes, and furthermore the boxes were not adequately lined with a nesting substrate and fixed at a height of only 2 m. Consequently, these artificial nests were likely to be less attractive to breeding Saker Falcons than they might otherwise have been. Nevertheless, there is great potential for correctly sited, well-designed artificial nests to be used to manage raptor populations on the Qinghai-Tibetan plateau.

This was demonstrated by additional survey work conducted by our survey team in June, when they checked a further 150 artificial nests erected previously by the Rodent Control Stations in Madoi County. Of these nests, 55 were found to be occupied by Upland Buzzards and 12 by Saker Falcons



(Photo: A. Dixon)

We conducted a survey along ca. 1000 km of medium-voltage power line when travelling between at Zoige in Sichuan and Madoi in Qinghai, but only one electrocuted Upland Buzzard was found beneath a junction pole. It was encouraging to find such a low mortality rate despite dangerous configuration of poles on the burgeoning electricity infrastructure being built in the region. In Madoi County, some lines that had previously been found to kill many birds of prey had few electrocution victims in 2015, probably because they were now surrounded by construction work for a new highway.

The disturbance caused by workers and machinery, together with the loss of hunting habitat around the power poles is likely to be the main reason why these lines were not killing raptors at the same high rate as previously. We found the carcasses of Eagle Owl, Upland Buzzard and Saker Falcon below poles at a similarly designed line away from the road construction site.

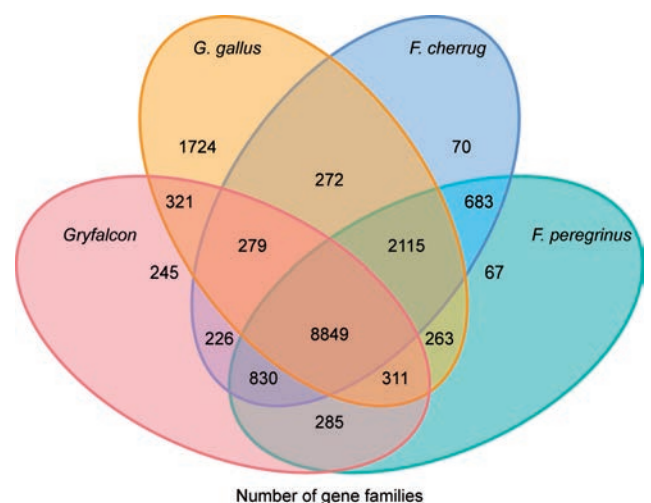
During fieldwork we undertook surveys of Plateau Pikas at different landscape scales. In one survey we quantified the abundance of animals and holes within 1 ha plots during point counts at 10 km intervals along a road route of ca. 2000 km, recording altitude, vegetation type, % grass cover, livestock and human presence at each location. Pikas were widely distributed across the plateau in Qinghai province but absent from land below 3000 m in the Tarim Basin. Highest densities of Plateau Pikas were located in areas with grassland cover >50%. In a survey of 186 plots above 3000 m, 72% comprised grassland with >50% cover. In another study, conducted at a finer scale, we examined a variety of trapping and marking methods as preliminary work for a potential mark-recapture study.

Together with our academic partners at the Institute of Zoology, Beijing and Cardiff University, we are currently engaged in developing a research project to examine predator prey relationships and the potential role of artificial nests in the management of small mammals in rangeland ecosystems.

### Genetic research on falcons

Research Partners and organizations: Prof. Xiangjiang Zhan (Institute of Zoology, Chinese Academy of Sciences) and Prof. Mike Bruford (School of Biological Sciences, Cardiff University, UK) and

To complement the existing whole genome sequences of Peregrine and Saker Falcon, we have now completed the sequencing of the Gyrfalcon genome (>100x coverage). Work is ongoing to compare the genomes of these three falcon species. In a preliminary analysis we have looked at groups of genes (gene families) that are descended from a single gene in the last common ancestor of the three falcon species and the chicken (Figure 9).



**Figure 9.** Venn diagram showing shared orthologous genes clusters in Gyrfalcon, Peregrine (*F. peregrinus*), Saker Falcon (*F. cherrug*) and chicken (*G. gallus*).



### Local terminology of Golden Eagle topography in Altaic Kazakh Eagle Falconry

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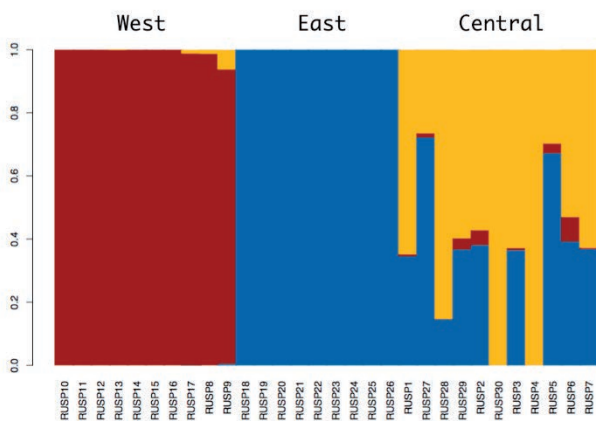
(Photo: D. Scott)

Local terminology and taxonomy in Altaic Kazakh eagle falconry reflects a distinctive recognition, classification, and nomenclature system based on traditional art and knowledge and traditional ecological knowledge. Local eagle masters have developed indigenous terms for body parts and plumage patterns on Golden Eagles (*Aquila chrysaetos*; Figures 1 and 2). I simply report here these local terms for eagle topography. These expressions are not frequently used any more among eagle hunters. However, this suggests deep awareness in classical anatomical taxonomy about captive eagles. This is also comparable to similar taxonomy in classical British and Japanese falconry.

The terms have been determined together with local Kazakh eagle masters and an experienced veterinarian living in Ulaanhus County in September 2014. Nevertheless, accurate correspondence to biological terminology is ambiguous and some of the terms in these diagrams are not fixed definition in the dictionary yet. Therefore, it contains some personal ethnographic interpretations (the Latin transcription from Cyrillic is written based on phonetics rather than verbatim replacement).

**Figures 1 and 2.** Indigenous Altaic Kazakh terms for parts of Golden Eagle.

We have obtained genome sequences for 30 Peregrines with 367.34 Gb data in total for three breeding populations in Arctic Eurasia: West, Central and East. From these data we identified more than 3 million Single Nucleotide Polymorphisms (SNPs). We have identified a system of SNPs that can be used for the population assignment of individuals with unknown origin. Now, using this marker system, we have the ability to determine the region of origin of migratory Eurasian Peregrines used in Arabian falconry. We also detected genome level differentiations among the Peregrine breeding populations of the three populations (Figure 10). Now, we are researching how these differentiations have evolved.



