FALCO

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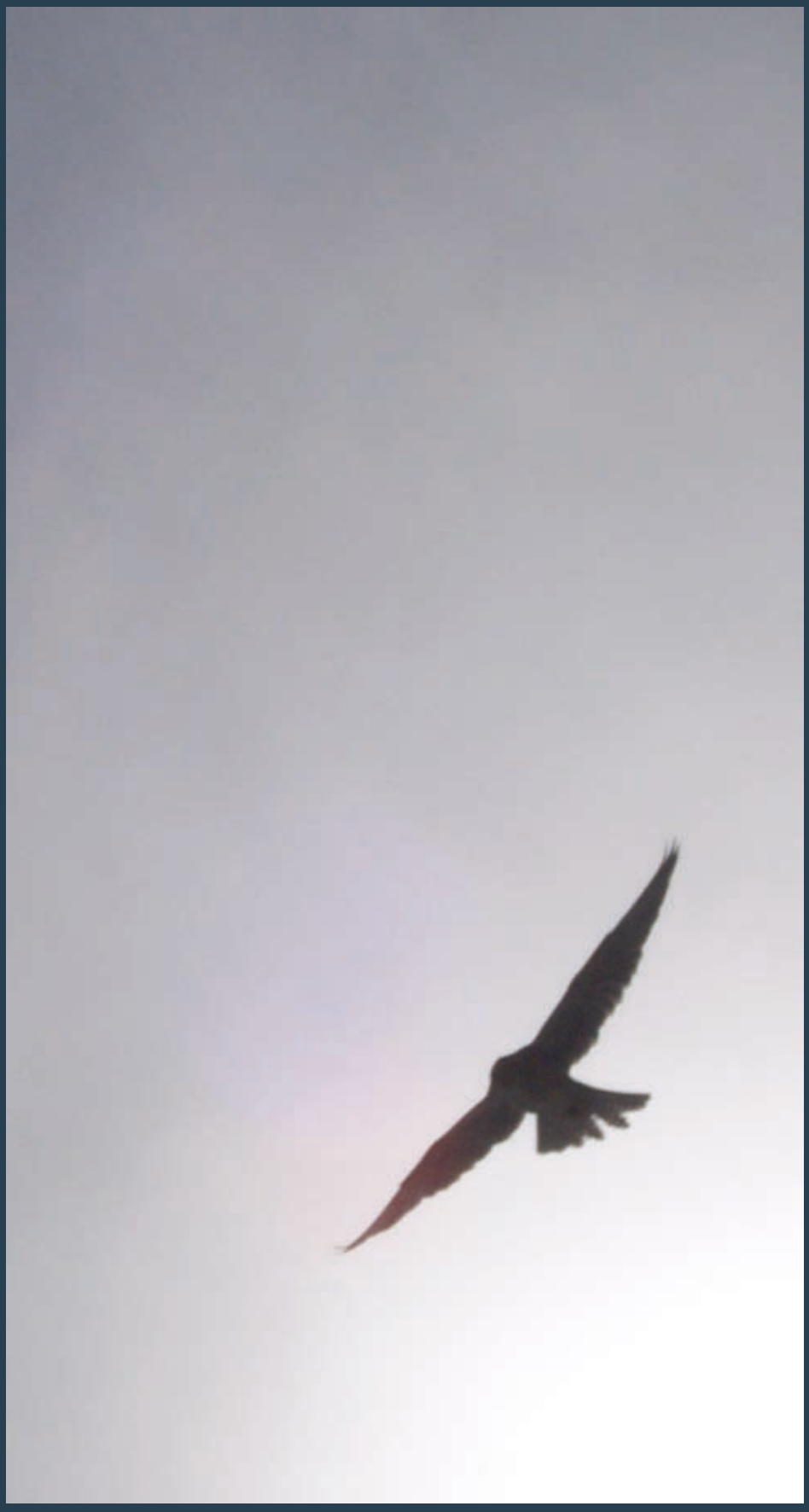

MEFRG Objectives:

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.

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Previous issues of **FALCO** as well as instructions for authors can be downloaded from:

http://www.falcons.co.uk/default.asp?id=131

also see Saker Conservation information portal:

www.savethesaker.com

More artificial nests for Saker Falcons ready to be put up in the open steppe of Mongolia, November 2006.

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

Cover photograph: Saker, Mongolia 2006 (Mark Etheridge)..

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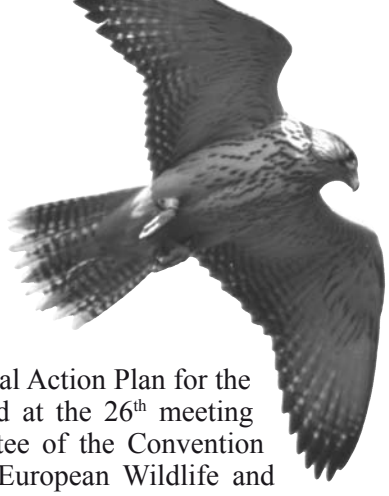

Editorial

The European International Action Plan for the Saker Falcon was ratified at the 26th meeting of the Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) in Strasbourg in November 2006. The Bern Convention requires signatory parties to take the necessary steps to promote policies for the conservation of endangered and vulnerable species in particular. Conservation of the Saker, regarded as globally threatened, now has a higher priority in Europe. We have summarized the European status of the Saker in this issue and it can be seen that the current population is estimated to be between 550 and 1000 breeding pairs. In order to determine the success or failure of any conservation measures implemented under the International Action Plan it is necessary that population estimates in each country are robust. Currently, no state has produced population estimates that have some form of precision measure and most countries have only limited or no quantitative data at all. The South-east Europe Saker Network was established in 2006 via funding from the Environment Agency of Abu Dhabi (EAD) to try and rectify this situation (see News & Announcements).

The International Action Plan for the Saker Falcon identifies three potential threats i.e., habitat loss, destruction or removal from the wild and genetic introgression. The latter relates to the perceived risk of escaped falconry birds, mainly hybrids, interbreeding with wild individuals. A hybrid working group has now been established to assess the potential risk and studies to evaluate the situation include genetic analyses of wild populations. At present, it is not clear that hybrid genes are actually present in European populations of Sakers but even if they are, it is not certain where they have come from. The captive-bred birds used in reintroduction efforts are a potential source in addition to any escaped falconers birds. This is a debate that is currently gathering momentum and one that we shall report on in future issues of *Falco.*

We are grateful to have an article on Lesser Kestrels submitted to us from Iran, an area from which we have little ornithological data. This diminutive falcon shares its steppe habitat with the Saker Falcon across much of its global breeding range and large-scale habitat changes that affect Lesser Kestrels are also likely to have an impact on Saker populations. Concern over the conservation of smaller raptors was highlighted at a conservation workshop in Sharjah, at which it became clear that the population of the Sooty Falcon in the Arabian peninsula has been significantly over-estimated. The EAD will fund a survey to assess the conservation status of the Sooty Falcon in the UAE during 2007.

Apart from the situation with Sooty Falcons the Raptor Working Group at the Sharjah workshop considered that the most pressing issues concerning raptor and owl conservation in the Arabia region were the need for much greater public awareness of threats and issues facing these species and for more detailed biological studies of most raptor species to address their conservation status and identify population trends. However without funds to support education programmes and biologists the outlook for many species will not improve. There is a need for regional governments to develop structured systems of funding to support local scientists studying raptors as well as other wildlife issues. Conservationists also need to become more proactive and seek sponsorship from regional companies.

The illegal trade in wild falcons continues to be a problem for the conservation of the large falcons as two articles in this issue demonstrates. We are grateful to Ali Borhany Kiya for updating us on the issues affecting raptors in Iran and to An Pas and Paul Vercammen from the UAE who describe the appalling welfare issues of a consignment of birds confiscated *en route* from Iran to Qatar. Enforcement of the law as undertaken by the Sharjah coastguard in this case may serve as a deterrent to others who might be willing to embark on the illegal smuggling of wildlife. However, at the end of the day there needs to be more awareness and discussion of the problems caused by the continued use of wild falcons by the falconers themselves. Arabian falconry has made some steps over the last decade to clean up its act, but still has a long way to go. With the widespread availability of captive bred falcons there appear to be few excuses for the continued use of wild falcons. The challenge for conservation organizations is how to influence falconers in positions of political influence, who could, by setting the right example influence the wider falconry community at large.

As for the review of the legal trade in Saker Falcons that has been rumbling on at CITES meetings since 2003 there appears to have been some conclusion. The CITES committees had previously made recommendations which have now been notified to all parties (see News & Announcements). We remain uncertain as to the implementation of this because Mongolia was certainly issuing export permits up until November 2006 at least. We believe that only Mongolia and possibly China, are still involved in exporting wild Saker Falcons caught within their borders using CITES permits. We are still waiting to see if CITES has any teeth and the willingness to demand implementation of its own recommendations.

We thank our veterinary contributors for submitting such a wide range of practical and informative articles to improve the health of falconers' birds. The generous support of falcon hospitals by enlightened and committed sponsors really has enabled the Middle East to lead the way in raptor medicine.

Saker Falcon breeding population estimates. Part 1: Europe

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Summary

The European Saker population is currently restricted to central and eastern Europe, with an estimated of population of between 579-812 breeding pairs, based on the estimates from individual countries. Only four of the 17 range countries identified in Europe have good quantitative data on their Saker populations, whilst the population estimates for the remaining countries are based on limited field surveys; consequently the breeding population may be under-recorded. The true European population is likely to fall within the range 550-1000 pairs. With the elevation of the Saker to 'Endangered' status by the IUCN there is an increased need to get more reliable population estimates for the species within Europe.

Introduction

In this, and a following article to appear in the next issue of *Falco*, I shall examine recent population estimates for breeding Saker Falcons in each country within their breeding range. This first article deals with Europe, including Russia west of the Urals, Turkey and the Caucuses.

Species are prioritised for conservation action on the basis of their abundance and population trend. In 2004, the "Red List Category" of the Saker Falcon was upgraded to "Endangered" by the World Conservation Union (IUCN) on the basis of a status assessment made by BirdLife International, the Red List Authority. For a species to be classified as Endangered it is considered, on the best available evidence, to be facing a very high risk of extinction in the wild. Prior to this the Saker Falcon was categorised as being of "Least Concern", which meant that on evaluation against set criteria it did not qualify for threatened or endangered status. The upgrading from Least Concern to Endangered arose because it was considered that the Saker Falcon had undergone a very rapid population decline, particularly on their central Asian breeding grounds, owing to inadequately controlled capture for the falconry trade (BirdLife International, 2004a).

