



FALCO

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MEFRG Objectives:

To provide:

A central body for the co-ordination of research activities related to falcons and falconry.
A common forum for the exchange of information and for promoting collaborative research programmes.

To promote:

Research on health and disease in falcons, falcon moulting in the Middle East, falcon nutrition, domestic breeding.
Field studies on falcon migration, taxonomy, morphometrics, reproductive biology and behaviour.
Improved management conditions for captive falcons through educational awareness programmes.
Greater understanding of falconry as a part of Arab cultural heritage.

To hold:

International workshops and conferences on veterinary aspects, falcon biology topics, falconry and conservation issues.

To publish:

Papers on aspects of falcon conservation, falcons and falconry.
A biannual newsletter/journal containing contributions on medical, biological and conservation topics of common interest, new developments and recent medical advances.

Membership:

Membership is open to any veterinary surgeon, biologist, conservationist or falconer working in the Middle East or any other person interested and contributing in the fields of medical, biological and conservation aspects of falcons and falconry worldwide.

Photographs:

Front Cover: Normal ventro-dorsal radiograph of a healthy falcon.

Falco is published biannually and contains papers, reports, letters and announcements submitted by Middle East Falcon Research Group Members. Contributions are not refereed, although every effort is made to ensure information contained within FALCO is correct, the editors cannot be held responsible for the accuracy of contributions. Opinions expressed within are those of the individual authors and are not necessarily shared by the editors

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Inside Cover: Adult female Peregrine Falcon, trapped on the 3rd December 1972 (wt. 1,141 g) on the Mian Kaleh Peninsula, northeast of Sari (36.33N 53.06E), Iran at the southeast corner of the Caspian Sea. Kent Carnie.

Back Cover: Autumn migration pathways of Peregrines breeding in the Eurasian Arctic.

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Editorial

In December 2011 the Emirates Falconers Club and the Abu Dhabi Authority for Culture & Heritage are hosting the Third International Festival of Falconry in Al Ain, Abu Dhabi to celebrate the recognition of falconry as a Living Cultural Heritage by UNESCO. Falconry was officially designated on the UNESCO Representative List of Intangible Cultural Heritage of Humanity in November 2010. The profile of falconry in the Gulf States is very high, both for its important cultural value and for its potential impact on wild falcons and their quarry species (especially Houbara).

This dichotomy is reflected in the way falconry, especially Arabic falconry, is perceived and treated by various international conventions and organizations. On the one hand UNESCO recognizes the cultural importance of falconry, yet on the other hand many conservationists believe that Arabic falconry is the main driving force behind population declines of Saker Falcons and Houbara Bustards. Consequently, there is a need to tightly regulate the trade in falcon species through CITES, the aim of which is to ensure that international trade does not threaten the survival of the species in the wild. Trade in wild-taken Peregrines and Gyrfalcons is currently not permitted by CITES. Many conservationists want the Saker to join these other important falconry species on Appendix 1 of CITES. A proposal from the European Union to list the Saker on Appendix 1 of the Convention of Migratory Species would have the same effect, though Mongolia, as the only country currently engaged in wild-Saker trade, is to be exempted.

In this issue of *Falco* we provide a summary of the research and conservation work on wild falcons undertaken on behalf of the Environment Agency-Abu Dhabi (EAD). This work, funded by a government agency in the Emirate of Abu Dhabi, but undertaken in other countries, underlines the international commitment of the EAD in meeting its mission “to protect and conserve the environment for people’s well-being and a better life for all”. The work described in this issue of *Falco* was undertaken by International Wildlife Consultants, working with a range of partner organizations in several countries.

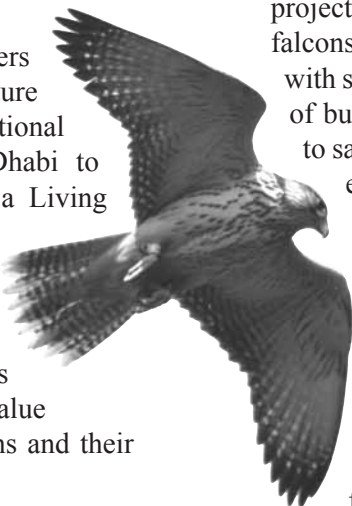
The National Avian Research Center (NARC) is a centre within EAD that undertakes research and conservation work on Houbara Bustards (through the International Fund for Houbara Conservation, IFHC) and falcons. Also in this issue, the IFHC present the results of a survey of falconers from the Gulf States that assessed their knowledge about the ecology of Houbara Bustards. The objective of these Abu Dhabi Emirate-funded

projects is to promote the conservation of bustards and falcons and to reconcile the tradition of Arab falconry with sustainable use of resources throughout the range of bustards and falcons. The broader aim of EAD is to save falcons, bustards and other bird species from extinction, as demonstrated by its involvement with international bodies such as IUCN and CMS and support for projects like Arkive.

The objectives of the Middle East Falcon Research Group include reporting on field studies of falcons and to promote a greater understanding of falconry and its cultural heritage. To this end we present two papers on falcons in Iran, one detailing with the status of the Barbary Falcon (*Falco pelegrinoides*) in the country and the other a historical account of falcon trapping in the country. In addition Jevgeni Shergalin introduces images of falconry in Afghanistan as a way of documenting the ancient tradition of this sport in a country where there is still very little information is available to a wider audience.

The Barbary Falcon is an interesting taxonomic case. Some authorities regard the Barbary Falcon as being a subspecies of the Peregrine (*Falco peregrinus*), whilst others consider it to be a separate species, which itself can be sub-divided into two sub-species: the western nominate *pelegrinoides* form and the eastern *babylonicus* form. In falconry circles, the latter is often considered distinct and is given the common name Red-naped Shaheen. All of these taxa interbreed freely in captivity, producing fertile offspring. Unfortunately, there is little information from wild populations to provide a definitive conclusion regarding reproductive isolation between Peregrines and Barbary Falcons, whilst the distinctiveness of Peregrines, Barbary Falcons and Red-naped Shaheens in Iran, where all three taxa may breed, requires further detailed study.

This issue is rather short on veterinary topics as it coincides with one of the co-editors of *Falco* (Tom Bailey) moving from his veterinary post in Dubai to take up a position in falcon aviculture in the UK. Nevertheless, we have reproduced a series of images on the radiographic anatomy of falcons that were included in a larger article published previously by Diana Quillquini and co-authors in the Exotic DVM (2008, Vol. 10.1). It is hoped that normal service will be resumed by the next issue and we request that veterinarians continue to submit articles to Tom Bailey at the address on the inside front cover.



Falconry in the Middle East: an assessment of falconers' ecological knowledge on Asian Houbara *Chlamaydotis macqueenii*

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Introduction

The Asian Houbara Bustard *Chlamaydotis macqueenii* (Fig. 1) is historically known in Arabian falconry as a highly preferred quarry for falconers in the Gulf Cooperation Council (GCC) region. Unfortunately, unregulated hunting, illegal trade and habitat destruction have all contributed to an important decrease of the wild population (Combreau et al. 2006). In response, the International Fund for Houbara Conservation (IFHC), through the National Avian Research Centre (NARC), has been committed to restore Asian Houbara numbers across its distribution range, which extends from southern parts of Mongolia to southern Arabia, through conservation breeding and release/reintroduction programmes.

In parallel with ecological research, IFHC has developed an educational strategy aiming to transmit scientific findings on Asian Houbara ecology to falconers as key stakeholders in the species conservation. To achieve this goal, several modes have been used including exhibitions, conferences, TV shows, newspaper articles and individual meetings all aiming to indoctrinate the falconer community with the notion of sustainable hunting. In this paper we summarize the key outputs of ecological knowledge of GCC falconers on Asian Houbara resulting from a comprehensive survey conducted in 2009.

Methods

A structured questionnaire in Arabic was randomly distributed to GCC falconers visiting the IFHC stand at the Abu Dhabi International Hunting & Equestrian Exhibition (ADIHEX) from 30th September to 3rd October 2009 (4 days). It was not statistically possible to determine the size of a representative sample for the falconer community in the GCC region mainly due to lack of records on falconer numbers. During the survey, no effort was made to bias falconer nationalities as the purpose was to obtain a random sample. After a series of demographic questions concerning age, education background and nationality, falconers were then questioned about their personal experience

with falconry (e.g. duration of falconry experience, falconry learning methods, numbers of falcons they possess, favourite quarry, hunting places and also if they are members of any falconers' clubs). To assess the falconers ecological knowledge of Asian Houbara, participants were asked six ecology-related questions including:

- 1) what is sustainable hunting?
- 2) what are the original breeding grounds of migratory Houbara wintering in the GCC region?
- 3) what are the types of Asian Houbara living in the GCC region?
- 4) what is the current global status of the wild population of Asian Houbara?
- 5) what is the most important factor threatening the Houbara population in the wild?
- 6) which of the distribution states have highest numbers of Asian Houbara?

All these six points were multiple-choice questions and falconers were tasked to select the most correct answer according to their personal knowledge about Houbara Bustard.



Figure 1. Asian Houbara (©IFHC)

Results

The questionnaire was filled-in by 113 falconers with a mean age of 32 years ± 10 [SD]; [range 16-65]. Almost half of the respondents (49%) had a university degree or higher, whilst 34% had a secondary certificate; 14% had elementary or middle school education and 4% of respondents were illiterate. UAE falconers represented 62% of respondents; followed by Saudis (15%), Kuwaitis (12%), Qataris (6%), Omanis (1%) and Bahrainis (1%). The other 3% of respondents did not specify their GCC country. Most of respondents (75%) learnt falconry through family, whilst 20% learnt through friends and 4% used self-learning methods. When asked about the numbers of falcons they possess, 58% of respondents had 2-4 falcons, 27% had one falcon, 9% had 5-9 falcons and 5% of respondents had ≥ 10 falcons. One percent of respondents possessed no

falcons. Most of respondents (76%) ranked Houbara Bustard as a favourite quarry, followed by Desert Hare *Lepus tibetanus* (17%) and Stone Curlew *Burhinus oedicephalus* (4%).

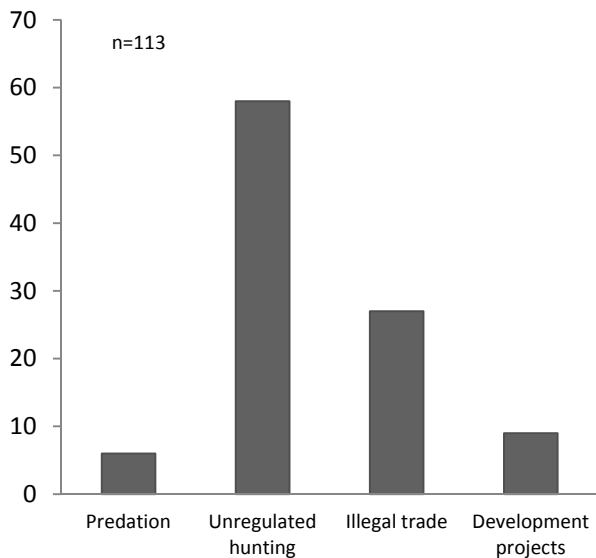


Figure 2. Respondents' perceptions of the main problems affecting Asian Houbara in the wild.

Ecological knowledge about Houbara

Sixty-five percent (65%) of respondents correctly stated that 'sustainable hunting occurs when Houbara numbers in the wild remain in a level more than those hunted', so had an idea of what sustainable hunting is. Almost half of the respondents (47%) stated that Asian Houbara wintering in GCC countries originate from Kazakhstan, whilst 40% thought that Houbara wintering in these countries come from Pakistan. Just over half of the respondents (55%) believed that GCC countries have solely the migratory race of Asian Houbara. Sixty-six percent (66%) of respondents thought that Houbara numbers in the wild are declining compared to 21% who believed that the numbers are increasing. When asked about the most important factor threatening Asian Houbara in the wild, almost half of respondents (58%) believed that unregulated hunting is the leading factor contributing to Houbara population decline (Fig.2). According to respondents, Pakistan, Kazakhstan and Iraq have respectively the highest numbers of Houbara populations in the wild (Fig.3).

Discussion

Considering the modern lifestyle in the GCC region, falconry is in fact an effective practice for linking the young generation to its old traditional and cultural roots (Allen 1980). Most of respondents tend to own 2-4 falcons, which is a finding consistent with a previous survey targeting UAE falconers, where most of the sampled respondents indicated that they had 2-4 falcons (Environment Agency-Abu Dhabi 2008). Houbara Bustard represents the most favourite quarry

for the majority of respondents. This might be related to phenotypic characteristics of this species including its bigger size compared to falcons and also its flight-related tactics, necessitating skilful falconry and a well trained falcon (Allen 1980; Remple and Gross 1993). The manoeuvring behaviour of the Houbara represents a challenging task that helps to develop desert skills of falconers, as well as making hunting it more enjoyable. Moreover, in the old days when food resources in Arabia were limited hunting Houbara was considered as a big catch for a falconer to meet his family needs for protein.

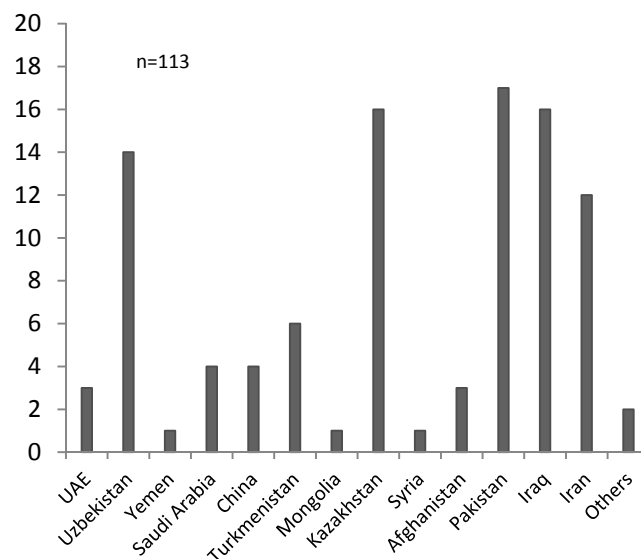


Figure 3. Respondents' ranking of Asian Houbara numbers across distribution states.

Acknowledging a possibly incomplete sampling across all the falconry community in this survey, our study shows that there is a gap between scientific findings and traditional knowledge of GCC falconers in certain aspects of Houbara Bustard ecology. Forty percent (40%) of respondents believe that the original breeding grounds of Asian Houbara migrating to the GCC region are Pakistan. In fact, NARC studies on the migration ecology of Asian Houbara have indicated that the Houbara population wintering in Arabia breed in Central Asia and China (Combreau *et al.* 2006). Almost half of respondents are not aware of the fact that GCC countries harbour both migratory and sedentary populations of Asian Houbara. Ecological surveys across Houbara range in the Arabian Peninsula indicate that some areas in the region do have resident populations; in the northern parts of Saudi Arabia (Seddon 1997), central desert of Oman (Gallagher and Woodcock 1980) and the eastern parts of Yemen (Judas *et al.* 2009).

With regard to the current global status of Asian Houbara, falconers' beliefs in this respect are consistent with scientific conclusions which indicate that the

current hunting level of Asian Houbara in most of its distribution range is unsustainable (e.g. Tourenq *et al.* 2005). In relation to Houbara population numbers per country, respondents ranked Pakistan (75%), Kazakhstan (54%) and Iraq (52%) to be on the top of the list. Kazakhstan is in particular a hotspot country for Houbara conservation as it hosts the majority of migratory breeding Houbara of Asia, as well as being a crossway for birds migrating to and from China (Combreau *et al.* 2006).

In conclusion, IFHC education strategy should invest more on educating falconers in aspects related to Asian Houbara migration ecology in particular. This will ensure that falconers' traditional knowledge on this species is enhanced in a way that can positively contribute to achieve its long-term hunting sustainability.

Acknowledgments

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Abu Dhabi sponsored research on falcons in 2011

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This article outlines the progress and developments of research projects on falcons that were administered by International Wildlife Consultants and sponsored by Abu Dhabi. These include a conservation management project for the Saker Falcon *Falco cherrug* in Mongolia, survey work on Sakers in Kazakhstan, preparatory work on a Saker reintroduction project in Bulgaria, a satellite telemetry study of migratory Peregrines in northern Russia and genetic analyses of Saker Falcons and Peregrines.

Mongolia: Artificial Nests for Saker Falcons

The 2011 breeding season was eagerly awaited after our teams from the Wildlife Science and Conservation Center (WSSC) had, in the previous autumn, completed the erection of a further 5000 artificial nests to add to our existing experimental grids of 250 nests. These 5000 artificial nests have been erected in grids within 20 administrative districts (250 nests in each district), distributed across a 730 x 230 km swathe of central Mongolia. The artificial nests are spaced at 1.5 km intervals and cover over 10,000 km² of the central Mongolian steppe. In May, five teams of surveyors travelled around the artificial nest grids to record occupancy by breeding birds of prey. Saker Falcons were the most frequent birds of prey found breeding in the artificial nests, with 200 egg-laying pairs recorded (compared to 177 Upland Buzzards, 171 Ravens and 83 Common Kestrels), giving an indication of the relatively healthy state of the population in central Mongolia. The number of Sakers nesting in each grid varied greatly with a maximum of 25 pairs nesting in one grid and three grids that held no Sakers at all. Our experience with the experimental grids indicates that the number of breeding Sakers at our artificial nests will increase over the next few years.