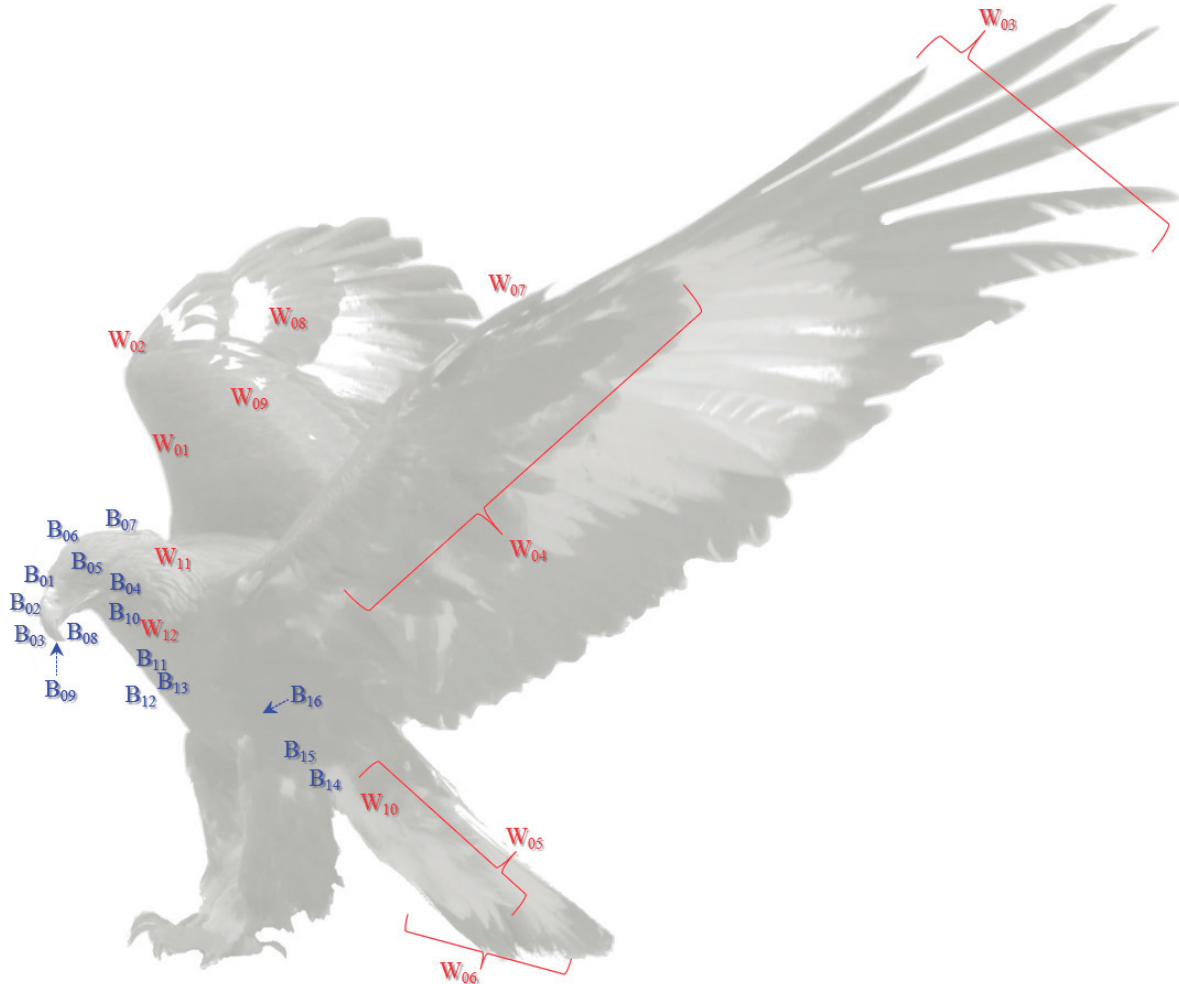
**Figure 10.** Peregrine populations in Arctic Eurasia. Structure analysis (K = 3).

We are establishing a DNA database for the Saker Falcons breeding at artificial nests in Mongolia. To do this, we have identified highly polymorphic microsatellite markers (N = 20) from the Saker Falcon genome. To date, in this on-going project, we have successfully used these markers to identify individuals breeding at a single grid of artificial nests over the period 2011-2013. These markers enable us to know when individual adult birds return to breed each year and also whether or not these returning birds alter their nesting sites in successive years. This information is useful for estimating adult survival and quantifying the extent of breeding dispersal.

#### Publications in 2015

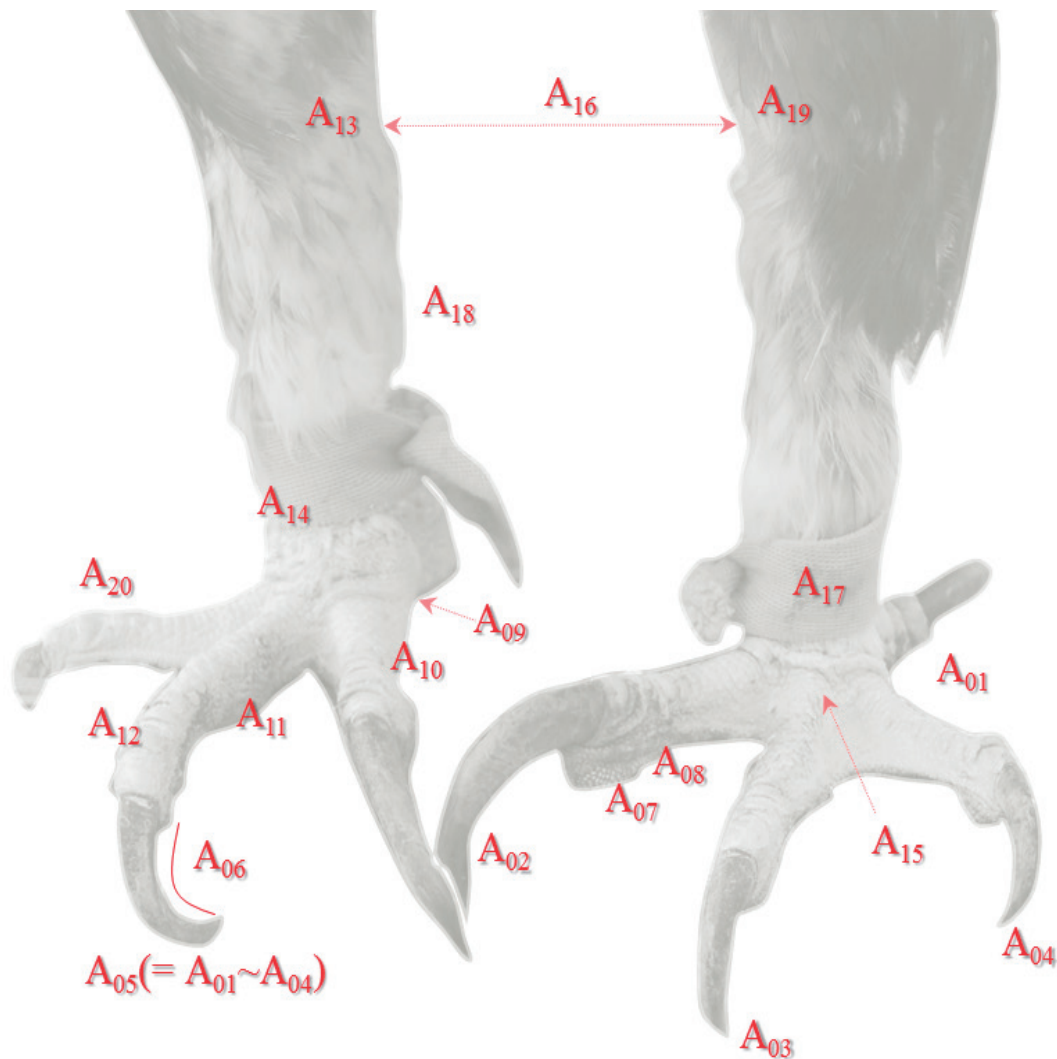
Dixon, A., Ma, M. & Batbayar, N. 2015. Importance of the Qinghai-Tibetan plateau for the Endangered Saker Falcon *Falco cherrug*. *Forktail* **31**, 5-10.