The BirdLife assessment was based primarily on data summarised in a submission to CITES by the Environmental Research and Wildlife Development Agency of the UAE for a Review of Significant Trade in specimens of Appendix II species (ERWDA, 2003), and an unpublished undergraduate dissertation. The global population was estimated to be 8,500-12,000 pairs in 1990 compared to 3,600-4,000 pairs in 2003 (BirdLife International, 2006). Nigel Collar and Stuart Butchart, the evaluators for BirdLife, assessed the best available data and also considered input from the BirdLife Globally Threatened Birds Forum and concluded that the Saker Falcon breeding population had undergone a global decline of 53-75% over three generations (i.e., 15 years). The basis on which the Saker Falcon qualified for Endangered status is shown in Box 1. The evaluators noted that population estimates in most of the range were not seriously attempted until the 1990's and that some data was difficult to interpret (BirdLife International, 2006).

The Saker Falcon is classified as Endangered and is therefore considered to be facing a very high risk of extinction in the wild.

The Saker Falcon was classified as Endangered when the best available evidence indicated that the species met the following criteria:

1. There was an observed, estimated, inferred or suspected population size reduction of over 50% over the last ten years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible

And

2. There was a population size reduction of >50%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years).

Evidence for the above was based on the following:

(i) an index of abundance
(ii) a decline in the area of occupancy, extent of occurrence and/or quality of habitat
(iii) actual or potential levels of exploitation

Box 1. IUCN criteria used to classify the Saker Falcon as Globally Endangered (EN).

The aim of this article, and the following article covering Asia, is to collate current information on Saker Falcon abundance and population trend in each country and further to examine how this data was obtained in order to assess the reliability of the estimates. I have indicated a recent population estimate (and the year), the population trend over a 15 year period up to the latest population estimate and a code for the quality of the data (see Table 1).

The European Population

There is little historical data available on the population status of the Saker Falcon in Europe, but in the latter half of the 19th Century it is possible that there were 5,000-10,000 breeding pairs (Baumgart *et al*., 1992). The population declined significantly in the 20th Century, markedly so after World War II (Baumgart & Haraszthy, 1997). At this time, virtually the whole of the European population was located within the Soviet Union and its neighbouring communist states where large-scale changes in agricultural land use and farming practices undoubtedly had a massive impact on Saker populations, such that by the l970's their numbers were severely reduced. In the latter decades of the 20th Century, the fortunes of the Saker Falcon have varied among countries in Europe, with some country populations declining further, some increasing and others remaining stable, whilst there was a range expansion to reoccupy/colonise a few countries where the species was previously extinct or was not recorded in the past. Currently, we still do not have good population data for many countries, though in most (the exceptions being Hungary and Ukraine), Saker Falcons number less than 100 pairs.

Armenia

Recent Population Estimates: There is only one reported case of breeding, involving a well-grown chick that was taken from nest in western Armenia in the early 1900s. Other historical records from Armenia in breeding season are probably erroneous and should be attributed to Lanner Falcon (V. Ananian).

Appraisal: Possibly, the species may breed in western Armenia near the border with Turkey, where there are more or less suitable habitats and a good population of Sousliks (V. Ananian).

Austria

Recent Population Estimates: Austria is close to the western range limit of the Saker Falcon and the species has probably always been scarce, being restricted to the northeast of the country and the population reaching an "all-time high of about 10 pairs" at the end of World War II, after which it declined, reportedly to extinction, by the 1970's (Bauer, 1977). Whether the Saker was ever actually extinct as a breeding species is not clear, as there were pairs breeding in Lower Austria in the early 1970's (Senn, 1980) and the species was also breeding during the early 1980's, though less than five pairs were known (Ranner, 2005) By the early 1990's the breeding population was estimated at 5-10 pairs (Baumgart, 1994). Over the next decade the population had increased slightly and was estimated as 15-20 pairs over the period 1998-2002 (BirdLife International, 2004). In 1999 there were 8 known, and an estimated 15 breeding pairs in Austria (Nagy & Demeter, 2006), whilst a recent estimate by A. Gamauf indicated that the population stands at 20-25 pairs in 2004 (Mebs & Schmidt, 2006).

Appraisal: Despite the small population size and the relatively high level of ornithological interest, the true status of the Saker Falcon in Austria is still uncertain. The first targeted survey of Sakers was undertaken in 1999, when former and potential breeding sites were checked by line transects from a car and elevated observation points (Ranner, 2005). Sakers were sighted at 20 localities and in some regions the species had disappeared and in others it had become newly established. The species first bred on an electricity pylon in 1999 (Straka, 1999). In addition to better observer coverage, it seems likely that the population has increased slightly over the last 15 years and the Austrian population, albeit very small, is now higher than at any time in the recorded past.

Bulgaria

Recent Population Estimates: A recent review of the past and present status of the Saker Falcon in Bulgaria has been written by Ragyov (2006), which described how the species was abundant at the beginning of the 19th Century but then declined markedly, particularly after the 1950's as a result of persecution, poisoning, habitat loss and a decline in the Souslik population. In the later decades of the 20th Century additional factors such as secondary pesticide poisoning and the taking of chicks and adults for falconry also had an impact on the status of the species in the country. Population estimates derived in the 1980's and 1990's indicated that there were only 15-50 breeding pairs in the country (see Ragyov, 2006 for summary). The breeding population in 1990 was estimated as 30-50 pairs (Simeonov *et al*., 1990). Over the last 15 years there has been a marked decline and a survey of known former nesting sites in 2006 failed to find any Saker Falcons in occupation of the territories, though there were a number of sightings of Sakers reported in potential breeding habitats throughout the country (D. Ragyov).

Appraisal: There are unverified reports that six breeding pairs were located in the country in 2006, but it is unclear whether these reports refer simply to sightings (D. Ragyov). There are potential breeding habitats in Bulgaria that remain unexplored and further

surveys in 2007 will be targeted at these prospective sites. Nevertheless, the absence of Sakers from their former sites is a clear indication that the Saker Falcon has declined in Bulgaria and it is a distinct possibility that the species is now extinct as a breeding bird in the country.

Croatia

Recent Population Estimates: Reported as a breeding species in the flood-plains of the Rivers Danube and Drava in the east of the country (Heath & Evans, 2000). In the early 1990's five breeding pairs were located in East Slavonia and Podunavlje (Mikuska & Mikuska, 1994). In 2002 the breeding population was estimated as 5-10 pairs (BirdLife International, 2004) compared with a previous estimate of 10-15 pairs published in 1994 (Baumgart, 1994).

Appraisal: There have been no specific surveys for Saker Falcons in Croatia and the population estimates given above are essentially little more than guesses based on historical data and the availability of potential breeding habitat.

Czech Republic

Recent Population Estimates: The breeding distribution of the Saker Falcon is restricted to mainly to Moravia in the south-eastern part of the Czech Republic, bordering Slovakia and Austria. In the mid 1970's only one or two pairs bred annually but by the mid 1980's 5-10 pairs were breeding each year. Artificial nests were erected in the 1990's though the population had not exceeded 15 breeding pairs by 1998 (Horak, 2000). Over the period 1981-1998 *ca*. 150 captive bred Saker Falcons were released in the Czech Republic (L. Viktora). Despite these efforts, the annual breeding population over the period 1999-2002 was estimated as 12-15 pairs and in 2005-06 the population was still regarded as being somewhere between 10-15 breeding pairs (D. Horal).

Appraisal: In 1995 a 'rescue' programme was established in the Czech Republic for Peregrine and Saker Falcon resulting in detailed survey and monitoring of these species with an estimated 90% of all nests found annually (Houdkova, 2004). The available data suggests that the population has stabilised over the last 15 years and the species has a very restricted distribution in the country.

Georgia

Recent Population Estimates: The Saker Falcon breeds in the dry, steppic hills of the Iori region in the southeast of the country, with one confirmed and another suspected breeding record in 1999 (Wilson, 2000), though there is potential for confusion with the Lanner Falcon, which also breeds in the Iori region. There were three known breeding pairs in 2003, with another one or two pairs potentially breeding in the country (Nagy & Demeter, 2006).

Appraisal: There has been very little extensive survey work undertaken in the country apart from localised surveys for the establishment of protected areas, consequently we know little about the actual or potential status of the Saker Falcon in Georgia, though the EU Saker Action Plan (Nagy & Demeter, 2006) proposes a target of 20 breeding pairs by 2020.

Photo 1. The young male Saker above was ringed in a nest near the Austrian border in Hungary 2006 and was recovered the same year with an injured wing in the Czech Republic (Istvan Balasz).

Germany

Recent Population Estimates: The first recent breeding record of Saker Falcon in Germany was recorded in 1997 in Saxony in cliffs along the River Elbe (Augst, 2000). It appears that a pair occupied this breeding territory for five years but they have since stopped breeding (Nagy & Demeter, 2006).

Appraisal: The single, outlying pair of Sakers breeding in eastern Germany represents the westernmost range limit of the species. As the central European population has increased, the number of records of Sakers in Germany has increased, culminating in these remarkable breeding records from 1997-2001. However, it is a possibility that one or both birds of the German breeding pair were derived from 10 captive-bred Sakers that were released at Usti nad Labem in the Czech Republic during 1996-98 (Kumbera & Moulis, 2001).

Hungary:

Recent Population Estimates: In 2002, there were 95 known Saker Falcon breeding attempts and it was estimated that there were 113-145 pairs in Hungary (Bagyura *et al*., 2004). In 2005 it was estimated that the population was in the region of 176-190 pairs based on the number of the known territories, survey coverage, potential nesting habitats and the experience of the Hungarian surveyors (J. Bagyura). Bagyura *et al*. (2004) also detailed an increasing population trend, from 8 to

95 breeding pairs in the country over the period 1980 to 2002 and reported that there were 49 known breeding pairs and an estimated population of 105 pairs in 1992. There is some degree of inconsistency between this data and a previously published population estimate (Bagyura *et al*., 1994), which suggested that there were 90 known breeding pairs and an estimated population of around 150 pairs in 1992. Other published population estimates include 80 breeding pairs in 1991 (Baumgart, 1994), "at least 120 breeding pairs" in 1994 (Baumgart & Haraszthy, 1997), 130-150 pairs in 1997-2002 (BirdLife International, 2004b) and 140-145 pairs in 2004 (Nagy & Demeter, 2006). In 1996 there were 40-57 pairs of Saker Falcons breeding in ten different Important Bird Areas (IBA's), mainly flood-plains and mountainous areas, in Hungary (Nagy, 2000).

Appraisal: Published population estimates for Hungary vary to the extent that it is not possible to state whether or not the population had increased or remained stable since the early 1990's. The discrepancy in the population estimates in the published studies of Bagyura *et al.* (1994; 2004) was a result of errors in the data presented in the earlier paper (J. Bagyura). Breeding data is collected by Saker enthusiasts and their survey effort has increased over the last two decades, which could account for some of the reported population increase. Nevertheless, the expert opinion of Bagyura *et al* (2004) is that there has been a real increase in the breeding population over this time period too, aided by the provision of many artificial nesting sites in trees and on electricity pylons. A four-year European Union LIFE-Nature project, covering much of Hungary and neighbouring Slovakia, is beginning in 2007, which will include surveying and monitoring the Saker Falcon population in these two countries.