During the May nest visits, transect surveys were undertaken to count rodents and potential avian prey in each of the grids, and there was a positive relationship between the number of rodents and egg laying Sakers. Nesting success was high, with only 24

(12%) nest failures recorded and a mean brood size of 3.1 chicks at successful nests and over 600 nestlings were implanted with microchips. Two Sakers that bred at our artificial nests this year were produced at nests in our experimental grids in 2007 and 2009, with a four-year old male and a two year-year female that were breeding 75 km and 66 km from their natal site (but 83 km apart). Interestingly, though they fledged in different years, they both came from the same artificial nest with the same parents. Furthermore, we recorded one instance of long-range breeding dispersal where a female with a non-functioning satellite transmitter was found breeding 300-350 km from the breeding site where it was tagged in either 2009 or 2010, but unfortunately we weren't able to recapture this bird to remove the tag and identify which individual it was. However, we hope to be able to use genetic markers to identify this bird.



Photo 1. One of 200 artificial nests occupied by Saker

The project now supports three students undertaking Master's level degrees at the National University of Mongolia, each focussing on a specific aspect of the project. Sarangerel Ichinkhorloo is examining land use and land cover across the network of artificial nest grids, Amarkhuu Gungaa is investigating prey availability in relation to occupancy and breeding success, whilst Ariunzul Lhagvajav is studying the diet of breeding Sakers in our artificial nests. The project is also funding a PhD studentship at the University of Leicester (UK) for Choikhand Janchivlamdan to investigate the policy and regulatory framework surrounding the Mongolian Saker Falcon trade.

When our teams visited the artificial nest grids in May it was apparent that in some districts there was a serious problem with nest removal. In many cases both the nesting barrel and supporting pole had been removed,

in other cases just the barrel or the pole and sometimes it was only the bolts attaching the barrel to the pole that had been stolen! The poles can be used by local herders for building makeshift livestock stockades, the barrels can be used as store boxes and the bolts used for spare-parts on motorcycles. In addition to locals removing the artificial nests for their own use, some had been systematically removed to be sold to scrap metal merchants. Thefts of one kind or another accounted for 10% of the nests our teams had erected, in two districts over a third of the nests were stolen whilst in three other districts a quarter of the nests were stolen.

To counter the problem of nest removal by locals, we have stepped-up our information campaign by sending staff out to district centres to give public presentations on the project, we have involved locals in monitoring and maintaining nests and will engage with herders through the MSc project on land use. Most importantly, we are developing greater links between the project and local communities through a 'school link' project, which is currently being piloted between a school in Mongolia and a school in the UK, with plans to extend this to include a third school from Abu Dhabi. Teaching materials have been developed to cover the story of the artificial nest project, the importance of falcon conservation and the cultural heritage of falconry in the Gulf States, with links to curriculum areas relating to citizenship and cultural exchange. This, together with increased involvement of local communities in monitoring and maintaining the artificial nests, will serve to engender a greater sense of local ownership of the artificial nest grids. Ultimately, for the artificial nests to have a long-term future, local people must feel that the artificial nests have more value to them standing in the steppe than if sold to a scrap metal merchant.

We are not only working on issues at a local scale, we are also working at a national level to encourage the Mongolian government to adopt a harvest protocol that enables the age and sex of exported Sakers to be recorded, and to microchip all exported birds and record this information on the CITES export permits. The lack of any rigorous recording is a major concern for us in relation to the Mongolian Saker Falcon trade and it is something that needs to be rectified. Internationally, we have been promoting the potential role of the artificial nest project in not only establishing a sustainable harvest of Saker Falcons for falconry but also for the conservation of the species. We have promoted the project in a range of international forums, from CITES meetings to international conferences.

This project is being carried out under a 5-year MoU (2010-15) between the Ministry of Nature, Environment & Tourism, Mongolia and the Environment Agency- Abu Dhabi, and we are still at an early stage of the process in developing a sustainable harvest for Arabic falconry with benefits for Saker conservation and local people. Progress has been good but a lot of work still needs to be done.

Saker Falcon survey work in Kazakhstan

Dr. Anatoliy Levin, Laboratory of Ornithology, Institute of Zoology, Almaty has been undertaking annual surveys of breeding Saker Falcons in Kazakhstan since 1995 with funding from Abu Dhabi. Over this time he has witnessed a rapid and massive decline in the species, first in the south and east of the country and more recently in the north and the west. In many parts of Kazakhstan where the Saker was formerly common it is now practically extinct as a breeding species. The problems faced by Sakers are manifold and include electrocution, habitat change and associated losses in prey availability, but it is believed that the most important factor driving the decline is illegal trapping



Photo 2. Power line near Betpak-Dala desert

In 2011 Dr. Levin undertook a survey of the Saker Falcon breeding population in Central Kazakhstan working in areas of the Betpak-Dala desert (districts to the southwest of Lake Balkhash). The Saker Falcon population of this region was last surveyed in 2006 when a total 101 nesting sites were identified. In comparison, in 2011 only 45 nesting territories were found in the same region, representing a decline of 65% in 5 years.

This pattern of reporting declining breeding populations has been a defining feature of the repeat surveys

conducted in Kazakhstan. Most years a small number of falcon trappers are apprehended and prosecuted but not enough to discourage others from trying their luck. In Kazakhstan it is believed that falcon trapping is carried out by locals (probably in large numbers) who trap a few birds opportunistically, through to well-organised gangs who trap larger numbers of birds. To make matters more complicated there are suspicions that there is collusion in this process of trapping and trade from officials at various levels of government. Obtaining detailed information on the illegal trade process is not easy and biologists in Kazakhstan have only been able to document the shameful decline of the Saker in their country but have little opportunity to establish any conservation activities to halt or reverse this trend.

In order to raise awareness of the plight of the Saker Falcon within Kazakhstan, the Laboratory of Ornithology, Institute of Zoology will be undertaking scientific education programmes at universities and schools in Almaty and producing publicity materials for a wider public audience and media. In addition, materials related to falcon smuggling will be made available to customs officials. It is hoped that by increasing public awareness it may be possible to raise the profile of illegal trapping and trade with the government and to stimulate some effective response. The problem is not one of legislative deficiency but rather it is a problem of effective enforcement.

Reintroduction of the Saker Falcon in Bulgaria

Over the period 2006-10 Bulgarian ornithologists undertook surveys for breeding Saker Falcons in Bulgaria and developed a feasibility study for restoring the species in the country through reintroduction. The last Bulgarian Saker Falcon nest was found in 1998 and it is likely that the species no longer breeds in the country or, at best, breeds in very small numbers. There is currently a five-year EU Life+ project (2009-13) being implemented by the Bulgarian Society for the Protection of Birds (BSPB) for the Saker Falcon and Imperial Eagle, which includes an attempt restore the breeding population of Sakers in the country through the provision of artificial nests. In parallel, biologists at the Institute of Biodiversity and Ecosystems Research, Bulgarian Academy of Sciences, Green Balkans and International Wildlife Consultants (IWC) have embarked on preparatory work for a reintroduction project so that this alternative conservation strategy can be implemented, if required and if practical, at the end of the current EU Life+ project in 2014. The proposal to reintroduce Saker Falcons in Bulgaria has been

controversial and it is hoped that by this time we will have a better understanding of the efficacy of these two methods for restoring the breeding Saker population in Bulgaria.

Many successful reintroduction projects rely on the translocation of birds from healthy wild populations elsewhere. At present, it seems unlikely that young birds can be donated from existing European populations in the Pannonian Basin or Ukraine as there is little enthusiasm for this from conservationists in the potential source countries. Consequently, we have opted to use captive-bred Sakers, of European origin, as a potential source population for a reintroduction programme. In 2011 breeding pens have been constructed to receive captive-bred Saker Falcons at the Green Balkans Wildlife Rehabilitation and Breeding Centre in Stara Zagora and six young pairs now occupy their new home. Further pairs will be acquired as the preparations for reintroduction proceed. In addition to establishing breeding pens and the associated infrastructure, Green Balkans and IWC have been training aviculture staff in the techniques of falcon breeding.



Photo 3. Saker chicks in Hack box

In addition to establishing the captive breeding of Sakers in Bulgaria, preparatory work was also carried out to refine release methods and to gain knowledge on the behaviour of released birds through a pilot project. A hack site was built at a cliff site within the Central Balkans National Park and six captive-bred juveniles were placed in the hack on the 24th May when they were aged 29-39 days old. In mid-June each of the young birds were fitted with a 22g GPS satellite transmitter and they were eventually released from the hack site on the 25th June. The delay in the release was due to concerns about the functioning of the satellite transmitters and it meant that the birds were aged 61 to 71 days old when released (i.e., 16 to 26 days older than initially planned). Consequently, they could fly

strongly on release and spent only a short time in the hack area before dispersing (3 to 6 days). The feather remains of one bird were found close to the hack site and it had probably died in heavy rainstorms shortly after release. A second bird was recovered dead 107 km away from the hack having survived just 12 days, but the corpse was too badly decomposed when found to ascertain the cause of death. Assuming that transmission cessation was the result of mortality, then the survival of the remaining four birds was very poor, as all had stopped transmitting within 21 days of their release. Nevertheless, four birds moved considerable distances in this time with the last locations being 245, 525, 568 and 590 km from the release site in Greece, Turkey, Ukraine and Serbia respectively.

The late release and rapid dispersal from the hack site probably contributed to the high mortality observed for the young Sakers in our pilot release, which was higher than that found in wild, satellite-tagged nestlings from Hungary and Slovakia (where approximately half the fledglings stopped transmitting within six months). Post-fledging dispersal normally occurs after young Sakers are 65 days old, giving them at least 25 days in the nest area prior to dispersal where they gradually develop independence from their parents and learn to develop their own hunting skills. The young Sakers in the pilot release did not experience this gradual process of gaining independence prior to dispersal. An alternative hacking strategy needs to be employed in future to maximize the chances of post-dispersal survival, which could include the use of an open hack site or earlier release (at *ca.* 40 days old).

Research on migratory Peregrines in Eurasia

In this research project we are using satellite telemetry and genetic analyses to study migratory Peregrines breeding in the Russian tundra. We aim to quantify the extent of genetic variation across the northern Eurasian breeding range of the Peregrine, which encompasses two recognized subspecies *calidus* and *japonensis*. Our genetic analyses will provide information on the evolutionary history of Eurasian Peregrines and the extent of gene flow across the breeding range. The satellite tracking provides novel data on migratory behaviour that will provide an insight into the mechanisms responsible for maintaining genetic variation in Peregrine populations across northern Eurasia. Furthermore, detailed knowledge of wintering areas and migration pathways enable us to identify potential threats to particular populations outside the breeding season.



Photo 4. Satellite tagged Peregrine in Taimyr

In 2011 researchers from International Wildlife Consultants and the Institute of Plant and Animal Ecology of the Ural Branch of the Russian Academy of Sciences, together with staff from the Taymirsky State Biosphere Reserve completed the third year of fieldwork within a five-year research programme (2009-13). The fieldwork involved fitting satellite transmitters to breeding birds in the Taimyr region of northern Siberia, this region being intermediate to the satellite tagging locations in previous years (i.e., Yamal Peninsula 1,500 km west in 2009 and Lena Delta 650 km east in 2010). Nine females and one male were fitted with 18g Argos satellite transmitters at nine different breeding territories (the breeding pair was tagged at one site). We found 11 breeding territories along 161 km of the Popigai River and the linear distance between nesting sites ranged from 5.1 to 27.5 km (mean interval was 13.6 km). Based on data obtained in previous surveys it appears that the breeding population of the Popigai River is currently stable.

In 2011, four adult females that were originally fitted with satellite transmitters in 2009 returned to breed at our study area on the Yamal Peninsula. In the previous year, five females from the cohort of birds tagged in 2009 bred, but one of these birds stopped transmitting during autumn migration through Iran. Of the two juvenile Peregrines fitted with satellite tags in 2010, one stopped transmitting on autumn migration through Russia and the other stopped transmitting in its wintering area in Sudan. None of the eight transmitters that have stopped transmitting have been recovered. Peregrines tracked by satellite from the Yamal Peninsula wintered in Portugal, Crete, southern Russia, Iraq, Iran, Saudi Arabia and Sudan. During winter the birds occupied discreet winter ranges and those that survived to the following year were faithful to the same wintering sites. In addition to the satellite tracking study Alexandra Khlopotova, a PhD student from the Ural Branch of

the Russian Academy of Sciences, Ekaterinberg, spent the summer of 2011 studying the feeding behaviour of breeding Peregrines in our Yamal Peninsula study area using video cameras set up at nesting sites; more than 600 hr of video was recorded at seven nests.

In 2011, six of the eight adult females that were fitted with satellite transmitters in 2010 returned to our study area in the Lena Delta. One female stopped transmitting on its autumn migration in 2010, whilst another stopped transmitting in its wintering area in southern China. Like the wintering Peregrines from the Yamal Peninsula, they occupied discreet winter ranges in a wide variety of habitat types including urban, agricultural and coastal habitats. However, in contrast to the birds breeding on the Yamal Peninsula, which migrate along flyways of the African-Eurasian system, the Peregrines of the Lena Delta migrated along the East Asian Continental flyway, wintering in southern China, Thailand and the Andaman Islands. The migratory divide exhibited by the Peregrines breeding on the Yamal Peninsula and Lena Delta suggests a possible mechanism for restricting gene flow across breeding populations in northern Eurasia. If our future genetic analysis reveals that there is reproductive isolation between populations using different migratory flyways then this has implications for conservation, as the northern Eurasian Peregrine population should be regarded as comprising two (or more) distinct units.

Genetic research on falcons

Cardiff University and BGI-Shenzhen are sequencing the whole genomes of two falcon species, the Peregrine and the Saker Falcon, on behalf of the Environment Agency-Abu Dhabi. This process began with blood samples being taken from individual males of each species at the Abu Dhabi Falcon Hospital. DNA was extracted from these blood samples in Cardiff University and then the samples were sent to BGI-Shenzhen in China for sequencing. This process is ongoing and we expect the initial results to be available before the end of the year.

Feather samples from Saker Falcons breeding at the Bayan Artificial Nest Experimental Area in Mongolia have been used to examine adult turnover rates at breeding territories over the period 2007-10. The preliminary results showed that adults are faithful to their breeding territories and no instance of breeding dispersal was recorded (note however, the single case of long-range breeding dispersal that we detected in 2011, which is mentioned earlier). Our data showed that about 30% and 20% of adults failed to return to their breeding territories in the years 2007-08 and

2008-09 respectively, whilst the return rate was much lower in 2009-10 with more than half of breeding birds failing to return to our study area to breed. This low rate of return may have been a consequence of increased mortality due to the severe winter and late spring in 2009-10, whilst the potential adverse effects of fitting satellite transmitters to breeding birds in 2009 may have had a further contributory impact. Further genetic analysis is being undertaken to assess the turnover of breeding adults in the 2010-11 breeding seasons at our Bayan Artificial Nest Experimental Area.

We investigated the genetic basis of plumage polymorphism using captive-bred Gyrfalcons held at the falcon breeding facility of International Wildlife Consultants. This work identified the site of a single SNP in the *MC1R* gene, which plays a decisive role in melanistic plumage production. The results of this work are currently in press: Zhan X.J., Dixon A., Fox N. and Bruford M.W. (In Press) Missense SNP of the *MC1R* gene is associated with plumage variation in the Gyrfalcon (*Falco rusticolus*). *Animal Genetics*.



Photo 5. Three plumage categories of the studied Gyrfalcons.

Genetic markers were used to identify the sex of Saker Falcon chicks reared at artificial nests in Mongolia over the 2007-09. The results showed a male : female sex ratios of 1:1, 1.8:1 and 1:1 in the years 2007, 2008 and 2009 respectively. Work is on-going to examine biometric variation in chicks in relation to their known sex and to examine potential factors that could influence the observed sex ratios in our study population.

A genetic population analysis was carried out using Saker Falcon samples collected from several widely separated areas of the species' global breeding range. Dr. Xiangjiang Zhan at Cardiff University used a technique that identifies single base-pair differences in DNA sequences (Single Nucleotide Polymorphisms; SNPs). The approach involved looking at SNPs in coding and non-coding DNA sequences. Though many SNPs cannot distinguish any genetic structuring in the global Saker populations, a few SNPs in certain functional genes did show some geographic variation. The results also reflected the east-west clinal variation across the global breeding range of the Saker.