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	Code	Local Kazakh name (Kazakh / Latin)	Anatomical/ Falconers Terminology
Body Section	B <sub>01</sub>	Көк Болат <i>Kok bolat</i>	cere
	B <sub>02</sub>	Құсмұрын <i>Kusmurun</i>	nare (nostrils)
	B <sub>03</sub>	Ақ тұмсық <i>Ak tumsuk</i>	beak
	B <sub>04</sub>	Шегір көз <i>Shegir Koz</i>	eye
	B <sub>05</sub>	Қабак <i>Khabak</i>	blow (eyelid)/ supraorbital ridge
	B <sub>06</sub>	Төбе <i>Tube</i>	parietal/ vertex
	B <sub>07</sub>	Шүйде <i>Shuide</i>	occiput/ back of head (nape)
	B <sub>08</sub>	Кемиегі <i>Kemieg</i>	lower bill gonys
	B <sub>09</sub>	Қияғы <i>Kiyag (= "cutting")</i>	toung (upper bill gonys?)
	B <sub>10</sub>	Жемсау (бөтеге) <i>Jemsau (Butege)</i>	goiter
	B <sub>11</sub>	Омырау <i>Omurau</i>	thorax
	B <sub>12</sub>	Шеңгел <i>Shengel</i>	sternum
	B <sub>13</sub>	Жембасар <i>Jembasar</i>	crop
	B <sub>14</sub>	Сығым <i>Sugum</i>	vent
	B <sub>15</sub>	Тегеурін <i>Tegeurin</i>	synsacrum
	B <sub>16</sub>	Бауыр <i>Baur (bukul ush jag)</i>	liver
Wing Section	W <sub>01</sub>	Кермеиық <i>Kermeik</i>	brachium/ humerus
	W <sub>02</sub>	Жебе <i>Jebe</i>	third digit
	W <sub>03</sub>	Құйрықтар <i>Kuiruktar</i>	primary feather
	W <sub>04</sub>	Сан <i>San</i>	covert feather
	W <sub>05</sub>	Сырт (бүкіл сырт жағы) <i>Surt (bukul surt jag)</i>	white part of contour feather
	W <sub>06</sub>	Шалғайы <i>Shalgaw</i>	empennage/ caudal ala?
	W <sub>07</sub>	Саңырауқұлақ <i>Sangraukulak (= "mushroom")</i>	alula
	W <sub>08</sub>	Майтүбіт <i>Maitubut</i>	patagium
	W <sub>09</sub>	Жотасы <i>Jotas (jaurun surt)</i>	outer side of wings
	W <sub>10</sub>	Табан <i>Taban</i>	down or coverts under tail
	W <sub>11</sub>	Балақ жүн <i>Balakh Jun</i>	feather of back
	W <sub>12</sub>	Тұрқы (Ұзын) <i>Turku (Uzun)</i>	feather of neck?





Code	Local Kazakh name (Kazakh / Latin)	Anatomical/ Falconers Terminology
A <sub>01</sub>	Тереурін <i>Tegeurin</i> (= "onslaught")	first toe (hallux)
A <sub>02</sub>	Жембасар <i>Jembasar</i> (= "food presser")	second toe
A <sub>03</sub>	Сығым <i>Sugum</i> (= "opression")	third toe
A <sub>04</sub>	Шеңгел <i>Shengel</i>	fourth toe
A <sub>05</sub>	Тұяқ <i>Tuyak</i>	talon
A <sub>06</sub>	Пышақ <i>Pushak</i> (= "knife")	innerside of talon
A <sub>07</sub>	Көбе <i>Kube</i>	pad
A <sub>08</sub>	Без <i>Bez</i>	pad?
A <sub>09</sub>	Табан <i>Taban</i>	sole of the foot
A <sub>10</sub>	Табан Қышыры <i>Taban Kushur</i>	furrows of sole?
A <sub>11</sub>	Болат <i>Bolat</i>	pad
A <sub>12</sub>	Аяқ қабыршағы <i>Ayak Kavurshag</i>	crust of foot
A <sub>13</sub>	Топшы <i>Topsh</i>	thigh
A <sub>14</sub>	Шалғы <i>Shalg</i>	mower?
A <sub>15</sub>	Серпер <i>Serper</i>	sole of the foot?
A <sub>16</sub>	Анғар <i>Angar</i>	crotch (interval of legs)
A <sub>17</sub>	Шонты/ салалы <i>Shontu/ Salalu</i>	tarsus
A <sub>18</sub>	Көбе құйрық <i>Kube Kuiruk</i>	leg feather
A <sub>19</sub>	Қауырсындар <i>Kaursundar</i>	plumelet (of mantle?)
A <sub>20</sub>	Мелжем (Жұдырық) <i>Meljem (Juduruk)</i>	fist

Leg and Arm Section

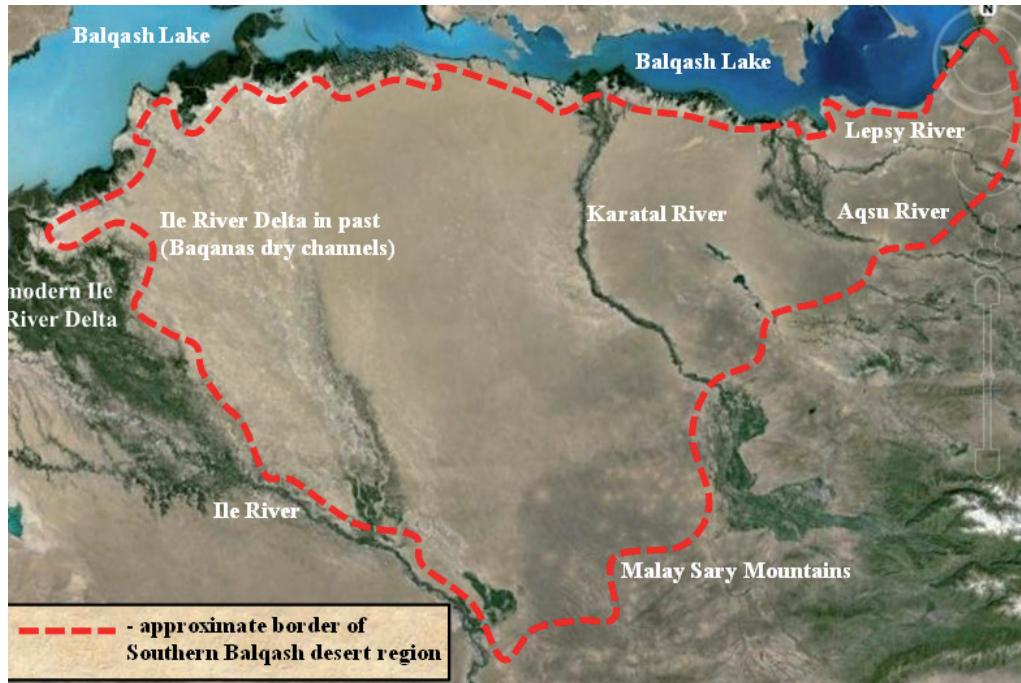
## Breeding Saker Falcons in the Ile River Delta, Kazakhstan

**Altay Zhatkanbayev**

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 Email: kz.wildlife@gmail.com

### Discovery of tree-nesting Sakers in southern Balqash

During my field studies in southern Balqash during 2013-15 I found a new cluster of breeding Sakers. The first nest, found in 2013, was in an old nest of Golden Eagle *Aquila chrysaetos* situated in a turanga tree in the lower reaches of the Ile River Delta (Figure 2; Zhatkanbayev 2014). The nest site bordered typical desert habitat, being characterized by groves and solitary turanga trees growing among dense shrubs and bushes in an area of dry lake beds that were separated from the main delta water systems. In late-April there was clutch of four eggs, three of which hatched and the chicks fledged in mid-June.