Photo 2. An adult female Saker wintering in eastern Hungary. (Istvan Balsz)

Macedonia

Recent Population Estimates: There is no confirmed evidence of Saker Falcons breeding in the country though they may possibly breed in steppe habitat in the centre of the country, as well as in hills and gorges in the south of the country (Heath & Evans, 2000).

Appraisal: It is not certain what large falcon species breed in Macedonia, the Saker or the Lanner Falcon. It has been postulated that natural hybridization has taken place between the two species in a range overlap zone in the southern Balkans (Boev & Dimitrov, 1995).

Moldova

Recent Population Estimates: In the early 20th Century the Saker was a widespread breeding species in Moldova (Osterman, 1914), and was common in the river flood-plains of the Prut and Nistru up until 1970 (Averin *et al.*, 1971). By 1980 it was thought that about 20 pairs were breeding in these two main river valleys (Zubkov, 1980), with only 10-13 pairs estimated in Moldova by the end of the decade (Ganya and Zubkov, 1989). By the end of the 1990's the population estimate for Moldova was only 4-7 pairs (BirdLife International, 2004). In 2005, eight pairs of Saker Falcons were discovered breeding along electricity power lines crossing the steppe zone of southern Moldova close to the border with Ukraine (V. Vetrov).

Appraisal: In addition to the breeding pairs located on the electricity power line crossing the southern steppe zone in 2005 there are at least seven other potential breeding locations throughout Moldovia where Sakers have been recorded over the period 2000-05 (A. Muntyanu). There is little ornithological activity across the whole country; consequently it is likely that the species remains under-recorded in Moldova.

Poland

Recent Population Estimates: In 1998 Saker Falcons were discovered breeding in southern Poland, near the Czech border, when three youngsters were found in a Buzzard's nest, and additional pair reportedly bred about 25 km away from this site (Augst, 1998).

Appraisal: There appears to be a small, rather isolated population of Sakers breeding in Silesia (with nesting reported in the Czech Republic and Poland). Sakers have bred in most years from 1989-2003 in Czech Siliesia (Horak, 2003) but presently only 2-3 pairs are recorded in the greater region, including Polish territory, which suggests that the species may be under-recorded here.

Romania

Recent Population Estimates: The Saker Falcon at the beginning of the 20th Century was a common breeding bird in the Dobrogea and Danube Dalta (Swann, 1925) but has always been largely absent as a breeding species from the Carpathians (Baumgart, 1991). By the mid-1970's the population was estimated at only 5-20 pairs

(Klemm, 1973; Puscariu & Filipascu, 1977) and by the end of the 20th Century it was thought that the species may have stopped breeding in the country since the last proven attempt in the Macin Hills in 1996 (Roberts, 2000). Recently, the species has been 'rediscovered' breeding in Dobrogea and population estimates range from 2-12 pairs (Z. Domahidi), though as yet there has been no proven breeding record from the Danube Delta since 1990 (A. Dorosencu). In addition, there are reports of Saker Falcons in the plains of western Romania bordering Hungary, where a pair occupied an artificial nest in 2006 but didn't breed (Istvan Komaromi *per* I. Balasz).

Appraisal: Current estimates are based on incomplete surveys of a limited area of Romania, mostly in the eastern Dobrogea. There will be a survey undertaken in Dobrogea in 2007, but nevertheless there remains the possibility that pairs are breeding undetected in the flood-plains and delta of the Danube, the western lowlands of Transylvania and the flood-plains of Moldavia.

Russia (European part)

Recent Population Estimates: Changes in land use and agricultural practices during the 20th Century lead to a significant population decrease in the Soviet Union, especially in the 1970's (Zhirnov *et al*. 1978; Galushin 1983). During the EBCC European Atlas surveys in the late 1980's there were probable and possible breeding records of small numbers of Saker Falcons in the Don and Volga river flood-plains stretching from Rostov to Tula along the Don, and to Saratov along the Volga, with an estimated population of 80-150 pairs in the whole region (Baumgart & Haraszarthy, 1997). The population decline continued into the 21st Century, with an estimate of 30-60 pairs for the period 1994-2002 (BirdLife International, 2004). Much of the former breeding area along the Don and Volga rivers was revisited by a team of surveyors in 2005, but apart from three sites along the Volga from Volgograd to Kamyshin, the Saker had disappeared from its previous haunts (V. Galushin). Despite the discovery in the same year of a couple of pairs in agricultural land in North Ossetia (J. Komarov), the parlous state of the Saker in European Russia has been highlighted by the most recent estimate, published in the EU Single Species Action Plan, which estimates a population of only 10-20 pairs in 2003-04 (Nagy & Demeter, 2006).

Appraisal: Recent survey work has been limited and targeted at areas where the species formerly bred, such as the agricultural and steppe lands of Rostov and the banks, flood-plains and steppes of the Don and Volga river valleys. The species evidently breeds at low density in these regions, but their vast area makes any estimate of true population sizes very difficult and it is difficult to believe that the five breeding pairs located by two small groups of surveyors in 2005 represents between 25-50% of the European Russian population. Sakers do not appear to have adapted to nesting on electricity support structures in European Russia (V. Vetrov), thus breeding pairs are much more difficult to locate in the wooded pasture and steppe lands of the major river valleys. Nevertheless, the disappearance of many pairs from former breeding sites is clear evidence of a declining population.

Serbia

Recent Population Estimates: In the late 1980's there were confirmed and probable breeding records at several locations in the north of the country (Baumgart & Haraszthy, 1997) and Sakers were reported breeding in 1996 in an Important Bird Area along the River Sava (Puszovic & Grubac, 2000). Previous estimates include 7-10 pairs in the mid 1960's (Suetens & van Groenendael, 1968) and 15-40 pairs in the 1980's (Vasic *et al.*, 1985; Meyburg & Meyburg, 1987). In Serbia the Saker's breeding range is concentrated in plains of Vojvodina Province but there are several breeding season observations from highland plateau steppes in the southeast, with over 90% of all known breeding pairs nesting on electricity pylons (S. Puzovic).

Appraisal: The adoption of power line support structures as nesting sites has resulted in Saker Falcons now occupying lowland areas where alternative nesting sites are limited. It is not clear if the 15-40 pairs of Sakers that bred mainly in trees in the 1980's have disappeared, switched to nesting in nearby electric pylons or have remained, largely unrecorded, breeding in their traditional haunts. It is also possible, given the paucity of information from natural nesting sites, that the increase in pairs breeding on power line structures over the last 20 years has also been reflected in an increase in the population occupying tree-nest sites in the wooded farmlands.

Slovakia

Recent Population Estimates: Between 1950 and 1980 the breeding population in Slovakia (and neighbouring Hungary and Austria) was supposedly decimated by falconers taking chicks from Saker nests (Baumgart *et al*., 1992), though it's more likely that any major decline was caused by post-war changes in land-use and agricultural practices, with East-European falconers contributing to a reduction in the productivity of an already decimated population. An estimated breeding population of 15-20 pairs had stabilised by the end of the 1970's (Baumgart, 1991). By the late 1980's there was an estimated breeding population of 30-40 pairs of Sakers in Slovakia (Baumgart & Haraszthy, 1997), an increase over the decade that had been aided by the provision of artificial nests and the introduction of captive bred chicks into nests (Baumgart, 1991).

Estimates for the period from 1980-99, suggest that the breeding population of Slovakia had either stabilised or declined in the last decade of the 20th Century with an estimated 10-40 pairs (BirdLife International, 2004). In 1994 there were 18-23 pairs located in Slovakia, eight of which were using artificial nests or boxes (Chavko, 1995). Data for 2004 produced a population estimate of 23-25 pairs in the EU Single Species Action Plan, which supposedly represented a 20% increase in the breeding population over the previous 10 years (Nagy & Demeter, 2006).

Appraisal: An estimated 30-40 pairs by 1989 has apparently declined to an estimated 23-25 pairs by 2004, yet the population had supposedly increased by 20% since 1994, when there were 18-23 pairs breeding in Slovakia. Apparently, the reported population increases since the mid 1980's have not been accompanied by increasing population estimates! The forthcoming European Union LIFE-Nature project, covering the Carpathian Basin includes planned survey and monitoring work on Saker Falcons in Slovakia, which could potentially clarify the status of the species in the country; the objective of this project is to establish a Slovakian breeding population of 35-40 pairs by 2010.

Photo 3. Brood of four young Sakers aged ca. 12 days old and an unhatched egg in a Raven nest built on an electricity pylon in Ukraine. (Vitaly Vetrov).

Turkey

Recent Population Estimates: A rare resident breeder in Eastern Anatolia and formerly, up to the 1970's, in Central Anatolia, the Black Sea Coastlands, Mediterranean and Southeast Anatolia (P. Castell). A recent estimate of 50-70 pairs has been reported (BirdLife International, 2004).

Appraisal: Very little is known about the status and recent population trend of the Saker Falcon in Turkey, with only a handful of recorded breeding attempts in the last ten years (Z. Ayas). The most recent estimate is little more than an educated guess, based on the potential breeding habitat available for the species. Furthermore, there is scope for observer confusion with the Lanner Falcon, which also reportedly breeds in Turkey.

Ukraine

Recent Population Estimates: The Saker Falcon population was severely decimated by Soviet agricultural practices and a purge on all raptorial birds, but since the 1980's there has apparently been some upturn in the species' fortunes (V. Vetrov). As in other parts of the Soviet Union, there were large decreases in the post-war period across Ukraine and by the late 1970's it was estimated that there were only 5-6 pairs on Crimea (Zubarovsky, 1977; Kostin *et al.*, 1981). In the 1980's, according to Prokopenko and Peklo (1989), there were only around 100-150 pairs in Ukraine and numbers continued to decline. There were 13-14 pairs of Saker Falcons reported breeding at seven different Important Birds Areas, in river-valley lowlands, steppes and agricultural land, in eastern and southern Ukraine in 1996 (Mikityuk, 2000), with the total population estimated at 120-150 pairs in the early 1990's (Baumgart, 1994). However, this estimate was subsequently revised downwards for the period 1990-2000, when the estimated breeding population was only 45-80 pairs (BirdLife International, 2004). Since 2001, a series of Saker Falcon surveys have been undertaken in southern Ukraine, which discovered a significant European breeding population mainly nesting along electricity power lines and coastal cliffs, with an estimated Ukrainian population of 270-345 pairs (V. Vetrov).

Appraisal: The most recent estimate is based on field surveys that have located 166 breeding territories, mostly on power line support structures, in the steppe zone of southern Ukraine, from which the surveyors have extrapolated the potential breeding population taking into account the amount of unsurveyed potential breeding habitat in various regions (Y. Mylobog & V. Vetrov). Nevertheless, it is not entirely clear if there has been an increase in the breeding population in the steppes of southern Ukraine or if the numbers reported nowadays simply reflect the increased survey effort. However, it's reasonable to assume that the use of electricity poles and pylons as nest sites has only arisen in the last 20 years or so, and that this habit has enabled the Saker to colonize steppe habitats devoid of trees or cliffs. There has been little attention paid recently to the forest steppe and flood plains of northern, central and eastern Ukraine, the former stronghold of the Saker in the country, so the true status of the species here is largely a matter of conjecture.