Past and present status of the Barbary Falcon *Falco pelegrinoides* in Iran

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Summary

This article reviews all available data on the status of Barbary Falcon *Falco pelegrinoides* in Iran. Old literature was examined and unpublished data from the 1970s and 2000s was gathered. A map shows all old and new records of the species in 17 of the Iranian provinces. The species can be seen throughout the year and it seems that the numbers are not declining. There are only two confirmed breeding records in the 2000s and this paper reports one newly discovered nesting site in Zagros Mountains. It seems the most threatening factor to the species in Iran is illegal hunting.

Introduction

The Barbary Falcon *Falco pelegrinoides*, called Shaheen or Shahin in Persian, occurs in northern and southern Iran (Scott et al. 1975, Mansoori 2008) but its status (in particular current status) is not known. It is reported that both *F. p. pelegrinoides* and *F. p. babylonicus* may be seen in Iran (Hüe & Etchécopar 1970). The nominate race, *F. p. pelegrinoides* which ranges from the Canaries across north Africa south to 12°N and the Near East to Iraq, probably occurs in northwestern Iran and the western Zagros, and the subspecies *F. p. babylonicus* ranges from central and eastern Iran eastward (Vaurie 1961). However, some old literature mentioned the subspecies *F. p. babylonicus* as a subspecies of *Falco peregrinus* (Paludan 1938, Missone 1953, Mörike 1960). In addition, the Barbary Falcon is sometimes lumped with Peregrine Falcon. Vuilleumier (1977) previously discussed co-existence of *F. pelegrinoides* and *F. peregrinus* in northern Iran, in particular their sympatric distribution in northeastern Iran (Zarudny 1911, Vaurie 1961). In this paper we review old and new observations on the Barbary Falcon in Iran.

Past status

Regarding old records, Blanford (1876) reports of a bird shot in a garden near Abadeh by St. Johns. Zarudny (1911) reports it as breeding bird in north and south Khorasan and Kuhistan-Kerman regions. Paludan (1938) recorded a male at Bisheh-Porem (Sefid-Dasht,

Lorestan Province). A specimen was collected from Darzin, Kerman on 15 February 1940 by W. Koelz (Chicago Museum data). Missone (1953) reported it from Tirtash, Mazandaran. It is also reported three times in mid-January, early February and mid-March 1960 in Khuzestan Province (Mörike 1960). Desfayes & Praz (1978) also reported Barbary Falcon from foothills of Kuh-e Jupar, SE of Kerman on 11 May and near Zahedan on 6 July 1975. Énard & Etchécopar (1970) recorded a bird from Ghosh-Ghaleh and Bojnord on 12 May 1967, probably this species, and one individual was seen at gorge near Kivie, south of Ardebil (Dejonghe 1980). However, Table 1 presents details of unpublished information on the species in the period 1966–1978; most cases refer to single birds and there were no confirmed breeding records. In the 1970s, display flight was seen at Lake Tashk (Fars Province; Table 1), giving an indication of possible breeding.

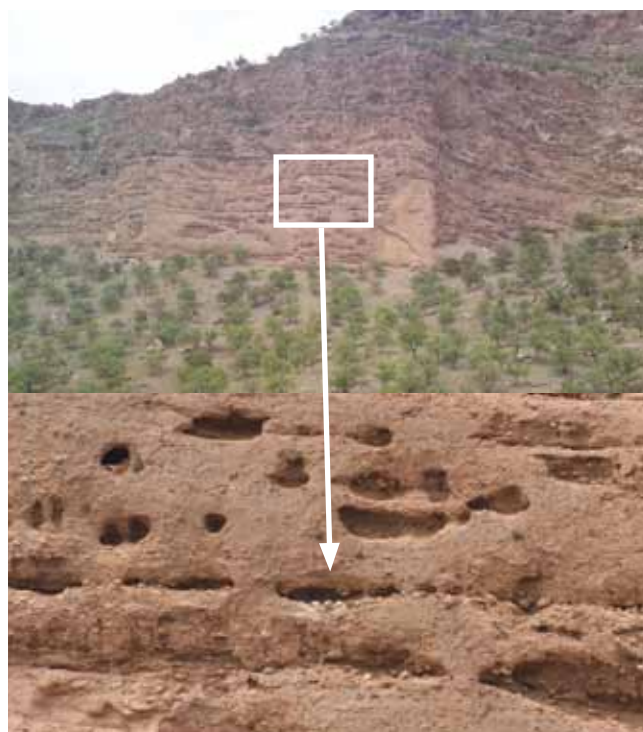


Figure 1. Barbary Falcon *Falco pelegrinoides* nesting site in Eastern Dena Protected Area, 22 April 2011 © A. Khaleghizadeh & M. Tohidifar.

Present status

Table 2 gives data gathered during the 2000s. During the decade, the species was observed at many locations in Fars, Gilan, Golestan, Hormozgan, Kerman, Kohkiluyeh & Buyer-Ahmad, Markazi, Mazandaran, North Khorasan, Semnan, Tehran and Yazd provinces (Table 2). Similar to the 1970s records, in most of the observations only one individual was seen but in the recent dataset there is more evidence to indicate breeding. Until recently, there was no confirmed breeding record for the species in Iran. In June 2006, a recently fledged chick was seen sitting on a rock c. 4 km from Lisar village and their parents were also observed

(Ashoori, 2010, A. Ashoori, pers. comm.). Pairs also were observed in Golastan National Park in April 2003 and in Bidoiyeh P.A., Kerman in May 2011 (Table 2). During a field survey on avifauna of the Dena Protected Area, a falcon nest with four nestlings was found on a clay wall in the Kamar-Zard area (Fig. 1), on 23 April 2011. The nestlings were at light downy stage with well

grown primary feathers, suggesting they were at least 30-days old. The nest was observed for a few hours from noon. Finally, a female Barbary Falcon returned to the nest, approaching from below. This nest location was reportedly used by the same or other falcon species during the previous breeding season.

Table 1. Records of Barbary Falcon (*F. pelegrioides*) in Iran between 1966 to 1978 (D.A. Scott, Unpublished data)

Date	No.	Location	Province	Observer	Remarks
19 January 1975	1	Coast of Morghu Island	Bushehr	DA Scott	Adult
13 December 1966	1	Gumoon, Lake Tashk	Fars	L Cornwallis	
27 January 1967	1	Gumoon, Lake Tashk	Fars	L Cornwallis	
08 May 1972	2	Gumoon, Lake Tashk	Fars	DA Scott	Pair in display flight
07 January 1973	1	South shore of Lake Bakhtegan	Fars	DA Scott	Adult
04 February 1973	1	Lake Parishan	Fars	DA Scott	
19 January 1974	1	East end of Lake Bakhtegan	Fars	DA Scott	
24 January 1974	1	Near Lake Tashk	Fars	A Eftekhar	
12 January 1975	1	Near Lar	Fars	DA Scott	Adult
02 April 1975	1	Bamou National Park	Fars	DA Scott	Sub-adult
07 October 1975	1	Upper Monde Valley near Kavar	Fars	DA Scott	Immature
01 December 1975	1	Lake Parishan	Fars	C Majka	Single bird seen several times
01 August 1975	1	Over steppe near Kalale	Golestan	DA Scott	Adult female
01 August 1975	1	Valley north of Kalaleh	Golestan	DA Scott	
03 February 1974	1	On shore at Bandar Abbas	Hormozgan	DA Scott	Adult
20 January 1975	1	Bandar Abbas	Hormozgan	DA Scott	
26 February 1976	1	Hara Protected Area, Khoran Strait	Hormozgan	B King	
14 April 1978	1	Bul Askar, west of Bandar-e Lengeh	Hormozgan	CDR Heard	
17 September 1974	1	South side of Salook Protected Area	Khorasan	DA Scott	Adult
18 November 1974	2	Rud-e Shur west of Sabzevar	Khorasan	DA Scott	Adult and immature
25 April 1975	1	Over Doruneh	Khorasan	DA Scott	Adult
12 February 1971	2	Just north of Andimeshk	Khuzestan	DA Scott	Pair of adults
06 January 1972	1	Plains north of Shushtar	Khuzestan	DA Scott	Adult male
12 July 1972	1	South-west corner of Gorgan Bay	Mazandaran	DA Scott	Adult
05 June 1973	1	West shore of Hamoun-e Sabari	Sistan & Baluchestan	DA Scott	
17 October 1975	1	Rocky headland at Chahbahar	Sistan & Baluchestan	DA Scott	Chasing a Hoopoe
03 February 1974	1	Between Tehran and Saveh	Tehran	SK Carnie	
22 April 1974	1	Lashgarak, Jajerud Valley	Tehran	DA Scott	
22 April 1975	1	Gorge west of Garmsar	Tehran	DA Scott	Adult

Table 2. Records of Barbary Falcon (*F. pelegrioides*) in Iran in the 2000s.

Date	Total number	Province	Habitat/Location	Observer	Reference
1 March 2000	1 subad.	Fars	Arjan Lake mudflats		Dubois et al. 2000
January 2004	1	Gilan	Boujagh N.P.		Ashoori & Zolfinejad 2006
January 2005	2	Gilan	Boujagh N.P.		Ashoori & Zolfinejad 2006
January 2006	1	Gilan	Boujagh N.P.		Ashoori & Zolfinejad 2006
June 2006	1 nestling	Gilan	Lisar to Astara	A. Ashoori	
24 January 2009	1	Gilan	Jowkandan Wetland, Talesh	A. Ashoori	
1994-1997	+	Golestan	Golestan N.P.		Rezaei 1999
14 April 2003	1 pair	Golestan	Golestan N.P.	M. Ullman	
May 2006	1	Golestan	Golestan N.P.	H. Jowkar	
January 2008	1	Hormozgan	Bandar-e Pohl	M. Ghasemi	
28 January 2000	1 ad.	Hormozgan	Khur Surgum [Surgalam]		van der Have et al. 2001
23 April 2011	1+ 4 nestlings	Kohkiloyeh & Buyer-Ahmad	Kamar-Zard	M. Tohidifar, Khaleghizadeh, A. Zarei	
January 2006	1	Mazandaran	Fereidoun-Kenar	J. Mansoori	Mansoori 2009
29 April 2007	1	Mazandaran	Lasm	M. Ullman	
January 2006	1	Mazandaran	Miankaleh	J. Mansoori	Mansoori 2009
7 October 2010	1	North Khorasan	Sarakhas,	A. Khani	
25 April 2007	1	Semnan	Abr	M. Ullman	
17 April 2003	1	Semnan	Touran	M. Ullman	
1999-2000	+	Tehran	Khojir	P. Bakhtiari	Bakhtiari & Tohidifar 2007
1999-2000	+	Tehran	Lavasan	P. Bakhtiari	Bakhtiari & Tohidifar 2007
23 April 2002	1	Yazd	Harat		Tsagarkis et al. 2002
2000s	+	Yazd	Siahkuh P.A.		Irannejad et al. 2006

Discussion

According to the literature review and new records in the 2000s, the species was recorded in 17 provinces (out of 31 Iranian provinces; Fig. 2) nearly in all months of the year (Fig. 3). Comparison of number of observations in the 1970s and 2000 suggests that the status of the species is similar in these two periods, whilst the lack of observations in February and from July to December is probably because of low ornithological activity in these months in the last decade.

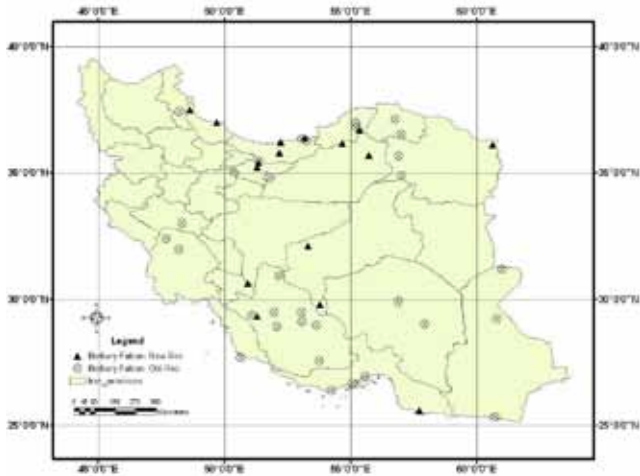


Figure 2. Distribution map of Barbary Falcon *Falco pelegrinoides* in Iran.

The distribution of the species can be divided into two distinctive ranges: one along the Alborz mountain ranges and Khorasan region, and another in southern Iran (Fig. 1). It seems that all birds observed in Iran belong to the subspecies *F. p. babylonicus* (considering no confirmed record of *F. p. pelegrinoides* in northwestern Iran). Future studies are necessary to see whether the birds occupying the two distinctive ranges are similar (in terms of morphology) or not, and to determine if the birds of western Iran are of the subspecies *pelegrinoides* or *babylonicus*. Also, interbreeding of the Barbary Falcon with Peregrine Falcon in northern Iran is another question to be answered in the future.

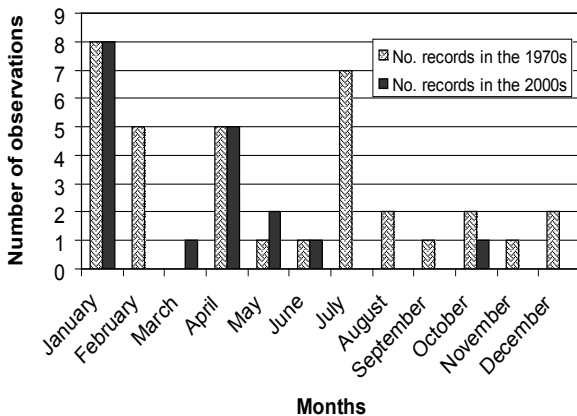


Figure 3. Comparison of number of observations per month between the 1970s and 2000s.

It seems that one of the most important threats that the species is facing is illegal hunting and capture. In August 2005, an individual was offered for sale for *c.* 20 USD in Karaj and another was kept in captivity in Eram Zoo, Tehran city in May 2010 (A. Khaleghizadeh, pers. obs.). In addition, at least 8 juveniles were in captivity in Bandar Abbas Provincial Office of the DOE in October 2004 (Fig. 4) that were seemingly taken in northern/northeastern Iran when they were at nestling stage (B. Musavi, pers. comm.). This is supported by some expert hunters who stated that the best area for breeding Barbary Falcons in Iran is Sarakhas and Saleh-Abad areas, North Khorasan Province (A. Khani, pers. comm.). One individual was captured and released in December 2008 in Gomishan area (H. Jowkar, pers. obs.). Although the species is protected under Iranian Environmental Laws with a fine rate of 60,000,000 Rials (= *c.* 5000 USD) per individual (Laws and Parliamentary Affairs Office, DOE 2005) and the Department of the Environment (DOE) still proposed to increase the rate to a recently revised rate of 120,000,000 Rials, there are still evidences that the species suffers from persecution by illegal hunters.



Figure 4. Barbary Falcon juvenile caught by illegal hunters, Bandar Abbas, October 2004 © S.B. Mousavi.

The status of the species still needs more attention. Locations in which pairs, nests and nestlings of the species were previously observed (such as north of Andimeshk, west of Sabzevar, Lake Task, Lisar, and Eastern Dena P.A.) should be revisited in the near future. When collecting data on the species in Iran, it must be noticed that the Persian name of Barbary Falcon and Peregrine Falcon are replaced with each other during the last decade (Scott *et al.* 1975 versus Mansoori 2008, Scott & Adhami 2006) in order to

avoid erroneous records. More attention should be paid firstly to find nesting sites, and then to conserve the breeding locations of the species, and finally prevent from habitat degradation and illegal hunting.

Acknowledgements

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Some historical notes on falcon trapping in southwestern Iran

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During 1972-74 I spent nine months surveying the migration of large falcons in Iran. From January until March 1974 I visited areas along the Iranian coastline of the upper Persian Gulf. The information presented here was obtained during that three-month period. Since that period was outside the trapping season, the photographs used in this article were taken elsewhere in the country and have been included to exemplify the falcons being trapped in Iran.

When migrant falcons were absent, I attempted to obtain data on commercial trapping efforts for falcons in the region. Such trapping and local trafficking in falcons was made illegal by Iranian protective regulations enacted in 1972 by IDEC, the Iranian Department of Environmental Conservation (*Sazeman-e Hefazat-e Moheet-e Zist*) so the material presented here is basically of historical interest. At the same time, although not based on migration observations, it does shed considerable light on the presence of migrant falcons on the northeastern side of the Gulf and on the activities of falcon trappers and commercial falcon trade in the region.

I was guided in my investigation by retired Imperial Iranian Army Colonel Behzai (first name not obtained), then chief of the IDEC Fars provincial office in Shiraz who also referred me to others able to expand on the data he provided. Colonel Behzai had been chief of the IDEC Khuzistan provincial office in Ahwaz prior to his Shiraz posting and was thus knowledgeable of trapping activities in Khuzistan as well as those in the Shiraz area and further south on the Gulf coast within his jurisdiction.