**Figure 1.** Geographical region of southern Balqash

### Background

The Ile River Delta is located in the desert natural area to the south of Lake Balqash in southeast Kazakhstan. Several well-known zoologists worked in the delta in the 20<sup>th</sup> Century but none noted the presence of breeding Saker Falcons, with Shnitnikov (1949) concluding that the Saker did not breed in the Ile River Delta and whole Southern Balqash desert region. Detailed avifaunal studies of the delta in the 1950s and 1960s did not record the presence of breeding Sakers (Korelov 1962; Grachev 1973), nor were there any records of the species nesting in trees in the sandy deserts of southern Kazakhstan in the 1970s (Pfeffer 1990).

I did not find any nesting Sakers during my own fieldwork in the Ile River Delta in 1984-2009 nor did I hear from local residents about nesting Sakers or other large falcons. The nearest pair bred ca. 200 km away in the Malay Sary mountains at least in 1986 (Figure 1). In addition Sakers also bred in the mountains of Khantau, Zhambyl, Bayghara and Serektas in the desert areas neighbouring the Ile River Delta (Korelov 1962; Pfeffer 1990).

The first Sakers found using tree-nests in the desert zone of southeast Kazakhstan were located in 1998 (Kovalenko *et al.* 2000); two pairs were found breeding in old nests of Long-legged Buzzard *Buteo rufinus* in the Alakol basin to the east of Lake Balqash.

During the first week after fledging they returned to the nest to roost at night.



**Figure 2.** Saker site in old nest of Golden Eagle in the Ile River Delta. Photo: A. Zhatkanbayev

In 2014, I found two Saker nests in a desert of the Southern Balqash region. These falcons occupied the old nests of Brown-necked Raven *Corvus ruficollis*. Comparison of photographs taken using camera traps installed near the nest in 2013 with images taken at the first nest found in 2014 indicated that these two nests involved the same pair of birds (Figure 3); the 2014 nest was located 5.4 km from the nest used in 2013. It is interesting to note that from 20-24 January and 8-13 February 2014 the pair were regularly observed overnight in the turanga grove 550-750 m from the nest used in 2013. Moreover, the pair remained in the area of



the nest in January and February 2014, demonstrating the permanence of this pair through the previous autumn and their sedentary behaviour.

*frugilegus*, Wheatear *Oenanthe isabellina* and Steppe Agama *Agama sanguinolenta*; once a bird brought a skinned Muskrat *Ondatra zibethica* carcass left by a



**Figure 3.** Male Saker at previous year's nest site, photographed on 12 March 2014.

At the second nest found in 2014, the chicks died after a strong storm on 29 May. In addition, in March 2014 another territorial male Saker, with typical light coloured plumage, tried to attract a large, dark coloured female to the old nest of a Long-legged Buzzard on a turanga tree. The female perched near the nest several times and, the male, in display flight, dived at her several times but did not perch beside her. He kept up his swooping display, and when the female flew from the nest area she rolled over on her back, stretched out her legs with open claws and gradually became involved in the aerial display of male. However, my follow-up visits to this area from March to July did not confirm breeding in this nest, or in other old nests in the nearby district of the desert.

In 2015, I was able to locate three occupied Saker nests, the first of which was located deep into the typical desert of the southern Balqash region in between the Ile and Karatal Rivers. The second nest was the same nest that the pair occupied in the previous year. Sakers were able to usurp the nests of Long-legged Buzzards, and in one case a pair shifted 200 m to build a new nest after being ousted by the Sakers.

In 2013-15, Sakers were seen to provision nestlings with Great Gerbils *Rhombomys opimus*, Rooks *Corvus*

poacher. Another caught an adult Little Owl *Athene noctua* of a pair that bred 500 m away. Sakers hunted Rooks in early mornings and caught adults and took nestlings off their nests in the breeding colonies located 20-25 km away.

In spring and summer, the Saker diet was dominated by Great Gerbil and a Rook. In late winter and early autumn the preferred prey was Great Gerbil, despite daily freezing temperatures significantly decreasing the ground activity of these rodents. One male Saker managed to catch a Great Gerbil within just 8-10 minutes and bring it to his mate, indicating the good foraging conditions of the southern Balqash region in the early stage of the reproductive cycle. I estimated that there were 2-3 and 13-18 colonies of Great Gerbils around the Saker nests discovered in 2015, with 5-7 and 15-20 animals per hectare. It is noteworthy that the Saker Falcons in the desert areas here are in competition with numerous Long-legged Buzzards, whose main prey is also the Great Gerbil.

The breeding Sakers in 2013-15 had a hunting range with a radius of 20-22 km from their nest sites; which was estimated by noting that the birds caught and brought back Rooks from the single area where there were breeding colonies in the local area, each of which comprised *ca.* 300-350 pairs. During nestling provisioning, the Sakers brought up to 20 Rooks from these colonies.



## Nest Observations

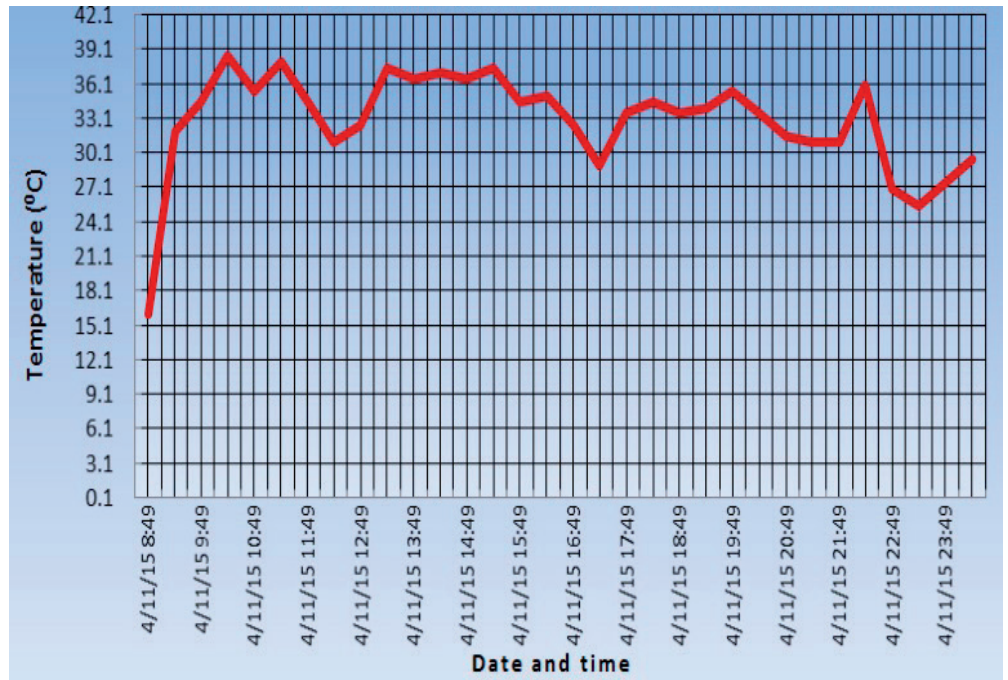
I began observations on 28 February 2015; at this time there were signs of nest scraping activity by the adults. Egg-laying began in the first week of March with the fourth and final egg laid on 09 March. Three chicks hatched on 09-11 April while one egg failed to hatch (incubation period was 33 days). Fledging in the second half of May and until the beginning of June the fledglings stayed near the nest and regularly roosted at night nearby or directly on the nest; mostly the young birds were located within an area of 800 m around their nest.