Country	Population Estimate	Date of Estimate	Quality	15 year Trend
Armenia	0 bp	2006	D	NA
Austria	15-25 bp	2004	B	Slight increase
Bulgaria	0-10 bp	2006	C	Declining
Croatia	5-10 bp	2002	D	Unknown
Czech Republic	10-15 bp	2005-06	B	Stable
Georgia	3-5 bp	2000-03	D	Unknown
Germany	0-1bp	2006	B	NA
Hungary	176-190 bp	2005	B	Increasing
Macedonia	0-3 bp	1999-2000	D	Unknown
Moldova	8-15 bp	2005	D	Unknown
Poland	0-2 bp	1998	D	NA
Romania	2-12 bp	2006	C	Stable
Russia (European)	10-20 bp	2003-04	D	Decreasing
Serbia	52-64 bp	1997-2002	C	Increasing
Slovakia	23-25 bp	2004	C	Unknown
Turkey	5-70 bp	2001	D	Unknown
Ukraine	270-345 bp	2003-05	C	Increasing

Table 1. Population estimates and trend data (for the 15 year period prior to the estimate) for range countries in Europe. Data quality scores for the population estimates are based on the following criteria: **A** = excellent; quantitative data available with precision estimates based on comprehensive survey work, **B** = good; quantitative data available, based on extensive field work, **C** = medium, quantitative data available, based on limited field work and **D** = poor; no quantitative data available and limited field surveys. Data sources are given in text for each country.

Discussion

In Hungary, Serbia and Ukraine a significant proportion of the known breeding populations nest on power line support structures, either in artificial boxes and trays or in the nests of other species (primarily Raven *Corvus corax*). The use of power line support structures as nesting sites was first noted in Hungary in the 1980's (Baumgart, 1991), though whether this represented a switch from tree-nesting rather than being additional to tree-nesting is not clear. In the countries where nesting on power lines is commonplace, the populations have reportedly increased over the last 15 years and these increases have, in part, been attributed to the use of power lines as nesting sites in landscapes where alternative nesting sites are scarce. The question arises as to the extent that current survey work relies on finding nests along electricity power lines; they are simple to search and a very high proportion of nests will be located in any power line survey. Conversely, Saker Falcons nesting in isolated trees, wooded belts and gallery forests in extensive farmland and flood-plain valleys are much less easy to locate. It is possible that the reported 'switching' of nesting habits from tree nesting sites to power lines is at least partly attributable to the ease by which nests can be found on power lines compared to natural sites. Indications from the available data are that the increase in the number of pairs nesting on electricity pylons has not been reflected in a comparable increase in the numbers breeding in natural sites. It is possible that this could simply be due to differences in the 'findability' of Sakers nesting in the two different situations rather than any real difference.

In Hungary, many Saker Falcons now occupy artificial nesting sites erected in trees and on electricity pylons and the provision of such sites contributed, at least partly, to an increase of 1 to 22 pairs in the Hortobagy region from 1989 to 2001 (Dudas *et al*., 2004). This suggests that the availability of suitable nest sites can limit population size in some areas and that the provision of suitable artificial sites can encourage pairs to settle and breed. However, not all the artificial nests occupied by Sakers are in newly established breeding ranges as many artificial nests have also been erected as replacements for natural nests already occupied by Sakers. It would be interesting to know what proportion of artificial nests has been occupied by new colonists rather than by birds already occupying a breeding range. Such information would be useful to assess the feasibility of using artificial nests to encourage occupation of areas where there are currently no breeding Sakers.

This review shows that even in Europe, our knowledge of the Saker Falcon population status is incomplete and, with few exceptions, estimates have been derived mainly from survey work by a small number of dedicated enthusiasts in each country; such surveys

will inevitably result in under-recording. The figures presented above would suggest a current European population of 550-850 breeding pairs. However there is potential for under-recording in several countries and there have been no systematic population assessments in any European country using methods that avoid biases in survey effort or use sampling techniques that allow precision values to be derived for population estimates. If there is to be any credible assessment of the effectiveness of actions taken under the European Action Plan for the Saker Falcon then it is important that baseline population data is collected in a more statistically robust way than at present.

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Past and present population and rodent diet of the Lesser Kestrel (*Falco naumanni*) in northern Iran

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Summary

We estimate that 140-200 individuals of Lesser Kestrels occurred in the surveyed areas of Tehran, Mazandaran and Golestan provinces. Analysis of 230 pellets collected from a roost site near Tehran revealed that 18.8% contained rodent remains, primarily those of gerbils *Meriones* sp. and field mice *Apodemus* sp. However, a further 200 pellets from agricultural land didn't contain any mammalian bones and comprised mainly insect remains indicating that diet can very regionally.

Introduction

The Lesser Kestrel *Falco naumanni* is a migratory raptor breeding in open habitats across a large swathe of the Palearctic and wintering in Africa. There is some published information on the population status and diet of the Lesser Kestrel in the Middle East and over its vast range in the Caucasus (Abuladze 2001, Harchenko 1966, Il'yukh 2001) and Central Asia (Bukreev 1996, Davygora 2001, Maikhruk & Lysenkoy 1997, Pfander 1990), and two baseline population surveys have been conducted in central Turkey (Parr *et al.* 1995) and south-east Kazakhstan (Parr *et al.* 2000), whilst Tejero *et al.* (1982) reviewed the diet of the species.

In the 1970s, the Lesser Kestrel was a locally common summer visitor to north-central and north-eastern Iran and the western Zagros south to central Fars. Breeding colonies were located along the south slope of the Alborz Mountains, in the south-east Caspian region, in northern Khorasan, and in Lorestan and central Fars, and birds were recorded during the breeding season in suitable breeding habitat in Zanjan, Kordestan and Ilam. No attempt has been made to estimate the size of the Iranian breeding population because of very poor coverage in much of the western Zagros and northern Khorasan (Derek Scott, *Pers. comm.*).

We examined population and the diet of the Lesser Kestrel in northern Iran, after our dietary study of the Common Kestrel in Tehran area (Khaleghizadeh & Javidkar 2006).

Methods

Field surveys were conducted in provinces of Tehran, Mazandaran and Golestan in spring 2006, and additional data was also collected by local people. Observations from the 1970s are also presented here. In March and August 2004, and April 2005 a total of 239 pellets of Lesser Kestrel were collected from beneath a bridge wall near the Latian Dam, Tehran (Figure 1). All pellets were produced at a Lesser Kestrel roosting site. Furthermore, over 200 pellets were also collected from the beneath trees in Khaje-Nafas and Bandar Turkmen towns, which were situated among agricultural land mostly cultivated with wheat.

Kestrel pellets may be found when searching for those of owls, and can be confused with little owl pellets. They can be found beneath the eaves of buildings and below pylons and dead branches of trees; anywhere where a kestrel might perch or roost. The pellets are distinctive. They are small (20–40 mm long), pale grey (when dry) and with a rather felty texture. They are also slightly flattened and pointed at one end.

Kestrels, like other raptors, digest their prey more thoroughly than owls. Their stomach acids are stronger, which means that bones in particular are much less evident in pellets. They also tend to tear their prey up rather than swallow it whole. So typical kestrel pellets contain fewer, more fragmented bones than owl pellets. Because they also take a high proportion of insect prey, kestrel pellets really require different methods of study from those described for owls (RSPB 2002), though in this study we only examine the rodent component of the diet.

Each pellet was soaked in 95% alcohol and then teased apart using a pair of forceps and a needle. Bone remains and skulls of Rodentia in each pellet were placed in separate containers. The rodent remains were identified and the percentage occurrence of each species among all of the pellets was recorded (see Village 1990).

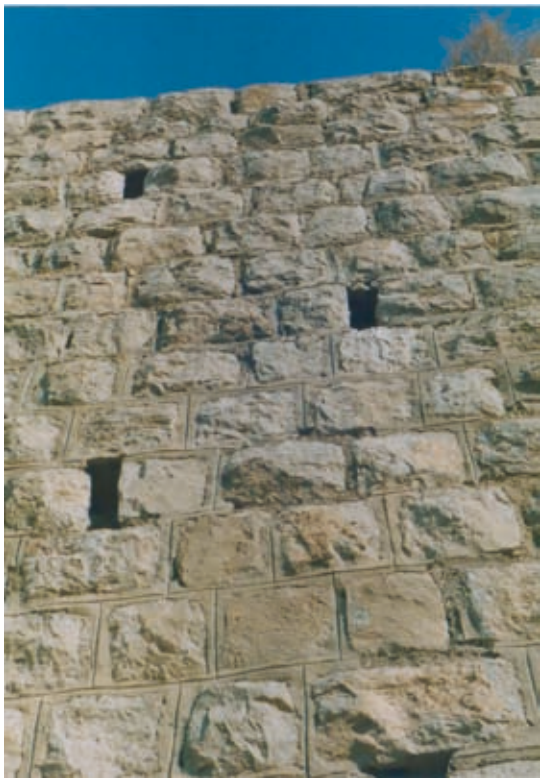

Figure 1. *Nesting and roosting site of Lesser Kestrel in the Latian Dam.*

Results

Present population survey in northern Iran

In total, 200 individuals were estimated in the Tehran, Mazandaran and Golestan provinces (Table 1). No birds were observed in Varamin Plain, the Karaj area, Lar National Park and Gorgan city. There was a report of a small flock in Sorkheh-Hesar National Park, near Tehran (P. Bakhtiari, *Pers. comm*.), *ca.* 25 (in 1995, A. Khaleghizadeh, *Pers. obs*.) and more (O. Khalilipour and K. Rabiei, *Pers. comm.*) in Gorgan city. The birds observed at Tamar Ghara-Ghouzi, Gomishan, and Bandar Turkmen were of confirmed nesting birds, whereas birds in other locations were of migrants or probable breeding birds.

In these areas, Lesser Kestrels used a variety of nesting sites, such as cavities in walls, clay cliffs, trees (*Platanus orientalis* in Niavaran Palace and *Eucalyptus* in Gomishan, Khaje-Nafas and Bandar Turkmen areas), water towers, tower and building (Table 1).