It should be noted that the common Farsi (Persian) word for falcon is *shahin*, which is used to refer to both the Red-naped Shahin (*Falco pelegrinoides babylonicus*¹), Farsi: “*shahin-e kuhi*”, lit: falcon of the mountain(s) and the Peregrine (*Falco peregrinus*), Farsi: “*shahin-e bahri*”, lit: falcon of the sea). In normal conversation, a distinction between the two was seldom made. While attempting to differentiate between them in interviews, sources often could not positively identify

¹ This taxon is sometimes treated as a subspecies of the Peregrine (*F. peregrinus babylonicus*) or the Barbary Falcon (*F. pelegrinoides babylonicus*).

which *shahin* was involved, especially when relating information received from others who had referred only to “*shahin*”. While being as specific as the data recorded allows, the reader is cautioned that where a specific species is not identified, it could be either of the two.

There was formerly considerable activity involving the trapping of falcons for falconry along the Iranian Gulf coast. The common falcon in all areas was the Saker Falcon (*Falco cherrug*; Fig. 1). In Shiraz the next most common was the Red-naped Shahin, with a few Peregrines also being observed/trapped (Figs. 2 and 4). The reverse was the case to the north in Khuzistan and on the Gulf coast where the Peregrine was second to the Saker and the Red-naped Shahin seen only on occasion. Aside from a very few customers practicing falconry in the Ahwaz and Bushire areas, almost all of the local efforts in catching these birds went toward supplying the demands of Arabs, and particularly the sheikhs on the west side of the Gulf (the Sheikhs of Qatar and Kuwait being specifically mentioned).



Figure 1. Immature female Saker Falcon, trapped 29 October 1972 on the Mian Kaleh Peninsula northeast of Sari (36.33N 53.06E), Iran at the southeast corner of the Caspian Sea. Weight: 1120 g.

Those Arabs were principally interested in flights at the Houbara Bustard (*Chlamydotis undulata*) and, to a lesser extent, hare: for such large quarry, the larger the falcon, the better. Because of its hardiness and, they said, ease of training, the Saker was at least formerly preferred over the Peregrine. One local Iranian falconer indicated that the Arabs might have as many as fifteen Sakers for hunting for each Peregrine in their possession. In recent years, however, demand for Peregrines had been growing. One local (Khuzistan) falcon dealer indicated that this increased interest was because hunting with a gun, at least for bustard, had been prohibited in Saudi Arabia. As a consequence, there was more interest in the Peregrine which he said was considered a more efficient hunter than the Saker.



Figure 2. Adult female Peregrine Falcon, trapped 15 November, 1973 (weight *ca.* 1141 g, after discounting crop of bait pigeon). Trapping location same as Saker in Figure 1. Note, also, I am unable to assign any of the peregrines trapped to an explicit sub-species. The systemic “expert” to whom I showed these slides was only able to indicate that clearly I was encountering Peregrines from a number of different source locations.

Although Goshawks (*Accipiter gentilis*) were observed and occasionally captured in Khuzistan and along the Gulf coastal plain, they were of no interest to the Arabs, nor was there any local demand for them. While a few might be caught for friends in the north of Iran, most of the few falconers remaining in the north apparently obtained their Goshawks closer to home than the Gulf area.

The following were specifically cited as areas where falcons were trapped in the past (Map 1). In addition falcons were reportedly also trapped at Hassanabad and Nigaristan (I was unable to locate these sites but they possibly refer to locations further north in Iran).

The consensus was that falcons arrived in Khuzistan and the northern Gulf area at about the same time as the arrival in that area of migrating Houbara Bustard (approximately mid-September) with at least some falcons remaining, along with the Houbara, through approximately mid-March. Trapping for falcons commenced in that area in late September, and continued, most actively, for about two months. Sources indicated that a few Peregrines could be located in the vicinity of Ahwaz and Abadan in mid-January and mid-February, as could a few Houbara, but the majority of both had apparently continued further south in their migration. There was very little evidence of any northward, spring migration; only four or five falcons (species?) reportedly seen that late in the season (March). Colonel Behzai indicated that trapping, presumably in the Shiraz area, commenced in late August. That earlier date may well have been due to the closer proximity to nesting areas, allowing trapping before the actual migration had begun.



Map 1. Showing approximate locations of reported trapping areas. **KHUZISTAN:** (1) Ahwaz (31° 17'N 48° 43' E), (2) Musian (32° 27'N 47° 24' E) (3) Shadegan (30° 40'N 48° 40' E), (4) Abadan (30° 20'N 48° 15' E), the Hendijan Plains between (5) Bandar-e Ma'shur (30° 34'N 49° 10' E) and (6) Hendijan (30° 17'N 49° 43' E). Another trapping area at Zarqan was unlocated (there is one in Fars but the reference clearly was in Khuzistan). **FARS:** Gulf Coast (north of Bushire): (7) Bandar Deilam (30° 04'N 50° 08' E), (8) Bandar Gonaveh (29° 34'N 50° 33' E), (9) Choghadak (28° 59'N 51° 02' E) near Bushire (28° 59'N 50° 50' E) and (10) Borazjan (29° 15'N 51° 14' E). Shiraz area: (11) Parishan Lake and marshes (29° 30'N 51° 48' E), (12) Lapui marshes (29° 47'N 52° 39' E), (13) Barmashur spring - in the vicinity of Lake Maharlu (29° 28'N 52° 47' E) and (14) Kam Jan marshes - north of Tashk Lake (29° 43'N 53° 32' E). Entire coastal plains from the above-noted Choghadak to (15) Gavbandi (27° 12'N 53° 04' E) and on to (16) Bandar Lengeh (26° 34'N 54° 52' E). Note: map shows current provinces of Iran, which have altered since 1972-74 (see www.zum.de/whkmla/histatlas/centrasia/haxiran.html).

Trapping arrangements, at least in Khuzistan and on the Gulf coastal plains, were such that some 20-40 individual trappers would work under the sponsorship of each of several local dealers. Some seven such dealers were identified in the Khuzistan area, and I had the opportunity of interviewing two of them in the course of these investigations. The trappers apparently worked only mornings, each having a pit-like blind (hide) and two or three bow-net-type traps arrayed around the blind. The bow-nets themselves were rectangular in shape rather than the round, European form. These bow-nets would be variously baited, one with a pigeon or dove, one with a sandgrouse, and another with a jerboa, a kangaroo rat-like local rodent. The trappers used a Common Kestrel (*Falco tinnunculus*), or, occasionally a male Peregrine or Red-naped Shahn as a lure. Such a lure would be attached by both feet and neck to a line some 25-30 yards in length. These lure falcons had a bundle of fur and/or feathers suspended 8-10 inches below their feet, intended to give the appearance of a falcon fluttering, about to capture quarry. This artificial

quarry was *not* equipped with nooses (as is the *barak* nooseball used to capture Sakers in Pakistan). The lure falcon would circle about over the trapper's blind at the length of its tether. When a wild falcon was attracted to the vicinity by the actions of the lure bird, the trapper would pull in the lure and ascertain whether the wild falcon was worth catching; i.e. was it a large falcon? If so he would pull into view the appropriate bait (pigeon/dove for a Peregrine or jerboa, or possibly a sandgrouse, for a Saker. If seized by the falcon, the bait was drawn into the center of the bow which was then pulled over manually. On occasion (deplorably) non-desirable (small) falcons or other raptors would be trapped if the trapper needed them to serve as food for birds already in his possession.

Although all of the commercial trapping apparently was accomplished using this bow-net system, two local (Khuzistan) falconers indicated a knowledge and personal use of a modified noose-jacket arrangement. Eight nooses, two to three inches in diameter, were affixed to a small rectangular wire frame which was attached to a pigeon's back by a loop of string under each wing (Fig. 3). One of these falconers described attaching a ball of string to the pigeon, as is the practice in North America, the string paying out as the pigeon flew. The other falconer did not encumber the bait pigeon at all, pursuing a noosed falcon in a jeep until, encumbered by the bait pigeon, he could catch it. If he could not drive after the ensnared falcon, the falconer indicated that his young son would chase the falcon on foot until he could catch it. Occasionally a trained falcon would be flown at a noosed, wild falcon and bait pigeon, their ensuing struggles being sufficient to hold the wild bird until retrieved on foot.

Commercial trappers emplaced their blinds and bow-nets in the sand hills between 3½ and 18 miles from the Gulf shore for Peregrines, or on the inland flats nearer the mountains for Sakers, there to await passing birds. The private falconers with their noose-jacketed pigeons would locate an individual falcon, most commonly finding them on power line towers, and trap for that bird until they caught it or it moved on. One falconer stated that he had trapped for a month for one male Saker before he succeeded in catching it.

Falcons trapped commercially went to the dealer for whom the individual trapper worked, the trapper receiving some 2,000 – 4,000 Rials (approximately \$26 to \$52 at the exchange rate of the time), dependent on the size and type of falcon trapped. The falcons were then either transported at the direction of the dealer to their recipients on the opposite side of the Gulf or were picked up in Iran by representatives of the Arabs sent there for that purpose.

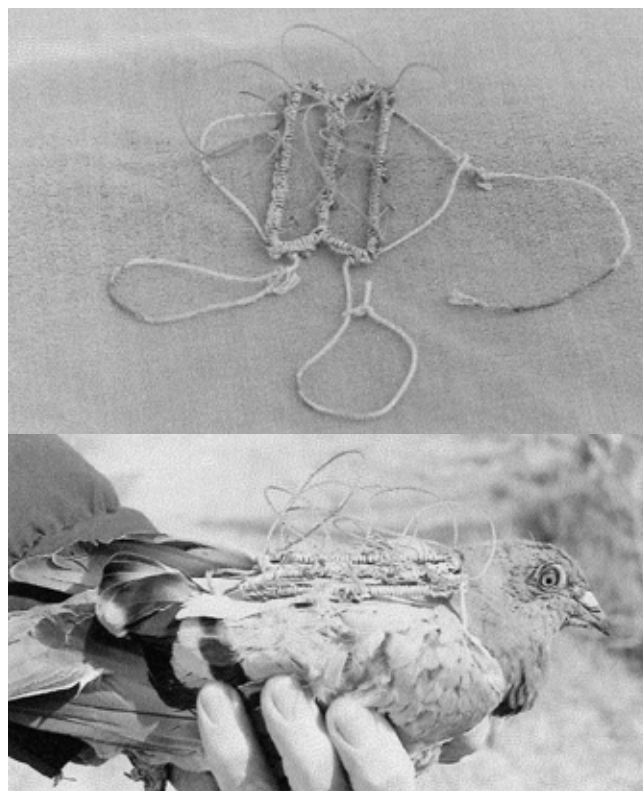


Figure 3. Locally produced noose harness (obtained in Khoramshahr, early 1974), shown both on bait pigeon and off. Note: all of the birds shown in this article were trapped on western-style noose harnesses with pigeons (rock doves) as bait birds.

Prices indicated by the dealers were approximately 2-5,000 Rials (\$26-\$65) for small, presumably male, Sakers and about 8-9,000 Rials (\$94-\$130) for Peregrines (females). Smaller falcons such as Red-naped Shahins and male Peregrines (Figure 4) would only bring some 500-1,000 Rials (\$6.50-\$13), and if a Goshawk was to be sold at all it would only bring about 1,000 Rials (\$13). Colonel Behzai thought that birds were sold by the dealers for more, indicating some 10-15,000 Rials (\$130-\$195). The two Khuzistani falconers interviewed stated that with the increasing demand for Peregrines, their price might be as much as 30,000 Rials (\$390) and an especially big, white-breasted adult might be sold for as high as 80-100,000 Rials (\$940-\$1,300). These latter prices might very likely have been for birds illegally trapped and smuggled out of Iran after the protective regulations were invoked. Despite the above quotation for a big adult Peregrine, one of the dealers interviewed stated that adult Peregrines were not in demand by the Arabs. He indicated that while the latter were most desirous of obtaining adult Sakers, they considered adult Peregrines too difficult to train and too readily lost to be worth the effort, and presumably the money, involved.

The dealers indicated that, at the height of the trapping season, there might be as many as 200-500 bow-net arrangements in all of Khuzistan, south to the Hendijan Plains. They also stated that they felt lucky if 10-20% of those trappers were successful in catching a falcon.



Figure 4. Immature Peregrine male, trapped 18 October 1972 in the vicinity of Bandar-e Pahlavi (37.26N 49.29E), Iran at the southwest corner of the Caspian Sea. Bird had been shot sometime prior to trapping, damaging feathers in the left wing (replaced before release), and probably accounting for what well may be a lower than normal weight (482 g).

The two interviewed had some 20-30 and 30-40 trappers, respectively, working for them when falcon catching was legal. The one with 20-30 trappers indicated that his men had caught, and that he had subsequently sold, some ten falcons the last year that trapping was legal (1971). The other indicated his annual catch was “about ten” birds. It may be significant that this latter dealer, when asked what had been the ratio of Sakers to Peregrines, indicated that they would catch “twenty Sakers to five Peregrines”. The dealer who claimed to have the 30-40 trappers (and who cited the 4:1 Saker to Peregrine ratio) claimed that his annual expenses to support his men’s trapping ventures were some 150-200,000 Rials (\$2,000-\$2,600).

One of these Khuzistani dealers also said that there were some “3,000” trapping operations further south on the “*dash*” (desert/plains) north and south of Bushire along the Gulf. I suspect, however, that he was less familiar with the latter area as it was not where his own trappers operated. The number, therefore, could well have been a rough estimate, hearsay, or even outright fabrication. Colonel Behzai, who was in a far better position to estimate, felt that that the Shiraz area and the coast from Bushire to Bidekhun contained some 80-100 professional trappers, with possibly as many as 200-300 more individuals sufficiently knowledgeable to engage in falcon trapping if the likelihood of success appeared to warrant the effort. He estimated that these men might trap as many as 200-300 falcons annually in those areas.

Colonel Behzai also stated that, as of about 1967, his Ahwaz IDEC office (responsible for all of Khuzistan) had issued some 200 permits to trap one falcon, each at a price of 2,000 Rials (\$26). Transferring to the Shiraz office (responsible for the entire province of Fars, to include the lower Gulf trapping areas in the vicinity of Bushire), Colonel Behzai said that, in about 1969-70, his office issued all of its 200 falcon-trapping permits, and possibly could have issued more had they been available. The Colonel realistically judged that not all

persons with a license succeeded in capturing a falcon, nor would all persons trapping for falcons purchase a license. He was putting pressure on the trappers in those days to adhere to the legal system, but he believed that those trappers who felt unlikely to be checked chose not to invest in permits.

With no falcon census data available for either the legal trapping years nor the period since regulatory restriction, it is difficult to assess the impact that these trapping ventures might have had on migrant falcon populations. One of the dealers who had been in the business for the preceding fifteen years claimed that he could discern no reduction in falcon numbers during that period. It is obvious, however, that with his financial motivation for a return to legal trapping, he might well have been unwilling to admit to any population decreases.

In defense of legal trapping, the dealers were quick to point out that the common Arab practice, at least while birds were readily obtainable, had been to train and hunt their birds during the fall and winter and then release all but the most spectacular hunters the following spring. They felt that such a practice could hardly be harmful to falcon populations.

Preparing this data in 1975, I wrote that while some birds were still very likely trapped and smuggled across the Gulf, despite protective regulations, the numbers of birds so taken were probably considerably reduced from former years. I had no understanding at that time as to whether or not the Arabs were continuing to release the majority of their birds at the end of the season as earlier. As of 1975, the prices had most likely increased, and I speculated that the Arabs might well have been reluctant to release the more expensive birds, so difficult to obtain. It is also understood that, following the 1978 coup which dethroned the Shah and established Iran’s Islamic Republic, many of the regulations aimed at protecting wildlife instituted by IDEC, presumably including those regulating falcon trapping, were either scrapped or ignored.

While I have attempted to record the information with which I was provided as accurately as possible, I am unable to vouch for the accuracy of what I was told. It is only appropriate too that I express my most sincere gratitude to Eskandar Firouz, Director of IDEC at the time I conducted these studies, for his interest in and support of all my research in his country. Tragically, he was imprisoned for some seven years upon the change of regime in 1978. He was fortunate to have retained his life and I trust he still lives. Thanks also go to Drs. Derek Scott and Fred Harrington, both then on the IDEC staff, for their support and assistance in my falcon migration studies in Iran. Thanks are due also to Dr. W. Grainger Hunt for his critical and most helpful suggestions in the preparation of this manuscript.

Images of falconry in Afghanistan from the Falconry Heritage Trust's collection

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During the last 20 years three books on falconry in Afghanistan were published in the Western world: two books by the Afghani, Sirdar Mohamed Osman entitled “*Falconry in the Land of the Sun*” in 2001 and “*Musings of an Afghan Falconer*” in 2005, whilst another short book in German by Gerd Kühnert “*Falkneri in Afghanistan*” (Habelt, Germany) was published in 1980. All three books have been well-received and have added a great deal to our understanding of falconry in this remote and little-known country.