I installed compact temperature loggers (i-Button DS1921G and DS1922L; Figure 4) in nests. The temperature regime towards the end of the incubation period and the early stage of nestling brooding (11-12 April) ranged from 35.5 - 38.5°C (max) to 15.5-29.5°C (min). In comparison, the temperature regime in the nest of Long-legged Buzzard ranged from 35.5-39.0°C (max) and 26.0-31.0°C (min). This demonstrates the similarity of temperatures during the final stages of incubation and early stages of chick-brooding in the nests of two birds of prey with similar ecological requirements in the southern Balqash region.



**Figure 4.** Logger iButton DS1922L in the nest of Saker with three chicks and unfertilized egg, 19 April 2015. Photo: A. Zhatkanbayev

Using camera traps (Reconyx PC900 Professional), I found that female Saker ceased brooding the chicks at night 11 days after the last chick hatched. By this time (21/22 April) the air temperature at night did not fall below 23°C. However, on from 19-21 April, during a



**Figure 5.** Temperature regime in Saker nest with three downy chicks and one egg on 11 April 2015 (08:49-23:49)

cold spell when the air temperature at night did not rise above 7-15°C, the female roosted in the nest, at least partially brooding her downy chicks.



**Figure 6.** Female Saker bringing prey to nestlings a few days before they fledged from the nest 13 June 2013.

## Discussion

It seems that my breeding records document the recent colonisation of the geographical region of Southern Balqash and the Ile River Delta by breeding Sakers. This illustrates the rather broad ecological plasticity of the species for adaptation to previously unoccupied nesting areas. Also, to some extent, it can serve as evidence of what is happening as regards an increase in the number of breeding pairs of Saker in the southeast of Kazakhstan. This phenomenon may be due, at least in part, to the annual release of falcons under the Sheikh Zayed Falcon Release Programme, administered by Abu Dhabi falconers. These releases occur with the approval and under the supervision of





Figure 7. Fledglings after leaving the nest, 30 May 2015.

the Committee for Forestry and Wildlife Facilities of the Ministry of Agriculture of the Republic of Kazakhstan. Possibly, some of the released falcons able to adapt and integrate into the local environment and began to explore new local habitats.

Furthermore, there is a natural increase in the number of Sakers in the southeast of Kazakhstan. With this increasing number there has emerged a trend to colonize new habitat and breeding pairs may explore novel habitats with a rich food supply i.e., Great Gerbil, the main prey of Sakers in southeast of Kazakhstan. There are existing nesting structures of birds of prey and Brown-necked Raven in the region alongside the abundant food supply during all seasons.

Taking into account the uneven distribution of Saker nesting sites in the deserts of the southern Balqash region, the local population presumably does not exceed 12-15 pairs. However, population trend for breeding Sakers in this desert region is thought to be increasing. Meanwhile, there is still a high threat to this species from poaching by national and internationally based trappers. Consequently, the positive trend for breeding Sakers in this geographical region remains in the balance.

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### Vultures poisoned at Kruger National Park, South Africa

Two lions and over 100 vultures in South Africa's Kruger National Park died after eating the poisoned carcass of an elephant, suggesting a new poaching trend in the heavily-guarded reserve.

"It seems poachers have resorted to wildlife poisoning in the national parks and other protected areas in Southern Africa," Glenn Phillips, the park's managing executive, said in a statement.

Initial investigations showed the elephant was shot in the head, its tusks removed and its carcass laced with poison. Two lions, 110 white-back vultures and two jackals then died after feeding on the poisoned carcass.

Poisoning of wildlife has occurred at a lower level in South Africa compared to its neighbours Zimbabwe and Mozambique. In Zimbabwe, more than 370 elephants have died after being poisoned over the past two years, with the deaths blamed on poachers. Last year, an elephant, four African lions and 46 vultures also died from poisoning in the Kruger National Park.

### Africa's vultures are sliding towards extinction warns BirdLife

Six of Africa's 11 vulture species are now at a higher risk of extinction, according to the latest assessment of birds carried out by BirdLife International for the IUCN Red List of Threatened Species.

The main causes of the drop in African vulture populations are thought to be indiscriminate poisonings, where the birds are drawn to poisoned

baits, use of vulture body parts in traditional medicine, and deliberate targeting by poachers, as the presence of vultures can alert authorities to illegally killed big game carcasses.



Dr Julius Arinaitwe, BirdLife International's Africa Programme Director, said "As well as robbing the African skies of one of their most iconic and spectacular groups of birds, the rapid decline of the continent's vultures has profound consequences for its people – as vultures help stop the spread of diseases by cleaning up rotting carcasses. However, now we are becoming aware of the sheer scale of the declines involved, there is still just enough time for conservationists to work with law-makers, faith-based organisations, government agencies and local people, to make sure there is a future for these magnificent scavengers."





### **DNA vaccines encoding the envelope protein of West Nile virus lineages 1 or 2 administered intramuscularly, via electroporation and with recombinant virus protein induce partial protection in large falcons (*Falco* spp.)**

Fischer D, Angenvoort J, Ziegler U, Fast C, Maier K, Chabierski S, Eiden M, Ulbert S, Groschup MH, Lierz M.

2015. *Veterinary Research* 46: 87.  
DOI: 10.1186/s13567-015-0220-1

As West Nile virus (WNV) can cause lethal diseases in raptors, a vaccination prophylaxis of free-living and captive populations is desirable. In the absence of vaccines approved for birds, equine vaccines have been used in falcons, but full protection against WNV infection was not achieved. Therefore, two DNA vaccines encoding the ectodomain of the envelope protein of WNV lineages 1 and 2, respectively, were evaluated in 28 large falcons. Four different vaccination protocols were used, including electroporation and booster-injections of recombinant WNV domain III protein, before challenge with the live WNV lineage 1 strain NY99.

Drug safety, plasmid shedding and antibody production were monitored during the vaccination period. Serological, virological, histological, immunohistochemical and molecular biological investigations were performed during the challenge trials. Antibody response following vaccination was low overall and lasted for a maximum of three weeks. Plasmid shedding was not detected at any time. Viremia, mortality and levels, but not duration, of oral virus shedding were reduced in all of the groups during the challenge trial compared to the non-vaccinated control group.

Likewise, clinical scoring, levels of cloacal virus shedding and viral load in organs were significantly reduced in three vaccination groups. Histopathological findings associated with WNV infections (*meningo-encephalitis*,

*myocarditis, and arteritis*) were present in all groups, but immunohistochemical detection of the viral antigen was reduced.

In conclusion, the vaccines can be used safely in falcons to reduce mortality and clinical signs and to lower the risk of virus transmission due to decreased levels of virus shedding and viremia, but full protection was not achieved in all groups.

### **Host-specific exposure and fatal neurologic disease in wild raptors from highly pathogenic avian influenza virus H5N1 during the 2006 outbreak in Germany**

van den Brand JMA, Krone O, Wolf PU, van de Bildt MWG, van Amerongen G, Osterhaus ADME, Kuiken T.