Province	Area	Wall	Clay Cliff	Tree	Water Tower	Tower	Building	Wire	Max. est.
Tehran	Varamin Plain	0	0	0	0	0	0	0	0
Tehran	Karaj area	0	0	0	0	0	0	0	0
Tehran	Tehran City	0	0	12 (18 2005)	0	0	0	0	18
Tehran	Latian Dam	14 (2005), 3 (2006)	0	0	0	0	0	0	14
Mazandaran	Lar NP	0	0	0	0	0	0	0	0
Mazandaran	Miankaleh WR	0	0	(2-3)	0	0	0	0	3
Golestan	Gorgan City	0	0	0	0	0	18 in 2005	0	18
Golestan	Tamar Ghara-Ghouzi hillsides	0	*c.* 35	0	0	0	0	0	40
Golestan	Azad Shahr	0	*0*	0	0	0	0	(7 in 1998)*	10
Golestan	Gomishan Town	0	0	0	12		0	0	12
Golestan	Khaje-Nafas Town	0	0	*c.* 18**					30
Golestan	Bandar Turkmen City	0	0	*c.* 50					55
Total		**141 (175)**							**200**

Table 1. Results of Lesser Kestrel survey (individuals) in Tehran, Mazandaran and Golestan provinces. Numbers in parentheses are reported by local people. * During a Birdquest tour to Iran on roadside telegraph poles near Azad Shahr, Golestan, on 27 April. ** local people reported between 50–100 individuals).

Past observations in northern Iran in the 1970s

Known breeding colonies in the 1970s in Iran are listed in Table 2. The breeding colony near Lashgarak was visited on numerous occasions between 1968 and 1976. The birds were nesting in drainage holes in the stonework supporting the main road between Shemiran in north Tehran and Lashgarak in the Jajerud Valley. The maximum count of individuals was about 30, and it was believed that about 15 pairs were nesting at this site.

Observations of birds believed to be on spring passage and on autumn migration are listed in Table 3. The first spring migrants arrived in central Fars in the second half of February, and in northern Iran in the last ten days of March. The earliest records in the south were four birds between Dogonbadan and Shiraz, Fars, on 19 February 1974, and nine birds at Persepolis, Fars, on 20 February 1974. The earliest records in the north were four birds near the Riverside Restaurant east of Tehran on 18 March 1974, a male at the Alborz divide north of Ghazvin, Tehran, on 21 March 1974, and seven birds at the colony near Lashgarak, Tehran, also on 21 March 1974. Other arrival dates at the Lashgarak colony were as follows: 25 March 1969 (three birds); 30 March 1972 (five males); 2 April 1973 (two males); and 23 March 1975 (seven males and two females). The spring migration was quite protracted, with some birds still on passage in southern Iran as late as the first week of May. Autumn migration began in early September and continued until early October. The latest records were a single male moving down the Lar Valley in the Alborz north of Tehran on 9 October 1970, and an exceptionally late male at Miankaleh Wildlife Refuge, Mazandaran, on 29 October 1971 (Derek Scott, *Pers. comm.*).

Table 2. Known breeding colonies of the Lesser Kestrel in Iran in the 1970s.

Years	No. of Birds	Locality	Province
1968-76	15 pairs	By Shemiran to Lashgarak road, NE of Tehran	Tehran
1975	4 pairs	In poplar trees in Karadj	Tehran
1972	15 birds	In ruins near Alborz divide NW of Ghazvin	Tehran
1972-73	20 birds	In old house in Bandar-e Turkoman	Golestan

Table 3. Observations of Lesser Kestrels on spring and autumn migrations in Iran in the 1970s.

Date	No. of Birds	Locality	Province
Spring migration			
24.03.75	10	In a flock over the hills north-east of Tehran	Tehran
26.03.75	1	At Lashgarak	Tehran
Autumn migration			
09.10.70	1	In the Lar Valley in the central Alborz	Tehran
29.10.71	1	At Miankaleh Wildlife Refuge	Mazandaran
16.09.73	8	Moving west at Semeskandeh Protected Area	Mazandaran
17.09.73	25	In a flock in upper Galandrud valley, central Alborz	Tehran
21.09.73	30	Moving S over pass on Kuh-e Asara, central Alborz	Tehran
21.09.73	150	In a flock over Shemshak in Jajerud Valley (at dusk)	Tehran
29.09.73	55	In a flock hunting over the plains at Dasht-e Naz W.R.	Mazandaran
16.09.74	20	In small groups near Gonbad-e Qabus and Kalaleh	Golestan
17.09.74	20	Over plains near Dasht, east of Golestan National Park	Golestan
03.10.74	150	In flocks moving SE in Jajerud Valley at Lashgarak	Tehran
11.09.75	7	In Miankaleh Wildlife Refuge	Mazandaran
02.10.75	3	In a group, in the Lar Valley in the central Alborz	Tehran
17.09.76	A few	In the Lar Valley in the central Alborz	Tehran

Pellet Contents

Of 239 pellets, Rodentia were contained among 18.8% of the pellets. *Meriones* sp. (49%) was the most important item among Rodentia (Figure 2). There were no rodent remains among the 200 pellets collected from Khaje-Nafas and Bandar Turkmen towns; it seems that the species is wholly insectivore in the Turkmen Steppe of south-east region of the Caspian Sea.

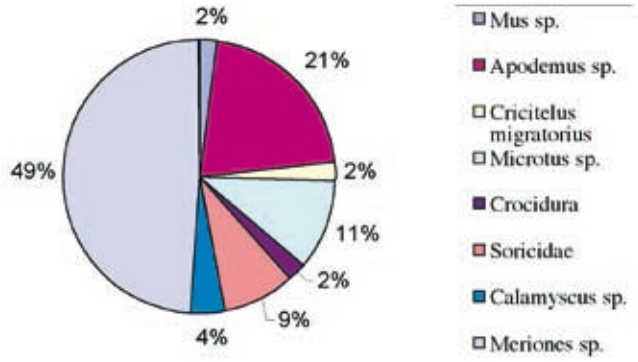

Figure 2.
Composition of Rodentia identified in pellets of the Latian Dam.

Discussion

According to the data from the 1970s, the Lesser Kestrel was a common autumn passage migrant in Central Alaborz (Evans 1994). Hence some additional autumn surveys are needed to reach the present number of passage migrants in northern Iran. In the 1970s, there were no records of Lesser Kestrels in East or West Azarbaijan despite several surveys during the breeding season, and it is doubtful if the species bred in these north-western provinces. But there was a flock of *ca.* 50 individuals roosting on Pine *Pinus* trees in Dasht-e Moghan, Ardabil province, at dusk on 16 June 2001 (A. Khaleghizadeh, *Pers. obs.*) and the same numbers around Lake Uroumiyeh in September 2000 (M. Sehhatisabet, *Pers. comm.*) both areas in northwest Iran.

The records in Table 3 suggest that there is an important migration route for Lesser Kestrels through northern Khorasan, the south-east Caspian region and the central Alborz, presumably involving birds from breeding areas in the Central Asian Republics to the east of the Caspian Sea. Much smaller numbers of birds apparently travel down the west coast of the Caspian and enter Iran at Astara. Birds from both these migration routes presumably then cross western Iran on their way to Africa (Derek Scott, *Pers. comm.*).

Franco *et al.* (2005) suggested that nest-site availability might limit Lesser Kestrel populations and during our survey the species was found at a variety of nesting sites, suggesting that a shortage of potential nesting sites was unlikely to be a major problem. Another possible factor affecting Lesser Kestrel populations is the presence of predators (Tella *et al.* 2004). Most nest-sites in northern Iran were inaccessible to people and no potential avian predators were noted breeding close to Lesser Kestrels. Prey availability surrounding breeding colonies will be important in determining population size (Parr *et al.* 1997). Lesser Kestrels in northern Iran were eating significant numbers of rodents but the species was probably wholly insectivorous in the Turkmen Steppes. Some items were not mentioned by Cramp & Simmons (1979) such as *Microtus, Meriones, Soricidae, Crocidura, Cricetulus migratorius* and *Calomyscus*.

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An Overview of Raptor Conservation in Iran

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Of the 492 bird species that occur in Iran, 46 species belong to the Orders *Falconiformes* and *Strigiformes*. Loss of natural habitat, pollution, lack of public awareness and illegal trade are the major threats to Iranian wildlife, including birds of prey. Approval of the first protective legislation of wildlife comprising raptors was passed by the Iranian Parliament in June 1968. Since then, legislation and regulation have been improved, extended and modified. The following items define approved laws according to latest modifications regarding the protection of birds of prey:

- All the species of birds of prey comprising *Falconiformes* and *Strigiformes* are protected.

- The transport, sale, export, exhibit of mentioned birds (live or dead) or parts of their bodies without formal permission of the Environment Department is prohibited.

- The import and export of birds of prey listed in appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) must follow the rules of the CITES Convention.

- All raptors kept in zoos or zoological centers must be under the supervision of the Environment Department.

- Penalties for violators who trap, hunt, carry, export, transport, purchase and sell birds of prey include jail (91 days up to 6 months) and fines (1100$ up to 13000$) depending on the species and the type of violation. The strictest penalties are imposed on violations in the cases of large falcons.

- The penalty for nest destruction and damaging the eggs of raptor species are respectively 1/4 and 1/3 of the imposed penalty of the adults of the same species.

Every year many raptors are trapped, stolen from nests and shot. Capturing and the illegal trade in raptors are the most important conservation issues in Iran. The destination of these raptors are Iranians who are interested in raptors and Arab falconers or bird collectors in the Middle East. Since inside Iran falconry is strictly forbidden, these birds are not normally flown and are usually are kept secretively in private houses. Confiscated birds that have been sent to the Environment Department include the Common Kestrel (*Falco tinnunculus*), Saker Falcon (*Falco cherrug*),

Eurasian Sparrow hawk (*Accipiter nisus*), Long-legged Buzzard (*Buteo rufinus*), Golden Eagle (*Aquila chrysaetos*), Eastern Imperial Eagle (*Aquila heliaca)* and Eagle Owl (*Bubo bubo*). The confiscated raptors are released if they are healthy and fit. Unfortunately there are no suitable facilities to treat and rehabilitate raptors in Iran, so the ability of birds to survive in nature after release is questionable.

Photo 1. *Raptors held illegally in captivity in Iran*

Among the illegally exported raptors most are Saker Falcons and Peregrine Falcons (*Falco peregrinus*), especially the Saker Falcon, which is both a resident and migratory species in Iran. The capture and export of large falcons is a challenge for the Environment Department. Every year in the late summer large numbers of hunting falcons are caught in wintering habitats or on their migration route and are then transported to the southern border of Iran to export to Arab countries. Lack of equipment and personnel in comparison with enormous habitats and number of violators as well as some poorly defined legal points have made the protection of raptors challenging. Arrest of violators is performed by field patrols of officers of the Environment Department. Management of confiscated falcons is a big problem. Apart from falcons confiscated from smugglers during the Houbara Bustard (*Chlamydotis undulata*) hunting season, the addition of confiscated hawks belonging to Arab falconers who have traveled to Iran with their falcons without permission from the Environment Department complicate the former problem. In practice, restriction of such violations cannot be achieved only by approval of heavier fines or imprisonments, since every year large numbers of raptors are removed from the wild contrary to all the efforts that are exerted. In the author's opinion increased public awareness, stricter border controls, an increase in number of enforcement officers are needed to restrict such violations. Additionally more research about population distribution, migration routes and breeding places of Iranian raptors is needed. The Iranian government needs to be more concerned about wildlife conservation issues and develop collaborative links with regional and international conservation organizations.