Picture 1. Covers of “*Falconry in the Land of the Sun*” (Western Sporting Publications, USA) and “*Musings of an Afghan Falconer*” (The Eryr Press, UK) by Sirdar Mohamed Osman.

During the last six years of Falconry Heritage Trust work we have collected several interesting images of falconry in Afghanistan, which I share with you in this article, and furthermore I provide details of the website locations for other related imagery of falconry in Afghanistan. The reason for focussing on Afghanistan in this article is that, despite the publication of the aforementioned books, information on falconry in the country is still extremely limited.

Falconry in Afghanistan has an ancient tradition, which was already flourishing in the 7th Century. Christian Antoine de Chameralat in his famous book “*Falconry and Art*”, published by Sotheby’s Publications in 1987 in London, describes three centres in the country: the

provinces of Kapisa and Parwan to the north of Kabul and in Kohistan, where the Sparrowhawk prevailed; Lagman (a province of the Nanghar) to the east of Kabul, which was the domain of the Goshawk; and to the north-west of Kabul, the provinces of Bakh, Jawsjan and Faryab, where the Saker Falcon and the Golden Eagle were predominant.



Picture 2. A drawing by John Charlton entitled “Falconry in Afghanistan” showing the Crown Prince Nazrullah Khan of Afghanistan partridge hawking. Taken from the book “*The Persian Treatise on Falconry*” (Courtesy of The Eryr Press and Kenyon Gibson).



Picture 3. Afghani falconer from Bamiyan (beepworld.de/members4/wolas/bilderdokumentation2.htm)



Picture 4. Photos of hunting hawks in Kabul. Courtesy of Mr. Wali Modaqiq of Kabul.

Falconry images from Afghanistan available on the internet

In the article written by journalist Ahmad Zaher in German about his trip via Afghanistan in the 1980's and illustrated by colour photos of L. Powell there is one interesting photo of Afghani falconer: (www.afghanistanhelp.de/html/das_land.html)

In the British TopFoto gallery there is another old photo of an Afghani falconer with his falcon, with two boys in the background taken by Hanns Tschira in 1941 (vintage property of Ullstein bild): (www.topfoto.co.uk/gallery/Afghanistan/ppages/ppage3.html)

On the Patricia Monaco blogspot (USA) there is a description of her journeys across Afghanistan with one very nice image of two local falconers taken in 2003 in Gorand, Central Afghanistan: (patmonaco.blogspot.com)

In the archived papers of American diplomat Charles W. Thayer held in the Harry S. Truman Library there is very good photo of Abdullah, the Court falconer taken in Kabul, 1942-1943. Thayer played a key role in organizing the first U.S. diplomatic mission in Kabul,

but spent much of his free time learning about local customs. Long interested in falconry, he befriended the Court falconer and dedicated many hours to this ancient sport: (<http://www.meridian.org/in-small-things-remembered/the-staff-of-american-diplomat-charles-w-thayer>)

On the web-site of the traveller and journalist Tsur Shezaf there are four images of falconers in Afghanistan: (shezaf.net/component/option.com_phocagallery/Itemid,138/id,1/view/category/)

There is an interesting series of images of hawks used for bird strike prevention at Bagram airfield near Kabul in the two following websites:

(www.af.mil/news/story.asp?id=123214604 and www.bagram.afcent.af.mil/photos/mediagallery.asp?galleryID=1435&page=105)

On the web-site of Professor Mark Slobin "Music in the Afghan North 1967-1972", there is an old colour photo of Afghani falconer with a young Goshawk: (afghanistan.wesleyan.edu/afghanistan/cgi-bin/slobinsearch.cgi?searchstring=showqi)

Two wonderful recent images of Afghan falconers taken in neighbouring Pakistan are at: (www.fuller-imc.com/images/Pakistanhtml/html0001/images/Afghan%20Falconer.jpg) and an image taken by Eliza Ruhamah Scidmore in 1903 more than a century ago: (<http://www.lib.umn.edu/apps/ames/wi/w3i005-1.jpg>)

The Falconry Heritage Trust will be happy and grateful to receive any new and old images on falconry from this ancient country.



Picture 5. Afghani falconer from Laghman Province.

Digital Radiography- an important technique to diagnose musculoskeletal disorders in falcons.

Part Three: Normal radiographs of clinically healthy falcons

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A discussion of the advantages and disadvantages of digital radiography in birds, as well as images

from selected cases of falcons with musculoskeletal disorders, has been previously published: Quilquini D, Bailey T, Di Somma A and Kutty, A. 2010. Digital radiography- an important technique to diagnose musculoskeletal disorders in Falcons. *Falco* 36: 23-28.

This paper presents ventrodorsal and lateral (left to right) radiographs of a clinically healthy gyr X Peregrine Falcon hybrid (*Falco rusticolus* x *F. peregrinus*) obtained with Indirect Digital Radiography (IDR) at the Dubai Falcon Hospital, United Arab Emirates.

Acknowledgements

We thank HH Sh. Hamdan bin Rashid al Maktoum and Humaid Obaid al Muhairi, Dubai Falcon Hospital director, for their support of the work of the hospital, and to all the falcon hospital team for their assistance with cases. Parts of this paper have been published as: Quilquini D, Bailey T, Di Somma A and Kutty, A. 2008. Digital radiographic diagnosis of selected musculoskeletal disorders in falcons. *Exotic DVM*. 10 (1): 13-18.

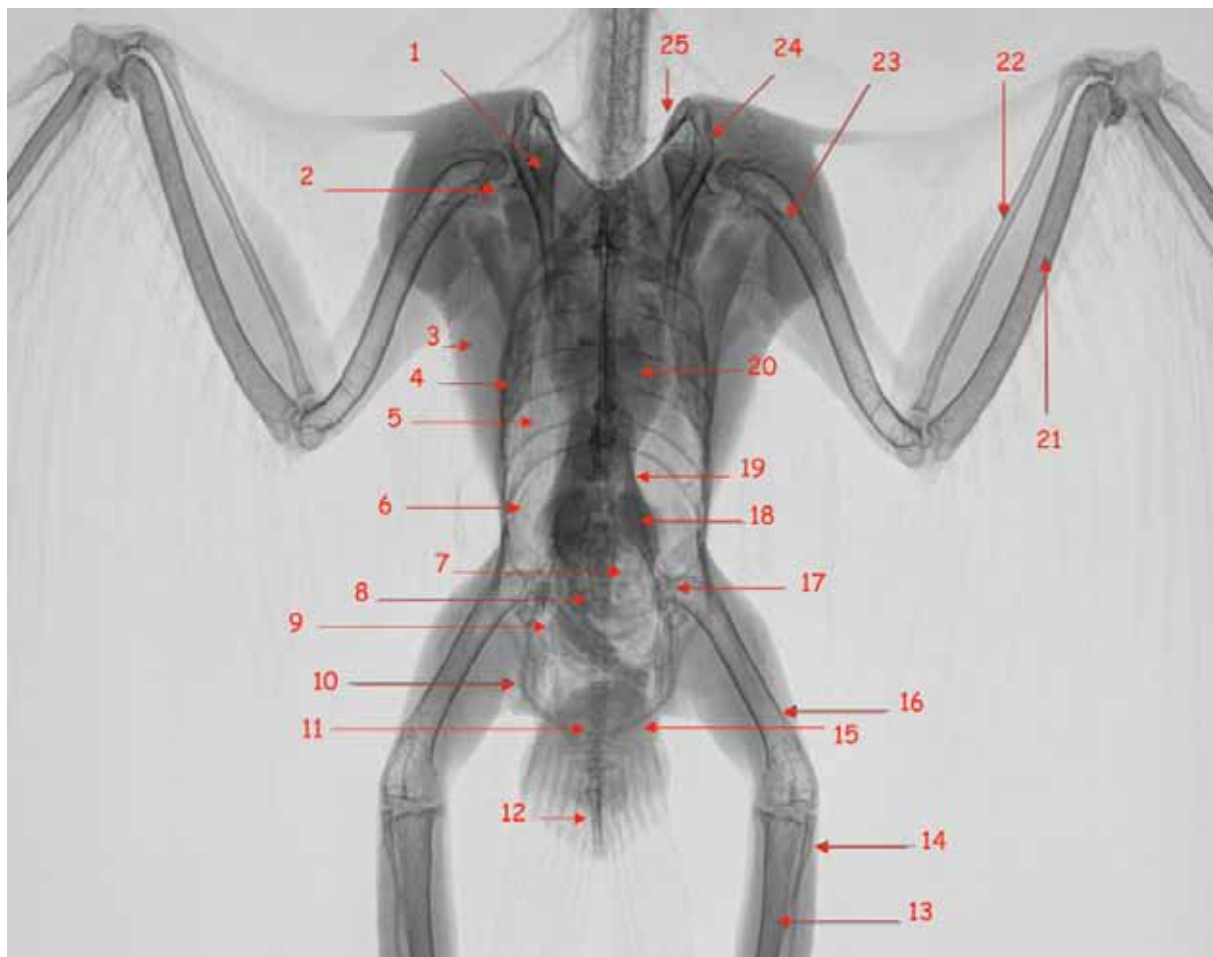


Figure 1. Ventrodorsal view of the whole body

- | | | | |
|----------------------------|---------------------------|--------------------|--------------|
| 1. scapula, | 8. synsacrum | 15. pubis | 22. radius |
| 2. clavicular airsac | 9. abdominal airsac | 16. shaft of femur | 23. humerus |
| 3. pectoral muscle | 10. ischium | 17. head of femur | 24. coracoid |
| 4. lung | 11. free caudal vertebrae | 18. kidney | 25. clavicle |
| 5. cranial thoracic airsac | 12. pygostyle | 19. liver | |
| 6. caudal thoracic airsac | 13. tibiotarsus | 20. heart | |
| 7. ventriculus | 14. fibula | 21. ulna | |

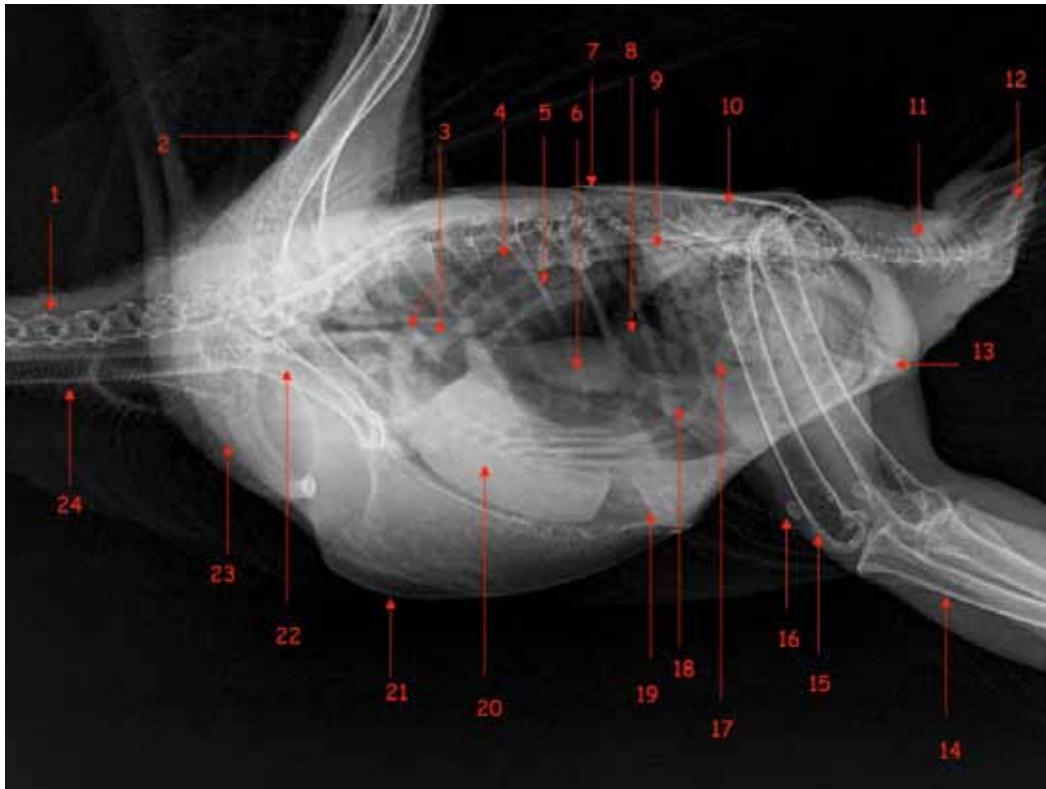


Figure 2. Lateral view of the whole body

- | | | | |
|------------------------------|-----------------------------|---------------------|-------------|
| 1. cervical vertebrae | 8. spleen | 15.femur | 22.coracoid |
| 2. humerus | 9. kidney, cranial division | 16.patella | 23.clavicle |
| 3. great vessels | 10.synsacrum | 17.intestinal loops | 24.trachea |
| 4. lungs | 11.free caudal vertebrae | 18.ventriculus | |
| 5. rib | 12.pygostyle | 19.liver | |
| 6. proventriculus | 13.pubic bone | 20.heart | |
| 7. thoracosynsacral junction | 14.tibiotarsus | 21.keel | |

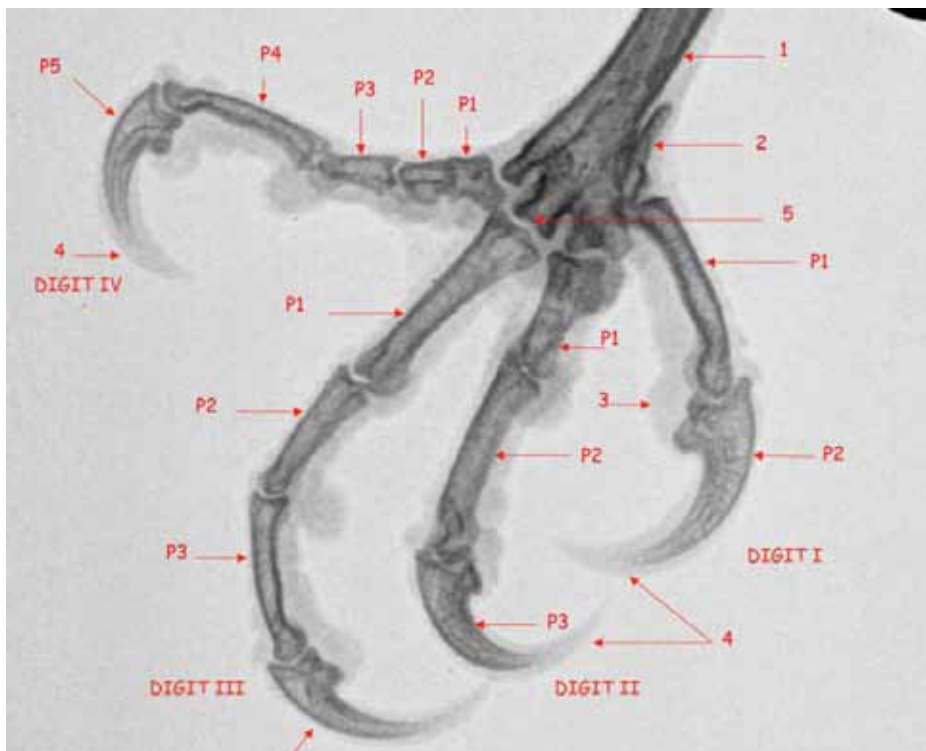


Figure 3. Foot

1. tarsometatarsus
 2. metatarsal one
 3. digital pad
 4. claw
 5. trochlea for digit III
- P1, P2, P3, P4, P5 phalangeal bones



Figure 4. SHOULDER in a ventrodorsal view

- | | | |
|--------------------------------|---|------------------------------------|
| 1. proptagialis complex | 7. pectoral muscle | 12. head of scapula |
| 2. head of humerus | 8. notarium | 13. shoulder extremity of coracoid |
| 3. dorsal tubercle of humerus | 9. caudal extremity of scapula | 14. clavicle |
| 4. humerus | 10. medial border of coracoid | |
| 5. ventral tubercle of humerus | 11. tensor proptagialis, pars longus tendon | |
| 6. clavicle airsac | | |