2015. *Veterinary Research* 46: 24.  
DOI: 10.1186/s13567-015-0148-5

Raptors may contract highly pathogenic avian influenza virus H5N1 by hunting or scavenging infected prey. However, natural H5N1 infection in raptors is rarely reported. Therefore, we tested raptors found dead during an H5N1 outbreak in wild waterbirds in Mecklenburg-Western Pomerania, Germany, in 2006 for H5N1-associated disease. We tested 624 raptors of nine species: common buzzard (385), Eurasian sparrowhawk (111), common kestrel (38), undetermined species of buzzard (36), white-tailed sea eagle (19), undetermined species of raptor (12), northern goshawk (10), peregrine falcon (6), red kite (3), rough-legged buzzard (3), and western marsh-harrier (1)—for H5N1 infection in tracheal or combined tracheal/cloacal swabs of all birds, and on major tissues of all white-tailed sea eagles. H5N1 infection was detected in two species: common buzzard (12 positive, 3.1%) and peregrine falcon (2 positive, 33.3%). In all necropsied birds (both peregrine falcons and the six freshest common buzzards), H5N1 was found most consistently and at the highest concentration in the brain, and the main H5N1-associated lesion was marked non-suppurative encephalitis. Other H5N1-associated lesions occurred in air sac, lung, oviduct, heart, pancreas, coelomic ganglion, and adrenal gland.

Our results show that the main cause of death in H5N1-positive raptors was encephalitis. Our results imply that H5N1 outbreaks in wild waterbirds are more likely to lead to exposure to and mortality from H5N1 in raptors that hunt or scavenge medium-sized birds, such as common buzzards and peregrine falcons, than in raptors that hunt small birds and do not scavenge, such as Eurasian sparrowhawks and common kestrels.

## Low prevalence of blood parasites in a long-distance migratory raptor: the importance of host habitat

Gutiérrez-López R, Gangoso L, de la Puente JM, Fric J, López-López P, Mailleux M, Muñoz J, Touati L, Samraoui B, Figuerola J.

2015. *Parasites & Vectors* 8:189  
DOI: 10.1186/s13071-015-0802-9

The low prevalence of blood parasites in some bird species may be related to the habitats they frequent, the inexistence of the right host-parasite assemblage or the immunological capacity of the host. Here, we assess the parasite load of breeding populations of Eleonora's falcon (*Falco eleonora*), a medium-sized long-distance migratory raptor that breeds on small isolated islets throughout the Mediterranean basin and overwinters in inland Madagascar. We examined the prevalence and genetic diversity of the blood parasites belonging to the genera *Plasmodium*, *Haemoproteus* and *Leucocytozoon* in Eleonora's falcon nestlings from five colonies and in adults from two colonies from nesting sites distributed throughout most of the species' breeding range. None of the 282 nestlings analysed were infected by blood parasites; on the other hand, the lineages of *Plasmodium*, *Haemoproteus* and *Leucocytozoon* were all found to infect adults. Our results support the idea of no local transmission of vector-borne parasites in marine habitats. Adult Eleonora's falcons thus may be infected by parasites when on migration or in their wintering areas. The characteristics of marine environments with a lack of appropriate vectors may thus be the key factor determining the absence of local transmission of blood parasites. By comparing the parasite lineages isolated in this species with those previously found in other birds we were able to infer the most likely areas for the transmission of the various parasite lineages.

## Clarifying subspecies of Peregrine Falcons along the Lost Coast of Alaska

Lewis SB, Kissling ML.

2015. *Journal of Raptor Research* 49:367-375. DOI:10.3356/rapt-49-04-367-375.1

The concept of subspecies is an important tool to help categorize and conserve biodiversity; thus, delineating the range of subspecies can have important management and conservation implications. The Peregrine Falcon (*Falco peregrinus*) is a widespread species that occurs throughout North America, where three subspecies are recognized: *F. p. anatum*, *F. p. pealei*, and *F. p. tundrius*. In Alaska, all three subspecies breed and

their general distributions during the breeding season are well documented. However, the limits of their distributions were unclear or unconfirmed, especially those of *F. p. anatum* and *F. p. pealei* along the Lost Coast in the northeastern Gulf of Alaska. We describe plumage, morphology, and/or movements of Peregrine Falcons known to have nested ( $n = 6$ ) or hatched ( $n = 3$ ) within the Lost Coast and used this information to determine their subspecific group. For all nine birds, we found these characteristics to be consistent with *F. p. anatum*. Our results underscore the importance of delineating geographic range and distribution of subspecies prior to environmental catastrophes and to ensure reliable interpretation of species status and trends. We believe this type of life-history and demographic information will become even more valuable as the effects of a changing climate are realized.

## Gyr Falcon Home Ranges and Movements on the Yukon-Kuskokwim Delta, Alaska

Eisaguirre JM, Booms TL, Schempf PF, Lewis SB.

2016. *Journal of Raptor Research* 50:109-114.  
DOI:10.3356/rapt-50-01-109-114.1

Adult gyrfalcons have not been tracked with satellite telemetry in continental North America, leaving a substantial gap in our knowledge of the biology of this species. We tracked two adults and two female fledglings with satellite transmitters on their nesting sites in the Yukon-Kuskokwim Delta, Alaska, between 2004 and 2006. Mean breeding and nonbreeding season adult ranging areas were 521 km<sup>2</sup> and 330 km<sup>2</sup> respectively (95% kernel estimates), although there was a substantial variation and overlap between individuals.

Our estimates of the size of the home range of adults were similar to those documented for female gyrfalcons in western Greenland during the breeding season, but were much smaller than those documented in the same place in the non-breeding season. After leaving the nest, fledglings remained 56 days in the natal area, which was consistent with previous studies. Because of recent findings on the effects of the transmitters in gyrfalcons, little additional information on foraging areas and movements of this species will be available until monitoring methods improve considerably.



## تكاثر صقر (الغزال) الحر في دلتا نهر إيلي، كازاخستان

التاي جاتكانباييف

الارتباط: معهد علم الحيوان، لجنة العلوم، وزارة التعليم والعلوم، جمهورية كازاخستان

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تقع دلتا نهر إيلي في المنطقة الصحراوية إلى الجنوب من بحيرة بلقاش في جنوب شرق كازاخستان. لم يسبق تسجيل صقر الشاهين كنوع متكاثر في دلتا نهر إيلي وكل المنطقة الصحراوية جنوب بلقاش. شوهد أول تكاثر لصقر الغزال هنا في عام 1998؛ تم العثور على زوجين يتكاثران في أعشاش للصقر الحوام طويل الأرجل *Buteo rufinus* في حوض الأكلول إلى الشرق من بحيرة بلقاش. خلال دراساتي الميدانية في 2013-2015 وجدت مجموعة جديدة من صقور الغزال المتكاثرة، ووثقت سجلاتي استيطان حديث لصقور الغزال المتكاثرة في المنطقة الجغرافية جنوب بلقاش ودلتا نهر إيلي. يدل هذا على مرونة بيئية واسعة للنوع للتكيف مع مناطق تعشيش غير مأهولة سابقا. يمكن أيضا، وإلى حد ما، أن يكون بمثابة دليل على ما يحدث فيما يتعلق بالزيادة في عدد أزواج صقر الغزال المتكاثر في جنوب شرق كازاخستان. قد تعود هذه الظاهرة، جزئيا على الأقل، إلى الإطلاق السنوي للصقور في إطار برنامج الشيخ زايد لإطلاق الصقور، الذي يديره صقارو أبو ظبي. علاوة على ذلك، هناك زيادة طبيعية في عدد طيور الغزال في جنوب شرق كازاخستان. برز مع هذا العدد المتزايد اتجاه للاستيطان في موانئ جديدة وقيام الأزواج المتكاثرة باستكشاف موانئ مبتكرة تتوفر فيها إمدادات المواد الغذائية الغنية أي الجربوع الكبير، الفريسة الرئيسية لصقر الغزال في جنوب شرق كازاخستان. توجد في المنطقة بُنى تعشيش للطيور الجارحة وللغراب بُنى العنق في المنطقة، إلى جانب إمدادات غذائية وفيرة في جميع المواسم. عند الأخذ بعين الاعتبار التوزيع غير المتكافئ لمواقع تعشيش صقر الغزال في صحراء المنطقة الجنوبية لبلقاش؛ يفترض أن الأعداد المحلية لا تتجاوز 12-15 زوجا. إلا أن توجهات أعداد صقر الغزال المتكاثرة في هذه المنطقة الصحراوية في تزايد مستمر. في الوقت نفسه، لا يزال هناك تهديد كبير لهذا النوع من الصيد الجائر من قبل صيادو الفخاخ محليا وعلى الصعيد الدولي. نتيجة لذلك، فإن التوجه الإيجابي لتكاثر صقر الغزال في هذه المنطقة الجغرافية يبقى في الميزان.