Report on the Activity of the Small Birds of Prey and Owl Group held at the Conservation Workshop of the Fauna of Arabia, Sharjah Desert Wildlife Park, 2006.

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Introduction

The group was established to examine, species by species, those raptors and owls which were not considered by the large raptors working group in 2005, notably birds of prey in the genera *Elanus, Milvus, Melierax, Micronisus, Accipiter, Buteo* (but not *B. 'socotrae'* endemic to Socotra), *Pandion and Falco* (but not hunting falcons), and owls (but not *O. socotranus* endemic to Socotra). It is understood that the hunting falcons and Socotra endemics will be included in a future workshops. However the population and conservation situation aspects of those species considered included where appropriate details of the Socotra population. Jordan was not directly considered although some input of data from Jordanian representatives on other working groups was gratefully received.

The group benefited from a wide range of expertise including academics, reserve managers, government

conservation department representatives, field workers, wildlife park specialists, veterinary specialists and those closely connected with official bodies such as CITES monitoring. There were representatives present from each state and a number of foreign delegates attended to share their knowledge and expertise.

Unfortunately the group did not have the advantage of finalised recommendations and actions from the large raptors group workshop held in 2005, but a few of the delegates to that workshop were present and could pass on their experiences and knowledge. The BCEAW Sharjah had also prepared comprehensive resource packs on each species including extracts from the literature, distribution maps etc. As an aid to discussion the facilitator prepared prior to the workshop a comprehensive summary of the status, distribution and populations of all raptors (including those not due for discussion and those discussed at last year's workshop) and owls. This document formed a focal point for initial discussion for each species as the group reviewed distribution and population issues collectively, before considering the individual Taxon Data Sheets (TDS). Note that the estimated populations table was updated during the workshop and the revised estimated populations table appears below.

Mike Jennings speaking at the Sharjah conference

Issues Identified in the Species Review by the Group

The group worked through the species one by one. To encourage discussion a start was made with a species well known to everyone, the Osprey *Pandion haliaetu*s. Rather disconcertingly this took half of Day 1. This was probably because there is relatively a lot known about this species in Arabia and many had a view to express. After that the group was able to review of the majority of species targeted including nine birds of prey and three owls. The group took a decision not to discuss the Marsh Harrier *Circus aeruginosus* and Lesser Kestrel *Falco naumanni* on the original worksheet because these species are not confirmed to breed in Arabia, although the latter does have a breeding population of about 100 pairs in Jordan. The group did not have sufficient time to review all species scheduled for discussion because it considered it important to have proper time to discuss general issues and form ideas for some realistic recommendations. The species not considered because of lack of time were the African and Striated Scops Owls (*Otus africanus and O. brucei*), Spotted Eagle Owl *Bubo africanu*s and Little Owl *Athene noctua.*

The species that were reviewed (in the order considered) were as follows:

Osprey *Pandion haliaetus*

Black-shouldered Kite *Elanus caeruleus*

Black Kite *Milvus migrans*

Dark Chanting Goshawk *Melierax metabates*Gabar

Goshawk *Micronisus gabar*

Shikra *Accipiter badius*

Long-legged Buzzard *Buteo rufinus*

Common Kestrel *Falco tinnunculus*

Sooty Falcon *Falco concolor*

Barn Owl *Tyto alba*

Desert Eagle Owl *Bubo desertorum/ascalaphus*

Hume's Owl *Strix butleri*

The groups worked through the TDS document for each species, to identify and categorise the conservation situation appropriate for each in Arabia and review this against its global status as shown in the various documents available to the group. Working through the TDSs it became clear that certain themes and issues occurred over and over again for a number of species, (in TDS order)

a. There was only poor quality information available on population trends both nationally and regionally, and this inhibited detailed and valuable discussion.
b. Information on Arabian habitats, habitat change, and habitat losses due to development and agriculture was limited.
c. Although much anecdotal information was presented the degree to which each species is in local or international trade in the Arabian region is very poorly known.

d. There are very few detailed studies of the target species in Arabia.
e. The general lack of detailed research into populations, habitats and life histories in Arabia of the species reviewed hampered discussion.
f. Captive breeding was not identified as a relevant issue for Arabian species at present.
g. There was no clear information available of exactly which species, species groups etc have any degree of protection in the region. This restricted the group's ability to make recommendations towards legislation.

Conservation Status

The group considered the current global conservation status as published by the IUCN (BirdLife International 2004. In: IUCN 2004. 2004 IUCN Red List of Threatened Species. www.redlist.org.) and recommended which regional status is appropriate for Arabian taxa. Table 1 presents the results along with the suggested total Arabian populations for each – expressed as breeding pairs. (NB Many sources quote populations in terms of individuals. In very broad terms some workers use the yardstick that for every breeding pair the equivalent number of individuals is three.)

census data, which is surprisingly complete for this species, has revealed that the total Arabian population is probably less than 500 breeding pairs. Given that the Arabian population is generally regarded as the largest within its range (perhaps half of the world population) the generally quoted global population may actually be exaggerated by a factor of forty! This issue requires urgent investigation. It is thought that the published total may have been extrapolations of partial counts in the species winter range.

Apart from the situation with Sooty Falcons the group considered that the two most pressing issues concerning raptor and owl conservation in the Arabia region were as follows.

1) There is a need for much greater public awareness of threats and issues facing these species and how these might be overcome, and

2) There is great need for detailed studies of most of these species, including their habitats, populations and life histories, to address their conservation status and identify population trends.

Species	Global IUCN Conservation Status	Conservation Status in Arabia	Arabian Population (Breeding Pairs)
Osprey	Least concern	Vulnerable C1	830
Black-shouldered Kite	Least concern	Vulnerable C1	15
Black Kite	Least concern	Least concern	15 000
Dark-chanting Goshawk	Least concern	Near threatened	1 000
Gabar Goshawk	Least concern	Vulnerable D1	200
Shikra	Least concern	Vulnerable D2	428
Long-legged Buzzard	Least concern	Near threatened	800
Common Kestrel	Least concern	Least concern	10000
Sooty Falcon	Least concern	Endangered C2a1	450
Barn owl	Least concern	Vulnerable C1	1 000
Desert Eagle Owl	Least concern	Near threatened	1 500
Hume's Tawny Owl	Least concern	Least concern	1 700

Table 1: Global IUCN conservation status of species reviewed, with estimate current Arabian breeding population (pairs)

Discussion

Perhaps the most important result of the discussion was the realisation that there appears to be a fundamental error in the published information on the known world population of the Sooty Falcon. This species is credited with a world population according to IUCN (BirdLife International 2004. *Falco concolor*. In: IUCN 2004. 2004 ICUN Red List of Threatened Species; www.redlist.org.) of 100,000 individuals and similarly in, el Hoyo et al (1994) Handbook of the Birds of the World, as 40,000 pairs. However careful research of all Arabian

Recommendation and actions of this group will be reported in a future edition of Falco. See the workgroup site - http://www.hawar-islands.com/forum/main.php. The proceedings of the Conservation Workshop of the Fauna of Arabia held at Sharjah Desert Wildlife Park, 2006 will be released in due course.

Confiscation of Falcons at Khalid Seaport, Sharjah.

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Staff at the Breeding Centre for Endangered Arabian Wildlife were asked to collect a shipment of confiscated Falcons at the Khalid Seaport in Sharjah on 31st October.

The falcons were confiscated by the Sharjah Coastguard from a fishing boat en route from Iran to Qatar. The birds were hidden under a shipment of fish and were wrapped in cloth and stored in hidden compartments in very small boxes. All falcons had their eyelids stitched closed with cotton thread. None of the birds had any identification marks, leg rings or identification microchips. There were no export or import permits or health certificates with the birds. After inspection the following birds were found:

5 Saker Falcons (*Falco cherrug*) CITES II
1 Lugger Falcon (*Falco jugger*) CITES I
26 Peregrine Falcons (*Falco peregrinus*) CITES I

Fig 1. *Smuggled falcons wrapped up at coast guard station.*

This shipment clearly appeared to be an attempt to smuggle endangered species since:

- None of the birds had valid CITES permits.
- The birds were hidden under other cargo and were stored in very small boxes that were not suitable for transporting live animals.
- At the moment no bird transports are allowed due to the threat of avian flu.
- Nobody with an interest in falconry would ship birds in this way. Faster and more comfortable shipment by air instead of by sea would have been chosen, as has been demonstrated with several legal bird transports passing through the various regional airports.

This shipment was also in violation of live animal transport regulations and did not take care of animal welfare issues:

- All the birds were tightly wrapped and put in very small boxes, often 3 and 4 together, an unacceptable way to transport live birds.
- All birds had their eyelids stitched together with inappropriate material and technique causing trauma to the eyelids. Covering the heads with falconry hoods would have been much less stressful.
- None of the birds were healthy enough to travel and some of them had obviously been left without food or water for a long time.
- All birds had heavy parasite infestation both internally (worms and coccidia) and externally (fleas and lice).

On arrival at the Breeding Centre for Endangered Arabian Wildlife, all the birds were tested for avian flu with a quick test provided by the Veterinary Department of the Sharjah Municipality. All birds tested negative. The birds were treated against internal and external parasites and given oral rehydratation fluids. The threads were removed from their eyes; they had caused serious trauma to the eyelids with crust formation and several of the birds needed treatment with eye ointment for several days. All the birds were hooded and placed in two recovery rooms. Two hours later they all received a first small meal.

Three Peregrine Falcons died in the first few days after confiscation. On post mortem they had severe airsacculitis and lung abscesses. Three other falcons

that were not in very good condition were taken to the Dubai Falcon Hospital for an endoscopic examination. X-rays were also taken, blood samples were collected and faecal and oral samples checked. One falcon already showed severe dyspnoea, endoscopy and X-ray confirmed a fulminating aspergillosis of lungs and airsacs that was beyond treatment. He also showed a severe anaemia and lots of internal parasites. One falcon had a dislocated back toe. The injury was already more than a week old and the tissues around the toe had become necrotic. Amputation of the toe was indicated. Another bird had skin lesions on the feet and swelling of the joint caused by trauma during transport. The wounds were treated and his feet bandaged to help healing and prevent the development of bumble foot. Despite previous treatment they also still had lots of internal parasites such as trematodes and coccidia. They needed additional treatment. These three birds were also all tested for *Chlamydia* but were negative.

Fig 2. *Young Peregrine from smuggled shipment receiving veterinary care.*

All birds were started on a preventative dose of itraconazole to avoid infection with aspergillosis, an opportunistic fungal infection that would spread very easily in a group of birds under stress. Serum was collected from a percentage of the birds for research in progress at the Dubai Falcon Hospital on the prevalence of avian flu antibodies in wild and captive birds.

After two weeks it was decided that the birds would be moved to the National Avian Research Centre in Abu Dhabi since this institute is much better equipped to take care of large groups of birds. Suitable birds may later take part in the Sheik Zayed Release Project in Asia.