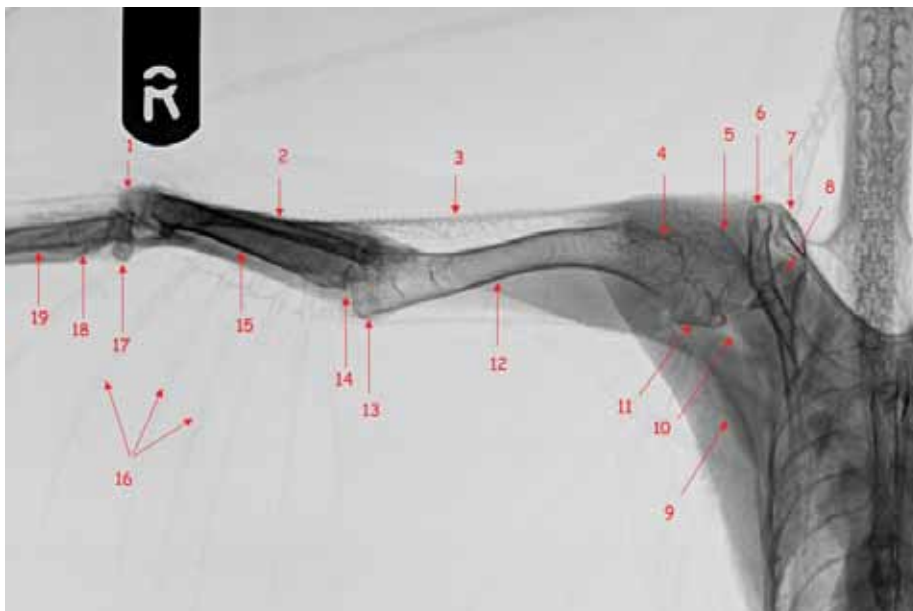


Figure 5. SHOULDER in a craniocaudal view

- | | | |
|--|---------------------------------|--|
| 1. radial carpal bone | 8. scapula | 16. primary remiges |
| 2. radius | 9. pectoral muscle | 17. ulnar carpal bone |
| 3. tensor proptagialis, pars longus tendon | 10. clavicle airsac | 18. alular digit |
| 4. dorsal tubercle of humerus | 11. ventral tubercle of humerus | 19. major and minor metacarpal bones, superimposed |
| 5. head of humerus | 12. humerus | |
| 6. coracoid | 13. condyle of humerus | |
| 7. clavicle | 14. elbow joint | |
| | 15. ulna | |

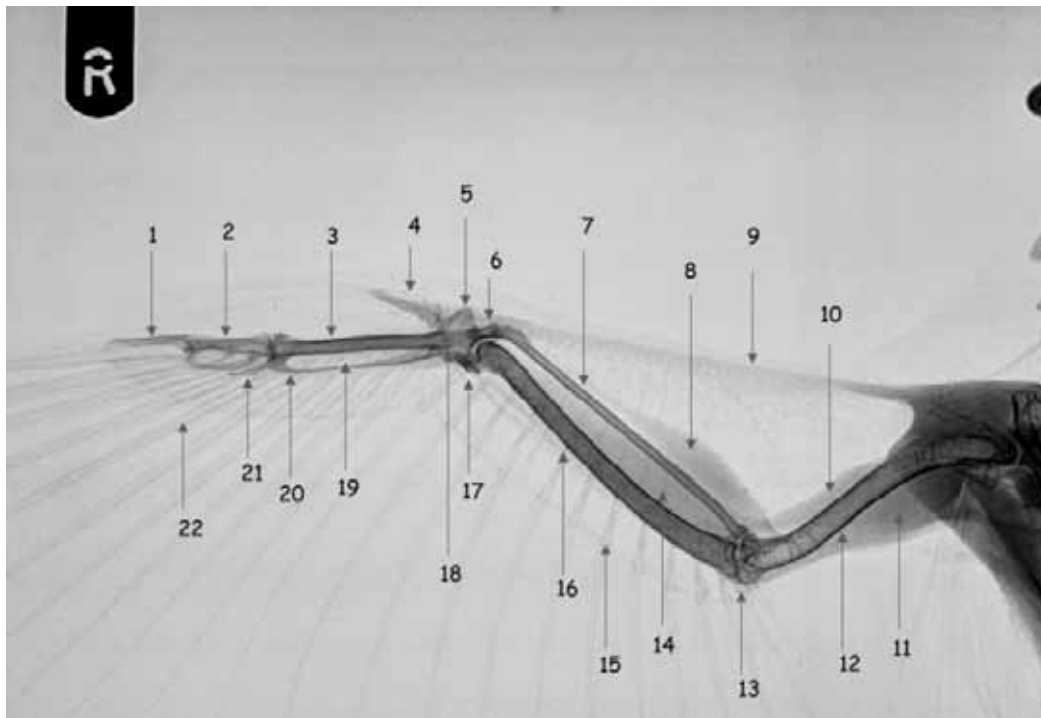


Figure 6. Extended Wing

- | | | |
|---|--|---------------------------|
| 1. distal phalanx, major digit | 9. tensor proapatagialis, pars longus tendon | 17. ulnar carpal bone |
| 2. proximal phalanx, major digit | 10. biceps brachi | 18. carpometacarpal joint |
| 3. major metacarpal bone | 11. triceps brachi | 19. intermetacarpal space |
| 4. alular digit | 12. humerus | 20. minor metacarpal bone |
| 5. extensor process of alular metacarpal bone | 13. elbow joint | 21. minor digit |
| 6. radial carpal bone | 14. extensor metacarpi ulnari | 22. primary remiges |
| 7. radius | 15. secondary remiges | |
| 8. extensor metacarpi radialis | 16. ulna | |

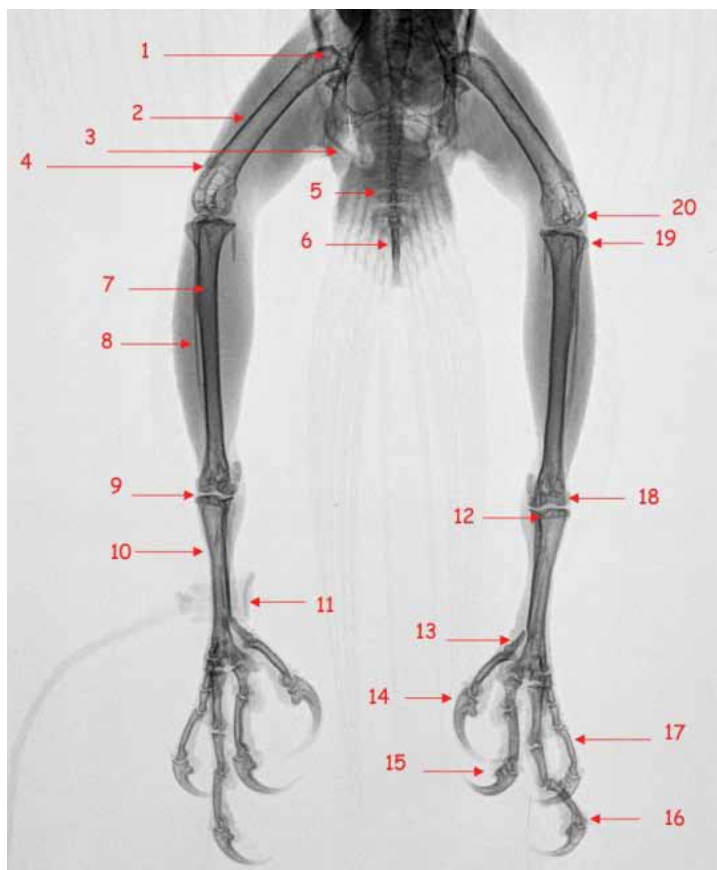


Figure 7. Craniocaudal view of the extended pelvic limbs

1. head of femur within acetabulum
2. body of femur
3. pubis
4. patella
5. free caudal vertebrae
6. pygostyle
7. body of tibia
8. fibula
9. intertarsal joint
10. body of tarsometatarsus
11. jess
12. condyles of tarsometatarsus
13. metatarsal I
14. digit I or hallux
15. digit II
16. digit III
17. digit IV
18. condyles of tibia
19. proximal extremity of tibia
20. condyles of femur

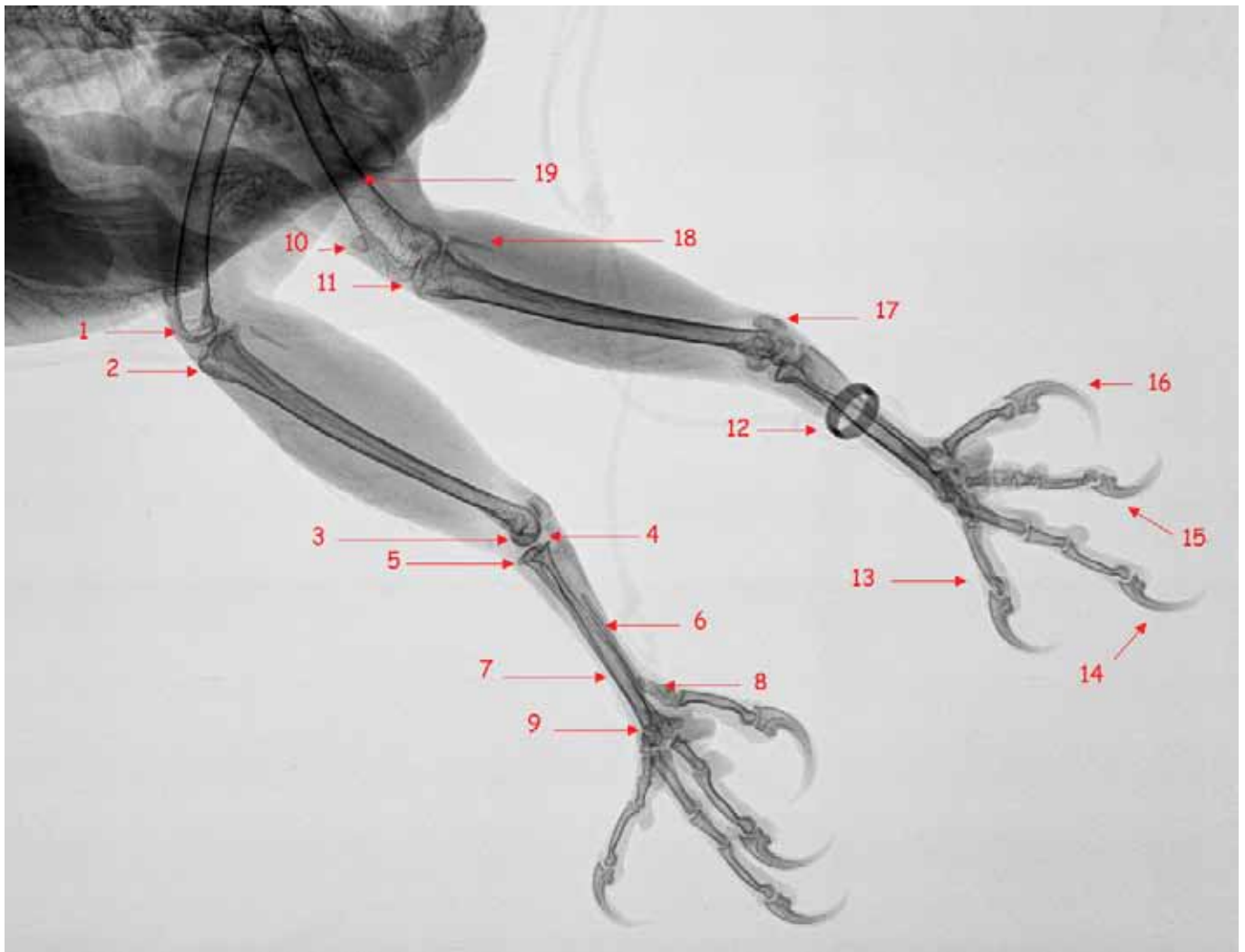


Figure 8. Lateral view of the extended pelvic limbs

- | | | |
|-------------------------------|--------------------------------|--|
| 1. condyles of femur | 9. trochlea of tarsometatarsus | 17. ossified portion of tibial cartilage |
| 2. cranial cnemial crest | 10. patella | 18. ossification in the medial head of m. Flexor hallucis longus |
| 3. condyles of tibiotarsus | 11. femorotibial joint | 19. body of femur |
| 4. intertarsal joint | 12. ID ring | |
| 5. cotyles of tarsometatarsus | 13. digit IV | |
| 6. ossified flexor tendons | 14. digit III | |
| 7. body of tarsometatarsus | 15. digit II | |
| 8. metatarsal I | 16. digit I | |

What's New in the Literature

Radiographic reference limits for cardiac width in peregrine falcons (*Falco peregrinus*).

Lumeij JT, Shaik MA, Ali M. 2011. *J Am Vet Med Assoc*. 238(11):1459-63.

To determine radiographic reference limits for cardiac width (CW) in peregrine falcons. Design-Retrospective cross-sectional study. Animals-100 peregrine falcons. Procedures-CW, thoracic width (TW), and sternal width (SW) were measured at the level of maximum CW on ventrodorsal radiographs of 64 falcons. Ratios of CW:TW and CW:SW were compared between positive pressure insufflation (PPI) radiographs and standard radiographs in 6 falcons. A hypothesis for the most accurate predictor of CW was formulated and validated in a new set of 36 falcons. Results-PPI radiographs had a significantly lower CW:TW ratio than did standard radiographs. The CW:SW ratio was unaffected. The 95% confidence interval for a regression-based predicted CW was 19% larger for any given TW, compared with SW. The difference between predicted and measured CW was significantly smaller with SW, compared with TW. Validation of these findings in a new data set of 36 falcons confirmed that prediction of CW when SW was used as the independent variable in a regression equation was superior to use of the CW:SW ratio or the CW:TW ratio and was superior to prediction of CW when TW was used as the independent variable in a regression equation. Conclusions and Clinical Relevance-Of the variables examined, SW seemed to be the most precise and most accurate predictor for CW in peregrine falcons. Thoracic width seemed inferior as a predictor for CW because TW was influenced by respiratory movements. The following formula can be used to predict the 95% confidence interval for CW in peregrine falcons: $CW = 0.83SW + 0.37 \pm 0.16$.

***Caryospora biarmicusis* sp.n. (Apicomplexa: Eimeriidae) infecting falcons from the genus *Falco* in Saudi Arabia.**

Alyousif MS, Alfaleh FA, Al-Shawa YR. 2011. *J Egypt Soc Parasitol*. 41(1):1-6.

The oocysts of *Caryospora biarmicusis* sp.n. is described from the feces of the lanner falcon, *Falco biarmicus*, from the falcon market in Riyadh City, Saudi Arabia. Sporulated oocysts are ovoid in shape, measuring 40.2 x 34.7 (37.5-42.4 x 32.9-35.7) microm; shape index (L/W) is 1.16 (1.08-1.31) microm. The oocyst wall is smooth and bi-layered. Micropyle and polar granule are absent, but an oocyst residuum is present. Sporocysts are spheroid, 20.1 (18.6-21.3) microm; with a smooth single-layered wall, lacking Stieda body. Sporocyst residuum is present as numerous small granules. Sporozoites are stout with a large single refractile body.

Disposition of marbofloxacin in vulture (*Gyps fulvus*) after intravenous administration of a single dose.

Garcia-Montijano M, Waxman S, de Lucas JJ, Luaces I, de San Andrés MD, Rodríguez C. 2011. *Res Vet Sci*. 90(2):288-90.

The pharmacokinetics properties of marbofloxacin were studied in adult Eurasian Griffon vulture after single-dose intravenous (IV) administration of 2mg/kg. Drug concentration in plasma was determined by high-performance liquid chromatography and the data obtained were subjected to compartmental and non-compartmental kinetic analysis. Marbofloxacin presented a volume of distribution at steady-state (V_{dss}) of $1.51 \pm 0.22L$ and total plasma clearance (Cl) of $0.109 \pm 0.023L/hkg$. The permanence of this drug was long in vultures ($T(1/2)(?) = 12.51 \pm 2.52h$; $MRT(?) = 13.54 \pm 2.29h$). The optimal dose of marbofloxacin estimated is 2.73mg/kg per day for the treatment of infections in vultures with $MIC(90) = 0.2g/mL$.

Avian pox infection in a free-living crested serpent eagle (*Spilornis cheela*) in southern Taiwan.

Chen CC, Pei KJ, Lee FR, Tzeng MP, Chang TC. 2011. *Avian Dis*. 55(1):143-6.

Avian pox viruses (APVs) have been reported to cause infection in diverse avian species worldwide. Herein we report the first case of APV infection in a free-living bird, a subadult crested serpent eagle (*Spilornis cheela*), in Taiwan. In addition to the typical wart-like lesions distributed on the cere, eyelid, and face, there were also yellowish nodules below the tongue and on the hard palate. Phylogenetic analysis of the 4b core protein gene showed that the APV is very close to that found in white-tailed sea eagle (*Haliaeetus albicilla*) in Japan recently. Because both cases are located on the same major flyway for migratory birds, the impact of this virus with regard to the wild and migratory raptor species along the East Asian-Australasian Flyway and West Pacific Flyway requires immediate investigation.

Fatal columbid herpesvirus-1 infections in three species of Australian birds of prey.

Phalen DN, Holz P, Rasmussen L, Bayley C. 2011. *Aust Vet J*. 89(5):193-196.