### المصطلحات المحلية لطبوغرافيا النسر الذهبي للصيد بالنسور في المجتمع الكزخي الألطي

د. تاكوياسوما

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تعكس المصطلحات والتصنيفات المحلية في الصيد بالنسور في المجتمع الكزخي الألطي اعترافا مميزا وتصنيفا ونظام تسمية يقوم على أساس الفن والمعرفة التقليدية. قام كبار صيادو النسور بتطوير مصطلحات محلية لأجزاء جسم وأنماط ريش النسور الذهبية. أقوم هنا ببساطة بتقديم تقرير لهذه المصطلحات المحلي المصطلحات لطبوغرافيا النسر.



## أنشطة علمية في مشاريع الصقور أنجزت في 2015 بالنيابة عن هيئة البيئة - أبوظبي

أندرو ديكسون

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رُكزت المشاريع البيئية لهيئة البيئة - أبوظبي في 2015 على الأنواع ذات الأهمية الثقافية للصقارة العربية أي صقور الغزال (الحر) والشاهين والسنقر، وذلك من خلال أعمال حقلية جرت في أربع دول: منغوليا والصين وروسيا وبلغاريا إلى جانب مشروع موازي في الصفات الجينية يبحث في جينوم والصفات الجينية لكل من هذه الأنواع.

### أبحاث وإدارة الصقور لصقور الغزال (الحر) في منغوليا

سجلنا في عام 2015 وجود 589 صقور غزال متكاثرة في الأعشاش الاصطناعية التي أنشأتها الهيئة في منغوليا. نجح 73% من صقور الغزال في الأعشاش الاصطناعية في إنتاج فرخ واحد على الأقل، بمعدل 3.0 طيور صغيرة مرتيشة في كل عش ناجح. أنتج تكاثر صقور الغزال في الأعشاش الاصطناعية في تقديرنا 1,402 فرخا.

مقارنة بالعام السابق؛ انخفض عدد صقور الغزال المتكاثرة في الأعشاش الاصطناعية بنسبة 21%. وكان هذا هو أول موسم انخفضت فيه أعداد صقور الغزال المتكاثرة منذ أن أقيمت الأعشاش الاصطناعية في عام 2010. ولم يقتصر الأمر على أن عدد الأزواج المتكاثرة كان أقل مما كان عليه في السنوات السابقة، ولكن نجاح التعشيش قد انخفض أيضا إلى جانب عدد الفراخ المنتجة في الأعشاش الناجحة. قد يشير انخفاض الأعداد في عام 2015 إلى انخفاض في أنواع الفراش المهمة مثل فأر الحقل برانند والجربوع المنغولي.

### برنامج الروابط المدرسية

يدار برنامج الروابط المدرسية، بالتوازي مع مشاريع هيئة البيئة - أبوظبي البحثية في الصقور، كوسيلة لتطوير التواصل مع المجتمع والتعليم. يربط البرنامج مدارس في البلدان التي تجري فيها بحوث الصقور مع المدارس الدولية، وذلك باستخدام البحوث كأرضية مشتركة للتعرف. الصقارة هي ممارسة واسعة الانتشار ومهمة ثقافيا في أجزاء كثيرة من العالم، وتتضمن جوانب من التراث والتاريخ والأدب والعلوم، مما يجعلها موضوعا مثاليا للبرامج التعليمية لكونها تمثل قاسما مشتركا يمر عبر مجموعة متنوعة من الثقافات. لدينا حاليا أطفال تتراوح أعمارهم بين 6-15 سنة يشاركون في البرنامج ويدرسون في 45 مدرسة في 13 دولة. انضمت مدارس جديدة للبرنامج في عام 2015 من الإمارات العربية المتحدة وبلغاريا والنمسا والنرويج والبرتغال وروسيا والبرنامج. انظر موقع برنامج الروابط المدرسية [www.schoollinksprogramme.org](http://www.schoollinksprogramme.org).

### إعادة إطلاق صقور الغزال (الحر) في بلغاريا

يهدف مشروع إعادة الإطلاق الذي يجري تنفيذه في بلغاريا لاستعادة صقور الغزال كنوع متكاثرة البلاد. يشمل هذا المشروع إطلاق صقور غزال صغيرة أكثر في الأسر في موقع "تدريب بري" في مساحات زراعية في وسط بلغاريا. ضمت مجموعة التكاثر في مركز منظمة البلقان الأخضر لتأهيل وإكثار الحياة الفطرية خمسة أزواج من صقور الغزال، وضعت 24 بيضة وأنتجت 21 فرخا. أطلق 19 منها في موقع التدريب وتم الإبقاء على اثنين كمصدر إكثار في المستقبل. أظهرت لنا نتائج الدراسة الأولية أن معدل البقاء على قيد الحياة بعد الانتشار كان أعلى للطيور التي ظلت لفترات أطول في موقع التدريب بعد الترييش، لذلك كان هدفنا الاحتفاظ بالصغار لمدة 28 يوما على الأقل بعد الترييش. حققنا هذا الهدف وكانت معدلات البقاء على قيد الحياة خلال 40 يوما سابقة للانتشار عالية جدا وبلغت 99%.

### أبحاث في صقور الشاهين والجبير (السنقر) في شمال يوراسيا:

واصلت صقور الشاهين التي تحمل رسائل الإشارة إرسال إشارات تدل على مواقعها في أماكن تكاثرها في شمال يوراسيا. قمنا في 2105 بتتبع 9 شاهين لكن اثنين منها كانت ما زالت ترسل الإشارات في نهاية العام؛ ثبتت الرسائل على كلا هذين الصقورين في أسفل امتداد نهر كولوما في 2013. بلغ أحدها في نهاية العام في مجال تشيته في مناطق زراعية شمال بانكوك في تايلاند، بينما احتل الآخر مجال تشيته في ميناء بحري على الساحل الغربي لكوريا الشمالية.

واصلنا في عام 2015 أخذ العينات تمهيدا لدراسة الجينوم للأعداد العالمية لصقور الجبير. جرى أخذ العينات بالتعاون مع عدد من الشركاء في روسيا. جمعنا عينات الدم من مواقع التعشيش في شبه جزيرتي كولا وبامال في المناطق القطبية الروسية. في الشرق الأقصى الروسي، قام فريق الدراسة لدينا بتفقد تسعة من مناطق الجبير، ولكن واحدا فقط منها كان به تواجد ولم يحدث فيه أي تكاثر.

### إدارة الأراضي وصقور الغزال (الحر) في هضبة شينجهاي-التبتية في الصين

قمنا في دراساتنا الحقلية بأعمال مسح لحيوان بيكا الهضبات جرت على عدة مقاييس مساحية. كانت أعلى مستويات الكثافة هي في المناطق ذات غطاء عشبي يزيد عن 50%. في مسح لـ 186 قطع أراضي فوق مستوى 3000م تألف 72% منها من أراضي مراعي غطاء عشبي يزيد عن 50%. في دراسة أخرى، أجريت بمقاييس أكثر دقة، قمنا بدراسة مجموعة مختلفة من طرق الإمساك ووضع العلامات كعمل تمهيدي لدراسة محتملة لإعادة الإمساك.