Common Endoscopic and Cytology Findings of Respiratory Tract Diseases in Falcons in the Middle East

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Summary
Endoscopy and cytological examination of biopsies collected during endoscopy are an important diagnostic combination in avian medicine. Our article presents images (endoscopy and cytology) of commonly diagnosed diseases of falcons in the Middle East.

At Dubai Falcon Hospital endoscopy is performed on falcons that have been anesthetized with a combination of injectable and gaseous anesthesia. We use an injectable combination of ketamine (3 mg/kg IM) plus medetomidine (60 mg/kg IM) to induce anesthesia. Anesthesia is maintained with isoflurane administered in oxygen via a facemask and adjusted to individual patient requirements. The effect of medetomidine is reversed at the end of endoscopy by atipamezole (150 mg/kg IM).

We examine the upper respiratory tract and the lower respiratory tract on both sides of the body. The approach to examine the trachea is through the oral cavity and the glottis while the neck of the bird is extended. To gain unilateral access to the caudal thoracic airsac a standard left and right lateral approach, with the pelvic limb pulled caudally, is performed. A small skin incision, made just between the last two ribs, facilitates entry into the caudal thoracic airsac and from there into the ipsilateral cranial thoracic and abdominal airsacs. The incision site is closed with monofilament 4-0 polydioxanone sutures.

The following photos were taken using a rigid, 30° telescope, 2.7 mm in diameter and 18 cm in length inside a 14.5F examination sheath with a 5F instrument channel. Illumination was provided by a xenon light source. The procedures were observed with an endovision video camera combined with an endoscopy system software.

The biopsy samples for culture and cytology were obtained directly using a biopsy forceps or via airsac

lavage. Impression smears were made on microscopic glass slides, slides were air dried, fixed and stained with a differential heamatology stain.

Diagnosis was made after reviewing the findings of clinical examination, radiography, hematology, blood chemistry and parasitology, in addition to cytology and endoscopy.

A: Common findings in the oral cavity and the trachea:

1. Iatrogenic injuries

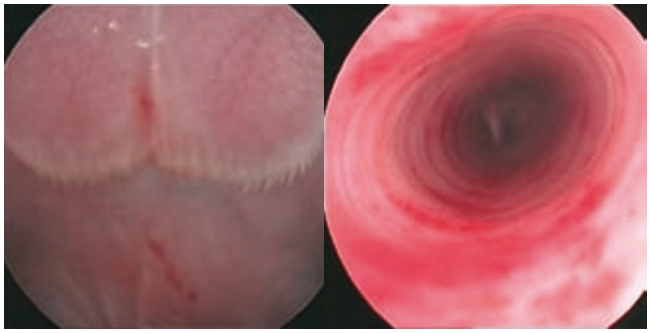


Fig 1 (Left). Small abrasions near the papillae on the palatinum caused by endotracheal tube placement.
Fig 2 (Right). Superficial abrasions down the trachea caused by endotracheal tube placement.

2. Bacterial glossopharingitis

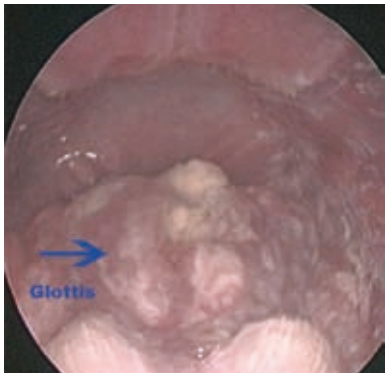


Fig 3. Bacterial plaques on the mucous membranes of the oral cavity and the glottis caused by *Pasteurella spp.*.

3. Fungal granulomas

Fig 4. White granulomas at the bifurcation of the trachea caused by *Aspergillus sp.* blocking the right bronchus completely and left bronchus by about 90%.

4. Foreign bodies

Fig 5. Soft foreign body deep in the trachea. A piece of meat stuck just above the bifurcation.

B: Common findings in the airsac

As seen below bacterial colonies can sometimes appear as relatively small white to cream coloured, wet and soft looking dots with a shiny and smooth surface. Bacteria that are commonly isolated from the lower respiratory tract of falcons include *Pasteurella multocida*, *Pseudomonas aeruginosa*, *Escherichia coli* and *Staphylococcus aureus.*

1. Bacterial growth

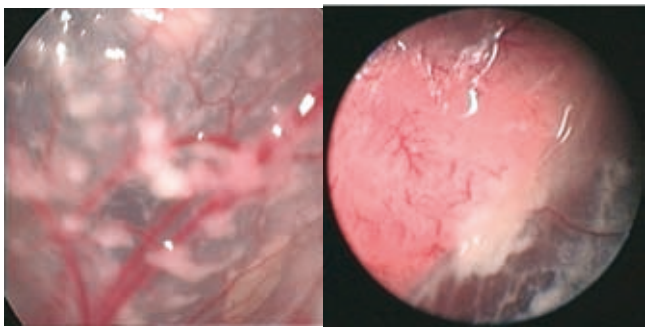


Fig 6 (Above left). Multiple small coalescing bacterial colonies on the airsac membrane.

Fig 7 (Above right). Bacterial plaque near the lung.

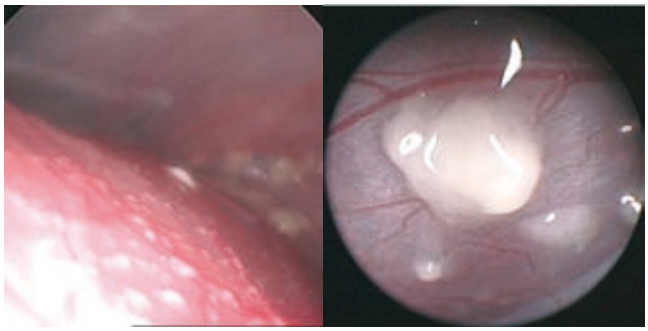


Fig 8 (Above left). Multiple small bacterial colonies on the airsac membrane covering the serosa of the lung.

Fig 9 (Above right). Wax drop-like bacterial plaque on a vascularized airsac membrane.

2. Fungal growth

In the early stage the colonies cannot be distinguished from bacterial growth but later on the fungal colonies or granulomas are embossed, most are not round shaped and they tend to have a coarse structured surface

that looks dry. In mature stages the identification of the sporulating fungus is easy. Often there is white to yellowish flocculent fluid present in the airsac margins. Although *Aspergillus fumigatus* is the most commonly isolated fungus, it accounts for less than half of all fungal isolates in falcons at Dubai Falcon Hospital. Other fungi that are commonly isolated from falcons with lower respiratory tract disease in order of prevalence include *A. flavus, A. terreus,* and *A. niger.*

a) Advanced stage

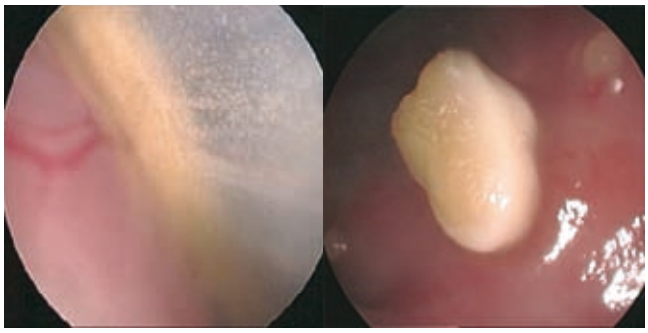


Fig 10 (Above left). White to yellowish flocculent fluid is often seen in early cases of aspergillosis.

Fig 11 (Above right). Fungal granuloma (aspergillosis) on the airsac membrane covering the serosa of the liver.

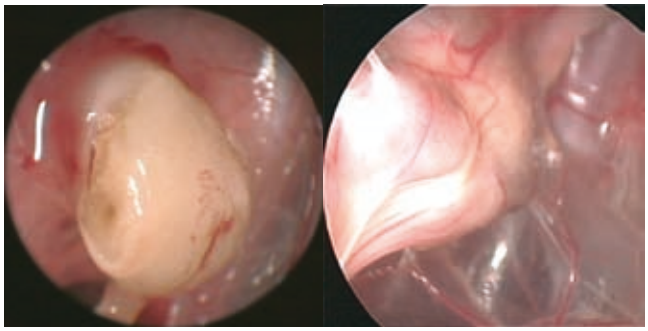


Fig 12 (Above left). Encapsulated fungal granuloma (after biopsy) The capsule is already becoming vascularized.

Fig 13 (Above right). Fungal granulomas can be completely encapsulated within a vascularized capsule.

b) Mature fungal colonies

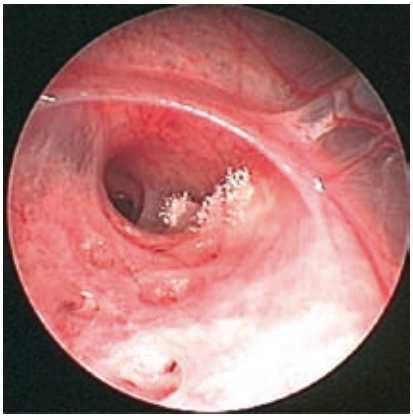


Fig 14 (Above). Sporulating fungal colonies next to the ostium of the lung. This is a common early location and has to be investigated with special care.

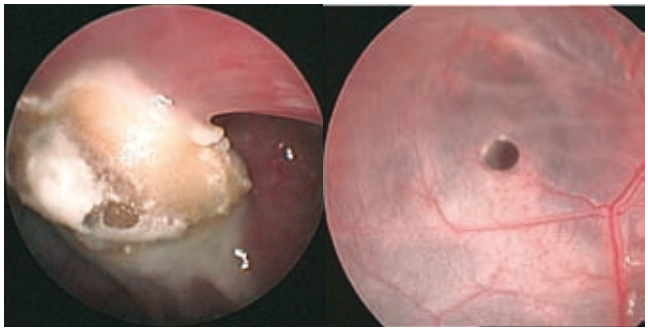


Fig 15 (Above left). Large fungal granuloma (aspergillosis).

Fig 16 Above right). Occasionally fungal infections create holes in the airsac membrane.

c) Disseminated aspergillosis

Fig 17. If unnoticed or untreated the fungal infection disseminates throughout the lower respiratory tract and other abdominal organs filling, together with inflammation products and debris, the airsac completely and possibly breaking through the membrane to spread into neighboring airsacs. This impedes understandably the breathing of the patient enormously and can make it impossible to perform an endoscopy.

3. Parasites

Living parasites in the airsacs can readily be identified from their gross appearance and their eggs can be identified by cytology. One week after antiparasitic treatment, the parasites become detached from the serosa and form a 'ball of worms' within the airsac space that can be readily removed during endoscopy. Two to three weeks later the mass of worms becomes yellow to brownish, slimy and shapeless.