We document columbid herpesvirus-1 (CoHV-1) infection in two barking owls (*Ninox connivens*), a powerful owl (*Ninox strenua*) and an Australian hobby (*Falco longipennis*). Antemortem signs of

infection were non-specific and the birds either died soon after they were identified as ill or were found dead unexpectedly. Gross postmortem findings were also not specific. Microscopically, marked to massive splenic and hepatic necrosis with the presence of eosinophilic inclusion bodies in remaining splenocytes and hepatocytes was found in all birds. Herpesvirus virions were identified in liver sections from one of the boobook owls by electron microscopy. Using CoHV-1-specific primers and polymerase chain reaction, CoHV-1 DNA was amplified from tissue samples from all birds. A comparison of these sequences to previously reported sequences of CoHV-1 found them to be identical or to vary by a single base pair. These findings increase the number of known species of birds of prey that are susceptible to CoHV-1 infection and indicate that rock pigeons (*Columbia livia*) should not be included in the diet of captive Australian birds of prey.

Captive breeding of peregrine and other falcons in Great Britain and implications for conservation of wild populations.

L. Vincent Fleming, Andrew F. Douse, Nick P. Williams. 2011. *Endangered Species Research*. Vol. 14: 243–257. doi: 10.3354/esr00352

Numbers of captive-bred peregrine falcons *Falco peregrinus* and other species of falcon, which are subject to compulsory registration in Britain, increased substantially over the period from 1983 to 2008, such that >7800 were registered in captivity in 2007. Much of this increase has been due to the international demand for, and consequent production of, novel hybrids for international trade. Over the same period, the wild peregrine population recovered from pesticide-induced decline and expanded its range into lowland Britain. Wild and captive peregrine ‘populations’ are linked through the taking into captivity of wild birds and through the escape of captive birds. Such escapes occur in numbers (>1500 over the study period from 1983 to 2007) that are potentially capable of enabling recruitment to the wild; escaped birds are predominantly hybrid and peregrine falcons, and the latter may be of mixed or uncertain provenance. Escaped peregrines are under-recorded by birdwatchers compared with non-native falcons. The benefits and risks for wild peregrine populations of the captive breeding of falcons are considered, especially with respect to any potential human-induced genetic introgression from escaped falcons.

Long-term health effects of harness-mounted radio transmitters in red kites (*Milvus milvus*) in England.

Peniche G, Vaughan-Higgins R, Carter I, Pocknell A, Simpson D, Sainsbury A. 2011. *Vet Rec*. 17; 169 (12):311.

In 1989, the Nature Conservancy Council and the Royal Society for the Protection of Birds commenced reintroduction of the red kite (*Milvus milvus*) according to International Union for Conservation of Nature criteria. Following 22 years of intensive effort, the red kite reintroduction programme has been a success with an estimated 1000 pairs now breeding in England. Post-release health surveillance is ongoing and has been achieved through radio-tracking, monitoring breeding at nest sites and pathological examinations of any red kites found dead. Tail-mounted radio transmitters were fitted from 1989 with harness-mounted radio transmitters being preferentially used since 2000. Since 2000, 180 individuals have been recovered for postmortem examination. Eighteen of these birds had previously had a harness-mounted radio transmitter fitted and four of these (22 per cent) had moderate to severe lesions associated with the presence of the harness and radio transmitter including chronic necrogranulomatous inflammation, deep muscular exposure and distorted muscular conformation. Failure to breed was also reported in two of these individuals over the preceding year(s), although it is not known whether the presence of the harness contributed to this failure. Duration of deployment may have been a significant factor in the formation of these lesions as those with lesions (n=4) had a statistically significant (P=0.009) longer duration of deployment compared to those without lesions (n=14). No lesions were reported in those red kites fitted with tail-transmitters.

Missense SNP of the MC1R gene is associated with plumage variation in the Gyrfalcon (*Falco rusticolus*).

X. J. Zhan, A. Dixon, N. C. Fox and M. W. Bruford. 2011. *Animal Genetics*. doi:10.1111/j.1365-2052.2011.02263.x

A single nucleotide polymorphism (MC1R: c.376A>G) in the MC1R gene was found to be highly correlated with pigment phenotype in the Gyrfalcon. Homozygous genotypes c.376GG and c.376AA were found to dominate the extreme white and dark plumage types respectively, and heterozygotes occurred mainly in intermediate phenotypes. However, some heterozygotes were associated with extreme phenotypes, indicating that melanism/albinism might also involve other loci.

Two short communications:

Preening Behavior of Adult Gyrfalcons Tagged with Backpack Transmitters. Travis L. Booms, Philip F. Schempf, and Mark R. Fuller. *J. of Raptor Res.* 2011.45(3):264-267 doi: 10.3356/JRR-10-115.1

Autumn migration of an Amur Falcon *Falco amurensis* from Mongolia to the Indian Ocean tracked by satellite. Andrew Dixon, Nyambayar Batbayar and Gankhuyag Purev-Ochir. *Forktail* 27 (2011): 81-84.

Book Reviews

Observations on Two New Books: *The Art of Falconry from Arabia Westward: Training and Conditioning Captive Raised Falcons* by Kenton Riddle and *Footprints on the Toilet Seat – Memoirs of a Falcon Doctor* by David Remple

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In the last 2 years we have seen the publication of two books written by two of the great pioneers of falcon medicine in the Middle East; Kenton Riddle and David Remple.

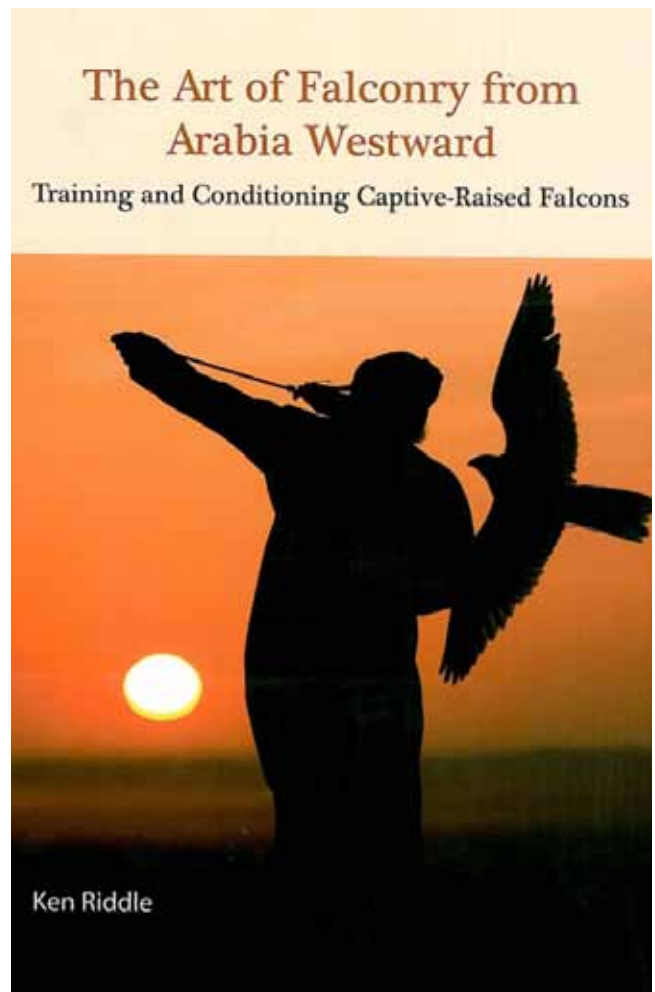
The Art of Falconry from Arabia Westward: Training and Conditioning Captive Raised Falcons. Kenton Riddle. Abu Dhabi Authority for Culture and Heritage, Culture Foundation, 2009.

Footprints on the Toilet Seat – Memoirs of a Falcon Doctor. J. David Remple. Western Sporting Press, 2010.

They are two very different books. The first by Kenton Riddle is a manual sharing the authors experience of falconry and his particular insight into Arabic falconry after a lifetime working for the ruling al Nahyan family in the UAE. So many books have been written on falconry, but this one I feel will survive the test of time. Dr Riddle is not only an experienced veterinarian, he is a master falconer who through his access to the falconers and falcons of H.H. Sheikh Zayed al Nahyan has documented and understood Arabic falconry in a way few other Westerns are qualified to match. His book provides fresh insights on both the 'science' and 'art' of falconry.

The Art of Falconry from Arabia Westward, while written by a veterinarian, focuses mainly on the training of captive-raised falcons and only indirectly covers health. This is a book I wish I had read at the start of my career as a falcon veterinarian. It is a little ironical that I only found the time to read it on the plane as I left behind me my own life as a falcon clinician. The insights that Kenton has documented on the manner falcons are trained by experienced Arab falconers are unique. These falconers train large groups of falcons and intensively condition them to be at ease in human company. Particularly interesting parts are the chapter

on 'tangese', which is the centuries old taming process used by Arabic falconers to intimately bond with wild falcons and the more current section on the 'ride simulator' to get the birds prepared for breakneck driving in four wheel drives on hunting trips.



Kenton is not afraid of writing about Arabic falconry 'as it is' and describes the use of seeling, the use of live quarry and live lures. These are sensitive topics for falconers and veterinarian hailing from countries with strong traditions of animal rights and more squeamish sensibilities. I must say that reading Kenton's book gave me insights into techniques I formerly disapproved of. After reading this book I have a much better understanding of these techniques.

This is a good book for anyone who has an interest in falcons and falconry. I would even go as far as to say it should be compulsory reading for anyone working with birds of prey in the Middle East, especially veterinarians.

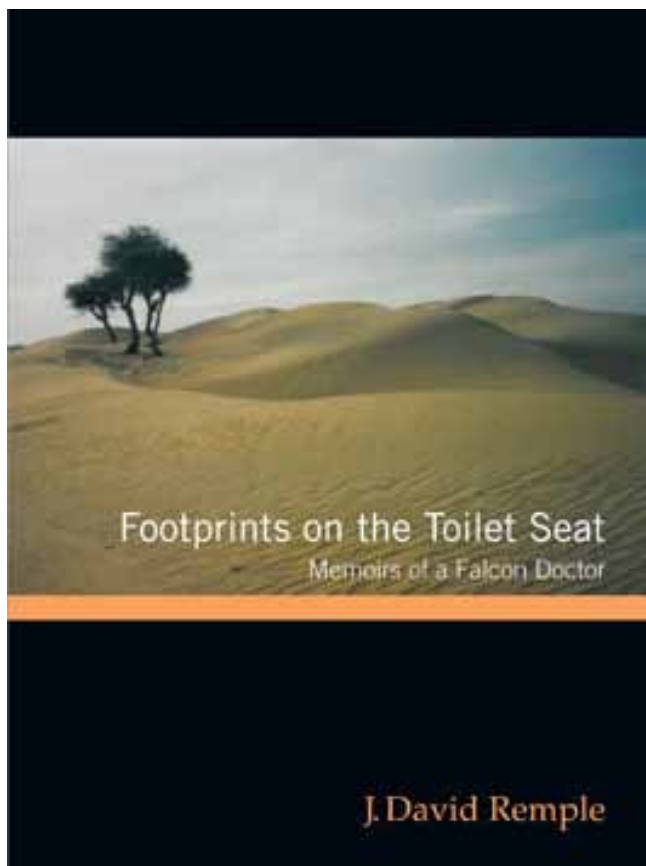
Kenton also writes a commendable ending on the ethical standards of falconry in the 21st Century. His end piece deserves repeating because some constituencies of Arabic falconry are in need of developing an ethical code:

It is easy to succeed when the goal focuses on hunting the maximum number of kills for the pot or the ego.

*Falconers that focus on the numbers of game killed often do so to provide fodder for boasts among peers. However, they are also really big losers, and are practicing an artless form of falconry, a hunting philosophy which is unsuitable to be passed on to young people and falconry devotees in the 21st century. Such a hunter would be better off if he took a shotgun and killed a 'pile' of birds and then went home and watched a football game on TV. A quote from Aldo Leopold offers some insight into the falconer's ethical challenge. **'A peculiar virtue of wildlife ethics is that the hunter ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts they are dictated by his own conscience rather than by a mob of onlookers. It is difficult to exaggerate the importance of this fact.'** Here then is that for which we should strive. It is a personal philosophy that demands integrity and the utmost ethical standards when hunting wild game. The intrinsic value of such a hunt is a fair and honourable flight which pits predator against prey. This kind of personal philosophy is inherently conservation-oriented and has an element of sustainability and built in respect for nature. This is the legacy we desire to leave for future generations: falconers striving for the greater good in the art and practice of falconry as hunters of conscience.*

Footprints on the Toilet Seat will prove a fascinating read to anyone who has worked on raptors in the region and also to anyone interested in knowing what it is really like behind the palace walls working for a ruling family.

Full of tales and anecdotes it provides an insight into the ups and downs of trying to bring modern Western veterinary medicine to a traditional group of falconers. Be warned, if you crossed swords with either David or Cheryl Remple, be you Sheikh or expatriate, then you may find yourself portrayed in less than complimentary terms. You have been warned!



David Remple's book is not a manual on falconry, it is a memoir of his time working as director of Dubai Falcon Hospital, the first dedicated falcon hospital established in the Middle East by HH Sheikh Hamdan bin Rashid al Maktoum.

News and announcements

CITES, CMS and the Mongolian Saker Falcon trade

The 25th meeting of the CITES Animals Committee was held in Geneva (Switzerland), from 18 to 22 July 2011. The CITES Animal Committee provides the technical and scientific basis for the sustainability of international trade in live specimens, parts and derivatives from over 4,500 species of animals. Over 200 delegates, from fifty countries, attended the meeting. The Animals Committee finally recognized the progress made in the conservation of the saker falcon (*Falco cherrug*) in Mongolia and endorsed the positive management regime for this species used for hunting activities in the Middle East. The Committee agreed to Mongolia's proposed export quota of 300 live specimens for 2011. In closing the meeting, CITES Secretary-General, John E Scanlon, highlighted that: "sound science goes to the core of the Convention. The work of the Committee over the past five days again highlights the very operational and pragmatic nature of CITES in addressing 'real world', on-the-ground conservation and sustainable use challenges".



Amarkhuu Gunga setting-up a nest camera at an artificial nest in Mongolia (Photo: Stig Frode Olsen)

The 61st meeting of the Standing Committee CITES convened in Geneva (Switzerland) from 15-19 August 2011. Approximately 300 participants attended the meeting, including Standing Committee members, observer parties, and inter- and non-governmental organizations. SC61 agreed to a number of recommendations, including an oral report by Ibero Solana, Chair of the 25th meeting of the CITES Animals Committee, which discussed the key topics that had been covered during the meeting, including the programme for the conservation and sustainable use of saker falcon. The Secretariat introduced the document on cooperation with the UN Convention on the Conservation of

Migratory Species of Wild Animals (CMS), highlighting the planned joint activities for 2012-2014, for the conservation and sustainable use of shared species and noted that CMS received a proposal from the EU to list saker falcons under Appendix I of CMS at the next COP in Bergen (Norway) from 21-25 November 2011. However, the EU proposal states that "If the 25th meeting of the CITES Animals Committee (Geneva, 18-22 July 2011) concludes that the population of *Falco cherrug* from Mongolia is sustainably managed, the proposal will be amended before COP10 as follows: To list *Falco cherrug* on Appendix I, excluding the population of Mongolia".

Following the Animals and Standing Committee meetings of CITES in August the Government of Mongolia passed Government Resolution No. 251. This resolution set the national quota for Saker export as 240 birds in 2011 and appointed the Ministry of Nature, Environment and Tourism (MNET) as the government department responsible for organising the export of Sakers in accordance with the existing legislation. Subsequently MNET issued the Ministerial Order No. A276. This order says that the national quota of 240 must be implemented, that the State Secretary of MNET will be responsible for establishing contracts with foreign parties/countries purchasing Sakers and to organise their export and that the Director General of Environment and Natural Resources Management Department will be responsible for arranging the enforcement agencies for monitoring these processes. A second Ministerial Order No. A278 established the composition of this monitoring team mentioned above, which comprised 12 people from various Governmental departments and agencies and external bodies.

Saker Falcon trapping and export in Mongolia commenced in August 2011.

Electrocuted Saker found in Turkey

Saker LIFE // Mon, 10/10/2011 (Source: <http://sakerlife2.mme.hu/en/content/electrocuted-sakers>)

Another Saker has been electrocuted in September- this time in Turkey. The victim is a satellite-tracked 1cy Crimean Saker. It has been the fifth satellite-tracked Saker killed by electrocution since 2007. In the frame of various programmes (but mainly the LIFE projects), 71 Sakers were tagged with satellite-received transmitters in Hungary, Slovakia, Austria, Romania and Ukraine. Eight of them were adults, the rest were juveniles.

Five out of 71 Sakers were certainly electrocuted (remains have been found):

1 adult (3cy+) male in Hungary (2009-2010 winter, near Tököl);

1 immature (2cy) female in Hungary (2010 August, near Törökszentmiklós – the pylon was insulated right after removing the carcass, there were dozens of other carcasses under it);

1 juvenile (1cy) male in Russia (2008 September);

1 juvenile (1cy) female of Slovak origin in the Czech Republic (2011 August);

1 juvenile (1cy) male of Ukrainian origin in Turkey (2011 September).