### الأبحاث الجينية على الصقور

حصلنا على تسلسل الجينوم لثلاثين مجموعة صقور شاهين متكاثرة في يوراسيا القطبية: في الغرب والوسط والشرق. حددنا نظاما للمؤشرات الجينية يمكن استخدامه لتعيين أفراد المجموعات من أصل غير معروف. الآن، وبفضل استخدام نظام العلامات هذا، بات بإمكاننا أن نحدد منطقة أصل طيور الشاهين المهاجرة التي تستخدم في الصقارة العربية. اكتشفنا أيضا تمييزات مستوى الجينوم في أعداد الشاهين المتكاثرة بين المجموعات الثلاثة. نقوم بإنشاء قاعدة بيانات الحمض النووي لصقور الغزال (الحر) التي تتكاثر في الأعشاش الاصطناعية في منغوليا. للقيام بذلك، قمنا بتحديد الواسمات الوراثية بالغة تعدد الأشكال (N = 20) من جينوم صقور الغزال. لقد استخدمنا هذه الواسمات بنجاح للتعرف على الأفراد التي تتكاثر في شبكة واحدة من الأعشاش الاصطناعية خلال فترة 2011-2013. تمكنا هذه الواسمات من أن نعرف متى تعود الطيور البالغة الفردية للتكاثر في كل عام،



المركز الدولي للطيور الجارحة لإنشاء أنشطة الإكثار في الأسر لصون نسور شبه القارة الهندية. هناك أيضا العديد من المشاريع العاملة لصون أنواع الطرائد المهمة للصقارة وموائلها، مثل الحبارى والأرنب الصحراوي.

من المهم ألا تتجاهل أو تنفي نشرة إخبارية مثل **فالكو** المشاكل التي تنشأ بسبب بعض تجاوزات الصقارة العربية، ولكن يجب علينا أيضا تسجيل الجهود الكبيرة التي يبذلها الصقارون في جميع أنحاء العالم للمساعدة في إنقاذ الطيور التي يحبونها والبيئات التي تعيش فيها.

**أندرو ديكسون**  
المحرر، نشرة **فالكو** الإخبارية

#### دعوة لتلقي المساهمات

يسعدنا أن يقوم المزيد من المشتركين في مجموعة الشرق الأوسط لأبحاث الصقور MEFRG بمشاطرتنا بأرائهم وخبراتهم ومعارفهم من خلال **فالكو**. يسعدنا تلقي المقالات المكتوبة باللغتين العربية والإنجليزية التي تتعلق بالمواضيع المدرجة في الصفحة المقابلة.



أصبح لدينا الآن صفحة لمجموعة الشرق الأوسط لأبحاث الصقور MEFRG على فيسبوك. موقع الصفحة مقفل وحصري للأعضاء فقط. للانضمام يرجى استخدام الرابط التالي:

<https://www.facebook.com/groups/835021173290084/?ref=bookmarks>

اضغط على زر 'Join Group' ليقوم مسؤول الموقع بإضافتك إلى قائمة الأعضاء. يمكن لجميع الأعضاء نشر تعليقاتهم على الصفحة بموافقة مسؤول الموقع.

الصون أمر جوهريّ لمصلحة ومستقبل رياضة الصقارة. صون أنواع الطرائد والصقور البرية وموائلها ضروري للتقاليد الثقافية للصقارة لكي يتاح للأجيال القادمة ممارستها. كان الصقارون العرب في الماضي، يستخدمون في الأساس صقور الشاهين والغزال (الحر) التي كانوا يسكنونها بأنفسهم عند مرورها في الخريف. كانوا بعد الصيد بهذه الطيور خلال الشتاء لتوفير الغذاء، يعيدون إطلاقها في البرية في فصل الربيع لكي تعود إلى الأراضي الخصبة في أماكن بعيدة مثل المنطقة القطبية الشمالية الروسية (في حالة الشواهين) والسهوب الأوراسية (في حالة صقر الغزال). لقد أظهر طول أمد هذه الممارسة التقليدية استدامته.

إذا انتقلنا إلى يومنا هذا فنسرى عددا من التغيرات التي طرأت على الصقارة العربية الحديثة. يحصل صقارو دول الخليج الآن على طيورهم بشكل أساسي من مرّبي الصقور أو التجار. يمكن لمرّبي الصقور إنتاج الصقور والأنواع الهجينة التي لم تكن تستخدم على نطاق واسع في الماضي، كصقر السنقر مثلا. يمكن لتجار الصقور الحصول عليها أيضا من صيادي الفخاخ، الذين يعملون عبر القارات، وبصيديون الصقور بشكل خاص في جنوب صحراء الكبرى الأفريقية وفي شمال أفريقيا والشرق الأوسط وآسيا الوسطى وروسيا. الطلب على الصقور في دول الخليج كبير جدا، مما أدى إلى تجارة قانونية في الطيور المهجنة وإلى تجارة دولية غير مشروعة إلى حد كبير في الصقور البرية. وقد أدى هذا التحويل للصقور البرية إلى سلعة إلى مخاوف كبيرة بشأن تأثيره على اصطياد الأنواع البرية.

يتفاوت تأثير صيد أنواع الصقور بالفخاخ بين الأنواع المختلفة وعبر المناطق الجغرافية. إضافة لذلك، فإن اصطياد الصقور لرياضة الصقارة هي مجرد واحد من عدد من التهديدات التي تواجه أنواع الصقور مثل الشاهين والسنقر والصقر الحر (الغزال). إن فقدان الموائل والطرائد كنتيجة مباشرة وغير مباشرة للنشاط البشري، والتلوث، وتغيرات المناخ تشكل جميعها مصدر قلق حقيقي من أثارها المترتبة على الأنواع على نطاق عالمي. هناك أيضا تهديدات محددة بشكل كبير ومنها الصعق بالتيار الكهربائي المتوسط والمنخفض الجهد على خطوط توزيع الكهرباء، والاضطهاد، لحماية الفرائس.

نقترب مع انتهاء موسم الصقارة من بداية موسم تكاثر الصقور والفترة التي تنشط فيها البرامج الميدانية التي تهدف إلى الحفاظ على الصقور. نستعرض في هذا العدد من **فالكو** المبادرات والبحوث ومبادرات الصون والتعليم التي أجرتها هيئة البيئة-أبو ظبي في عام 2015. إن القيمة الثقافية للصقارة في الإمارة هي الدافع الرئيس لبرنامج العمل هذا. ستقوم الهيئة أيضا مكتب أبو ظبي لاتفاقية الأنواع المهاجرة، والذي يضم وحدة تنسيق مذكرة التفاهم بشأن الجوارح؛ وهي مذكرة ذات فائدة كبيرة في صون أنواع الصقور وغيرها من الطيور الجارحة المهاجرة.

يشكل الاهتمام بالصقور أساس العديد من مشاريع الصون عبر العالم، من المشاريع التي تركز على الأنواع مثل مشروع لإعادة إنشاء أعداد الشاهين التي تعيش في الأشجار في أوروبا، ومجموعة واسعة من المشاريع الموجهة للطيور الجارحة التي ينفذها صندوق الشاهين. يمتد الاهتمام بالصقارة أيضا إلى نقل المهارات كالإكثار في الأسر والحضن الاصطناعي وتدريب صغار الطيور وإعادة تأهيل مشاريع الصون، كما يشاهد في نشاط



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