Three out of five Sakers were electrocuted within four months after fledging.



Electrocuted Saker in Turkey, September 2011
(Photo: Musa Celik)

The Third International Festival of Falconry

The clock is counting down to the 10th December 2011 when falconers from all corners of the world will converge on Al Ain, Abu Dhabi.

Building on the success of 2009's festival, the Third International Festival of Falconry will be the largest gathering of falconers the world has ever seen and this time will open in the desert. Falconers can visit or stay in the Desert Camp and experience the sights and sounds of traditional Arabic falconry. Teams of eagle and falcon trainers, camels and salukis will preparing and some hawking parties will head out into the dunes to catch houbara and hare.



Photo: Linda Wright

On 14 December, everyone will return to town and prepare for the public days (16 & 17) at the Jahili Fort. Visitors are invited to enjoy the full programme of arena events, national camps, art and photography exhibitions and attend the Falconry workshops (15, 16 & 17). The workshops will cover a huge variety of topics and interest biologists, conservationists, vets, teachers, policy-makers as well as falconers.

The highlight of the public days will be the Grand Parade in which representatives from over 80 countries converge on the main arena. National dress will be order of the day and we hope this will demonstrate that despite cultural and geographical differences, many around the world have a language in common and that is the language of falconry.



Photo: Linda Wright

For more information please see
www.falconryfestival.com

وضع الصقر البربري *Falco pelegrinoides* في الماضي والحاضر في إيران

أبو القاسم خالغزاده^{1*} و أفشين زارعي² ومحمد توحيدفر²

الإرتباط:

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يراجع هذا المقال كافة البيانات المتوفرة عن وضع الصقر البربري (الوكري/المغربي) *Falco pelegrinoides* في إيران. تم البحث في المطبوعات القديمة وجمعت البيانات التي لم تنشر من سبعينيات القرن الماضي إلى العقد الأول للقرن الحالي. تظهر الخريطة كافة السجلات القديمة والحديثة للنوع في 17 من محافظات إيران. يمكن مشاهدة النوع طيلة أيام السنة ويبدو أن أعدادها لم تتناقص. لا يوجد سوى سجلين مؤكدين عن التكاثر في العقد الأول من القرن الحالي، وتقدم هذه الورقة تقريرا عن موقع تكاثر عثر عليه حديثا في جبال زاغروس. يبدو أن الصيد غير المشروع هو أكثر العوامل تهديدا للنوع في إيران.



Falco peregrinus brookei Atlas Mountains, Morocco © Andrew Dixon

صور للصقارة في أفغانستان من مجموعة صندوق انتمان تراث الصقارة

يافيني شيرجالين

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صدرت في الغرب خلال السنوات العشرين الماضية ثلاثة كتب عن الصقارة في أفغانستان: كتابين للمؤلف الأفغاني سردار محمد عثمان هما "الصقارة في أرض الشمس" *Falconry in the Land of the Sun* في عام 2001 و "تأملات صقار أفغاني" *Musings of an Afghan Falconer* في عام 2005، فيما كان كتاب آخر صغير قد صدر باللغة الألمانية في عام 1980 بعنوان "الصقارة في أفغانستان" من تأليف جيرد كوهنرت Gerd Kühnert (Habelt, Germany) *"Falknerei in Afghanistan"*. قوبل صدور هذه الكتب الثلاثة بترحاب كبير وأضافت قدرا كبيرا لمعرفتنا بالصقارة في هذا البلد البعيد والذي لا يعرف عنه الكثير. يرجع التركيز على أفغانستان في هذه المقالة إلى أن المعلومات عن الصقارة، وعلى الرغم من صدور الكتب المشار إليها، ما زالت محدودة للغاية.

الصيد بالصقور في منطقة الشرق الأوسط : تقييم للمعرفة البيئية للصقارين بالحبارى الآسيوية *Chlamydotis macqueenii*

ياسر حمدان الخروصي وحمده حمد الأميري

الارتباط

الصندوق الدولي للحفاظ على طيور الحبارى، ص.ب. 129555 أبو ظبي، الإمارات العربية المتحدة. بريد إلكتروني yalkharusi@ead.ae

تعرف الحبارى الآسيوية *Chlamydotis macqueenii* (الشكل 1) تاريخيا في الصقارة العربية على أنها الطرائد المفضلة للصقارين في منطقة دول مجلس التعاون الخليجي. إلا أن الصيد غير المنظم والاتجار غير المشروع وتدمير الموائل ساهمت لسوء الحظ في انخفاض بالغ في أعدادها في البرية (Combreau et al. 2006). في رد فعل لهذا الوضع التزم الصندوق الدولي للحفاظ على الحبارى (IFHC) ومن خلال المركز الوطني لبحوث الطيور (NARC) باستعادة أعداد الحبارى الآسيوية عبر مجال تواجدها الذي يمتد من الأجزاء الجنوبية من منغوليا إلى جنوب الجزيرة العربية وذلك من خلال برامج الإكثار والإطلاق/الإعادة. قام الصندوق بالتوازي مع البحوث البيئية بوضع استراتيجية تعليمية تهدف إلى إيصال نتائج الأبحاث العلمية حول بيئة الحبارى الآسيوية إلى الصقارين بصفتهم أصحاب المصلحة الرئيسيين في حفظ النوع. جرى استخدام عدة أساليب لتحقيق هذا الهدف بما في ذلك المؤتمرات والمعارض والعروض التلفزيونية والمقالات الصحفية واللقاءات الفردية هدفت جميعها إلى ترسيخ مفهوم الصيد المستدام لدى جماعات الصقارين. نلخص في هذا التقرير النتائج الرئيسية لمسح شامل أجري في عام 2009 عن المعرفة البيئية لصقاري دول مجلس التعاون الخليجي عن الحبارى الآسيوية الناتجة.

منغوليا: أعشاش اصطناعية لصقر الغزال

كان هناك تلهف بانتظار موسم التزاوج بعد أن قامت فرقنا من مركز علم و صون الحياة البرية Wildlife Science and Conservation Center في الخريف السابق بإكمال إقامة 5000 عشا اصطناعيا أضيفت إلى شبكة من 250 عشا تجريبيا كان قد سبق إقامتها. أقيمت هذه الأعشاش الاصطناعية الـ 5000 في شبكة ضمن 20 مقاطعة إدارية (250 عشا لكل دائرة) موزعة عبر مساحة شاسعة تبلغ 230x730 كلم في وسط منغوليا. ورعت الأعشاش الاصطناعية على مسافة 1.5 كلم من بعضها البعض وغطت 10,000 كلم² من سهوب منغوليا. قامت خمس فرق من المساحين بالتنقل حول شبكات الأعشاش الاصطناعية لتسجيل إشغالها من قبل طيور جارحة متكاثرة. كانت صقور الغزال أكثر الطيور الجارحة المتكاثرة تواجدا في الأعشاش الاصطناعية، وسجل 198 زوجا واضعة للبيض منها (بالمقارنة مع 177 من الصقور الحوامة، و171 من الغربان 83 من العواسق العادية)، مما يدل على أوضاع صحية نسبية لأعدادها في وسط منغوليا. كان هناك تراوح كبير بين أعداد صقور الغزال المعششة في كل شبكة، بين الحد الأقصى لـ 25 زوجا في شبكة واحدة وبين عدم وجود أي صقور غزال على الإطلاق في ثلاث شبكات، لكن تجاربنا في الشبكات التجريبية تشير إلى أن عدد الصقور المتزاوجة في أعشاشنا الاصطناعية سيرتفع خلال السنوات القليلة القادمة.

أبحاث في صقور الشاهين المهاجرة في أوراسيا

نستخدم في هذا المشروع القياس عن بعد بواسطة الأقمار الصناعية والتحليل الجيني لدراسة صقور الشاهين المهاجرة التي تتكاثر في مناطق التنдра الروسية، وذلك بهدف تحديد مدى الاختلاف الجيني عبر نطاق التكاثر في شمال أوراسيا بين السلالتين المميزتين وهما شاهين الكاليس *Falco peregrinus calidus* وشاهين السلالة اليابانية *Falco peregrinus japonensis*. ستقدم تحليلاتنا معلومات عن التاريخ التطوري للشواهد الأوراسية ومدى تدفق الجينات عبر نطاق التكاثر. سيقدم التقرير عن بعد بالأقمار الصناعية بيانات غير مألوفة عن سلوكيات الهجرة ستمنحنا نظرة عميقة في الآليات المسببة للحفاظ على التنوع الجيني لأعداد الشاهين في شمال أوراسيا. بالإضافة إلى ما سبق، ستمكنا المعرفة التفصيلية عن مناطق التشنئية ومسارات الهجرة من تحديد التهديدات المحتملة لأعداد معينة خارج موسم التكاثر.

بعض الملاحظات التاريخية عن صيد الصقور بالفخاخ في جنوب غرب إيران

س. كنت كارني

الارتباط:

المدير المؤسس ومدير المقتنيات (الفخري) لسجلات الصقارة

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قضيتُ تسعة أشهر خلال الأعوام 1972-1974 في مسح لهجرة الصقور الكبيرة في إيران. قمت من يناير إلى مارس 1974 بزيارة للمناطق المتاخمة للساحل الإيراني لشمال الخليج الفارسي. تم الحصول على المعلومات المقدمة هنا خلال فترة هذه الأشهر الثلاثة، وبما أن تلك الفترة تقع خارج موسم الصيد بالفخاخ فإن الصور المستخدمة في هذا التقرير قد أخذت في أماكن أخرى من البلاد وضمنت كأمثلة للصقور التي تصاد بالفخاخ في إيران. لدى غياب الصقور المهاجرة حاولت أن أحصل على المعلومات عن محاولات الصيد التجاري بالفخاخ في المنطقة. تم تجريم الصيد بالفخاخ والاتجار غير الشرعيين للصقور من خلال التشريعات الإيرانية للحماية التي سنتها الدائرة الإيرانية للحفاظ على الطبيعة (سازمان حفاظت محیط زیست) في عام 1972، ولذا فإن المواد المقدمة هنا هي في الأساس ذات أهمية تاريخية ورغم أنها ليست مبنية على مشاهدات للهجرة، فإنها تلقي الضوء في نفس الوقت على تواجد صقور مهاجرة على الجانب الشمالي الشرقي للخليج وعلى نشاطات صاندي الصقور والاتجار بالصقور في المنطقة.

لحفاظ على الطبيعة ومواردها IUCN واتفاقية الأنواع المهاجرة CMS ودعمها لمشاريع مثل أركايف ARKive.

تضم أهداف مجموعة الشرق الأوسط لأبحاث الصقور تقديم التقارير عن الدراسات الحقلية للصقور وتعزيز وعي أكبر بالصقارة وإرثها الثقافي. نقدم هنا وتحقيقاً لتلك الأهداف تقريرين عن الصقور في إيران يقدم أحدها تفاصيل وضع الصقر البربري (الوكري/المغربي) *Falco pelegrinoides* في الدولة ويقدم الثاني سرداً تاريخياً لصيد الصقور بالفخاخ فيها. إضافة لذلك يقدم يافيني شيرجالين صوراً للصقارة في أفغانستان كوسيلة لتوثيق التقاليد العريقة لهذه الرياضة في بلد لا يتوفر إلا القليل من المعلومات عنه لدى العامة.

يمثل الصقر البربري قضية تصنيفية جدية بالاهتمام، ففي حين تعتبره بعض السلطات كتحته نوع لصقر الشاهين *Falco peregrines*، تعتبره سلطات أخرى نوعاً منفصلاً ينقسم بدوره إلى تحته نوعين: الشكل الغربي (المغربي) *pelegrinoides* والشكل الشرقي (البابلي) *babylonicus*. تعتبر أوساط الصقارة هذا الشكل الأخير مميزاً ويسمى الشاهين الأحمر العنق Red-naped Shaheen. تتجهن كل تلك الأصناف بحرية في الأسر منتجة ذرية خصبة. لا يتوفر للأسف إلا القليل من المعلومات عن الأعداد البرية لإعطاء استنتاج نهائي بشأن العزلة الإنجابية بين صقور الشاهين والبربري، ونحتاج في نفس الوقت إلى دراسة أكثر تفصيلاً لتمييز صقور الشاهين والبربري والأحمر العنق في إيران حيث يمكن أن تتكاثر تلك الأصناف الثلاثة.

لا يتوفر الكثير من المقالات البيطرية في هذا العدد لأن صدوره يتزامن مع انتقال أحد محرري فالكو (توم بيلي) من عمله البيطري في دبي ليتسلم منصباً في تربية الصقور في المملكة المتحدة، إلا أننا أعدنا نشر سلسلة من الصور للتشريح الشعاعي للصقور والتي كانت جزءاً من مقالة أكبر نشرتها ديانا كويلكوييني ومؤلفين مشاركين في مجلة (Exotic DVM 2008, Vol. 10.1). نأمل أن نعود إلى الخدمة المعتادة في عددنا القادم ونرجو من العاملين في المحال البيطري الاستمرار بإرسال مقالاتهم إلى توم بيلي على عنوانه المبين في ظهر الغلاف الأمامي.



Houbara © Lee O'Dwyer (<http://www.wildgallery.co.uk/>)

في ديسمبر 2011 سيستضيف كل من نادي صقاري الإمارات وهيئة أبو ظبي للثقافة والتراث المهرجان العالمي الثالث للصقارة في مدينة العين بأبو ظبي، في احتفال باعتراف منظمة اليونسكو بالصقارة كتراث ثقافي حي، وإدراجها رسمياً ضمن قائمة اليونسكو للتراث الثقافي غير المادي للبشرية في نوفمبر 2010. تحتل الصقارة مقاما عالياً في دول الخليج لقيمتها الثقافية الهامة وكذلك لتأثيرها المحتمل على الصقور البرية وأنواع فرانسها (وطير الحبارى بصفة خاصة).

ينعكس هذا الانقسام في الوسيلة التي تنظر وتتعامل بها المنظمات والاتفاقيات الدولية المختلفة إلى الصقارة، ولا سيما الصقارة العربية. فبينما تعترف اليونسكو بالأهمية الثقافية للصقور من ناحية؛ يعتقد الكثير من دعاة حماية البيئة من ناحية أخرى أن الصيد بالصقور العربية هو العنصر الدافع الرئيسي وراء انخفاض أعداد صقور الغزال وطيور الحبارى، وبالتالي فإن هناك حاجة إلى تنظيم مُحكم للتجارة في أنواع الصقور من خلال الاتفاقية الدولية لتجارة أنواع الحيوانات والنباتات البرية المعرضة للانقراض يهدف إلى ضمان عدم تهديد التجارة الدولية لبقاء الأنواع في البرية. لا تسمح الاتفاقية حالياً بالاتجار في صقور الشاهين والحبر التي تصاد في البرية. ويرغب الكثيرون من العاملين في الصون ضم صقر الغزال إلى غيره من الأنواع الهامة للصقارة في الملحق 1 من الاتفاقية، ومن شأن الاقتراح المقدم من الاتحاد الأوروبي لإدراج صقر الغزال في الملحق 1 لاتفاقية الأنواع المهاجرة أن يكون له نفس التأثير، وإن كانت منغولياً، بوصفها الدولة الوحيدة التي تقوم حالياً بالاتجار بصقور الغزال البرية، ستعفى من ذلك.

نقدم في هذا العدد من نشرة *Falco* إيجازاً لأعمال البحث والصون للصقور البرية التي تتم نيابة عن هيئة البيئة - أبو ظبي. إن تلك الأعمال التي تمولها هيئة حكومية في إمارة أبو ظبي وتجري في دول أخرى تؤكد الالتزام العالمي لهيئة البيئة - أبو ظبي في تحقيق مهمتها في "حماية البيئة والمحافظة عليها من أجل حياة أفضل للجميع". قام "المستشارون العالميون للحياة البرية" بالأعمال التي نصفها في هذا العدد بالتضامن مع مجموعة من المنظمات الشريكة في عدة دول.

المركز الوطني لبحوث الطيور (NARC) هو مركز تضمه هيئة البيئة - أبو ظبي يضطلع بنشاطات الأبحاث والصون لطير الحبارى (من خلال الصندوق الدولي للحفاظ على الحبارى) وللصقور. ويقدم ذلك الصندوق في هذه النشرة أيضاً نتائج مسح أجرته مع الصقارين في دول الخليج لتقييم معرفتهم البيئية بطير الحبارى. إن الهدف من هذه المشاريع التي تمولها إمارة أبو ظبي تعزيز صون الحبارى والصقور، والتوفيق بين تقاليد الصقارة العربية والاستخدام المستدام للموارد في كافة أنحاء مجال تواجد الحبارى والصقور. إن الهدف الأوسع لهيئة البيئة هو إنقاذ الصقور والحبارى وغيرها من أنواع الطيور من الانقراض الأمر الذي تشهد به مشاركتها في الهيئات الدولية كالإتحاد العالمي