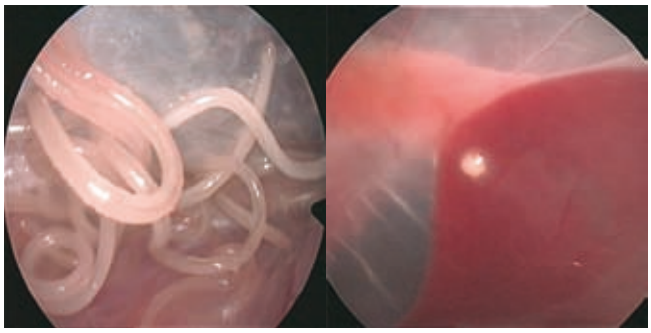


Fig 18 (Above left). These live adult *Serratospiculum sp.* worms can often be found in surprisingly large numbers.

Fig 19 (Above right). The *Serratospiculum* nematodes lay their eggs in the airsac as shown here on the airsac membrane covering the serosa of the liver.

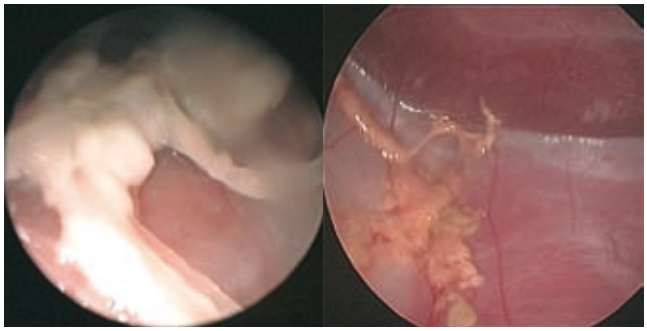
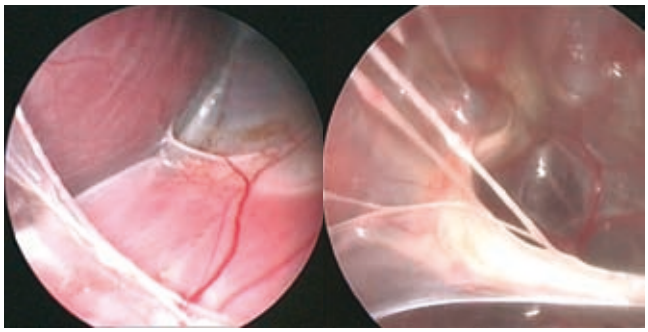


Fig 20 (Above left). After parenteral treatment with avermectin drugs the parasites die and begin to decompose (here 7 days after doramectin treatment).

Fig 21 (Above right). A few weeks later most of the debris of the worms is already becoming absorbed.

4. Adhesions



Figs 22 & 23 (Above). As a result of previous inflammation adhesions can be seen between different surfaces in the airsac. This interferes with air circulation and may act as a focus for further infection.

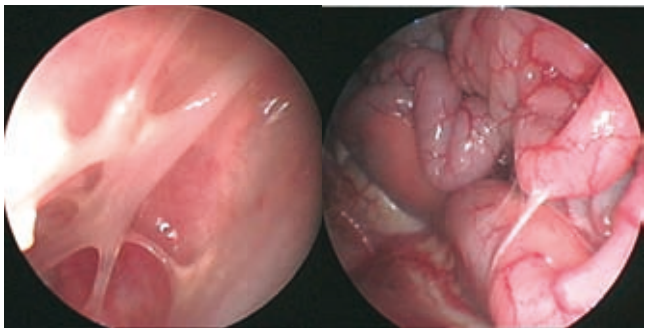


Fig 24 (Above left). Here in front of the ostium of the lung.
Fig 25 (Above right). This adhesion can also be seen between intestinal loops. (View into the abdominal airsac)

C. Commonly found changes of the appearance of the lung:

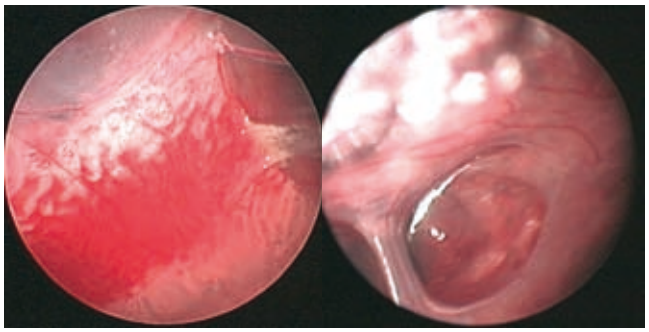


Fig 26 (Above left). Congestion of the lungs due to infection can occur on different parts of the lung.

Fig 27 (Above right). Discoloration and a lumpy surface are typical of a severe pneumonia as seen in this ostium.

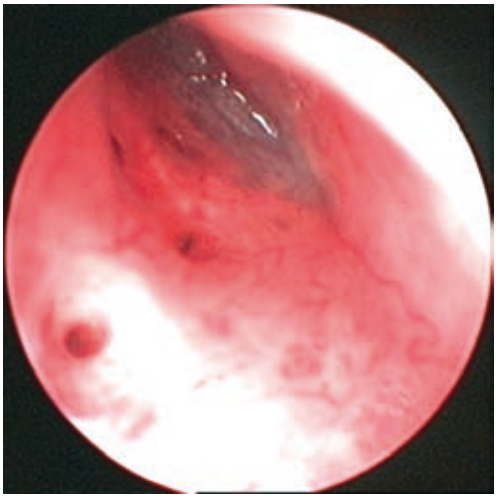


Fig 28 (Above). Inflammation of the lung or the bronchi can lead to overproduction of mucous which can obstruct the ostium.

D. Cytology:

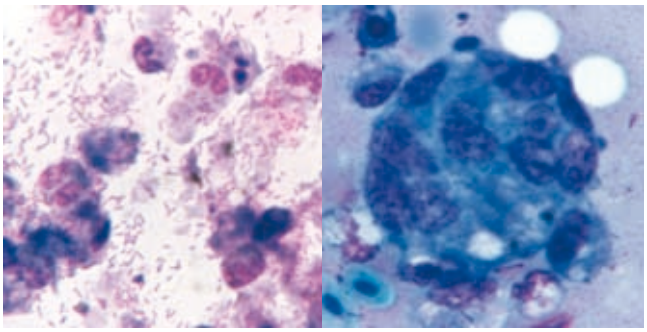


Fig 29 (Above left). Smear from the airsac of a Gyrfalcon with bacterial airsaculitis showing numerous bacterial rods and inflammatory cells. (1000x, Neat stain).

Fig 30 (Above right). Smear from the airsac of a Gyrfalcon showing multinucleated giant cells due to fungal infection (aspergillosis; 1000x, neat stain).

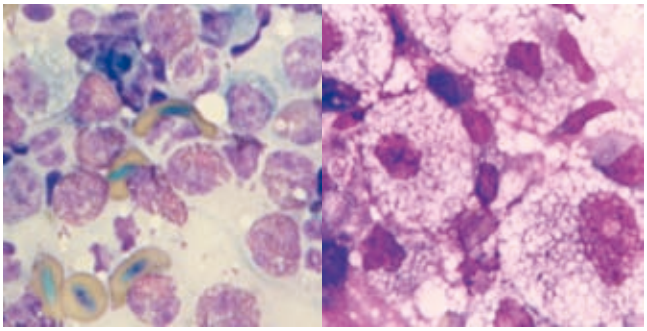


Fig 31 (Above left). Smear from the airsac of a Gyr falcon showing mixed inflammatory cells including macrophages and heterophils due to aspergillosis. (1000x, Neat stain).

Fig 32 (Above right). Airsac lining squamous cells shows cytoplasmatic vacuolation. This is a common finding in fungal airsacculitis and serratospiculosis (1000x, Neat stain).

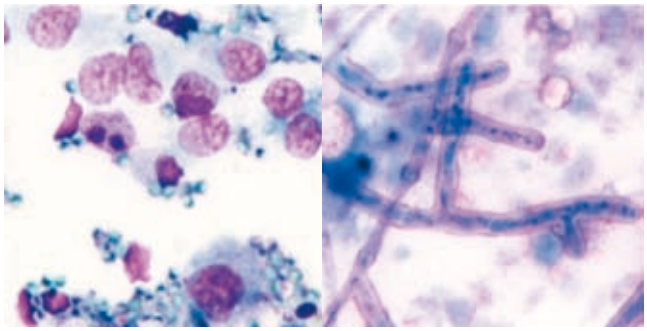


Fig 33 (Above left). Smear from the airsac of a Gyr falcon with aspergillosis showing Aspergillus spores and macrophages. (1000x, Neat stain).

Fig 34 (Above right). Smear from the airsac of a Gyrfalcon with aspergillosis showing septated Aspergillus hyphae. (1000x, Neat stain)

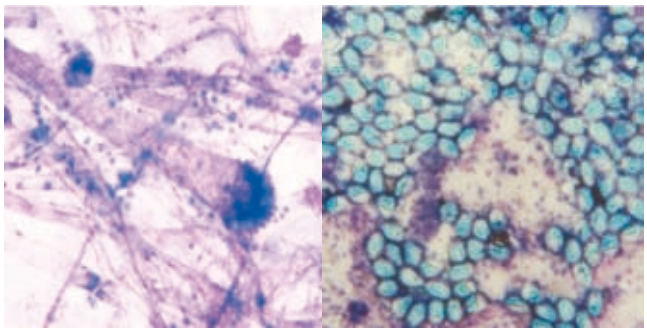


Fig 35 (Above left). Smear from the airsac of a Gyrfalcon with aspergillosis showing Aspergillus conidiophores and hyphae. (1000x, Neat stain).

Fig 36 (Above right). Smear from the airsac of a Saker Falcon showing *Serratospiculum spp.* eggs. (1000x, Neat stain)

Acknowledgements

We thank H.H. Sh. Hamdan bin Rashid al Maktoum and Mr. Humaid Obaid al Muhairi, Dubai Falcon Hospital Director, for their support of the work of Dubai Falcon Hospital and all of the falcon hospital team, especially Mr. Rejimon Joseph, for their assistance with cases. Adapted from: Ofner W, Bailey T, et al: Common Endoscopic and Cytologic Finding in Falcons with Respiratory Disease. Exotic DVM 7(4):35-41, 2005, and used with permission.

Use of the FixEx Tubulaire Type F.E.S.S.A System for Tibiotarsal Fractures in Falcons

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Summary

Tibiotarsal fractures are very common fractures in birds. In 5 falcons that were presented at the Abu Dhabi Falcon Hospital (ADFH), tibiotarsal fractures were diagnosed. The FixEx tubulaire Type F.E.S.S.A. fixation bar system (Figures 1 and 2) was used to achieve an improved fracture healing and enable better weight bearing of the fractured legs. All falcons showed full function of the operated legs after surgery. The advantage of the FixEx tubulaire Type F.E.S.S.A. system included ease of use, light weight, flexibility of the size and holes of the bars for the realignment of the bones, the possibility of partial pin removal or partial connection. The results of this report show that this system is suited for different kinds of fracture repair in falcons and other birds as well as in other animal species like exotics.

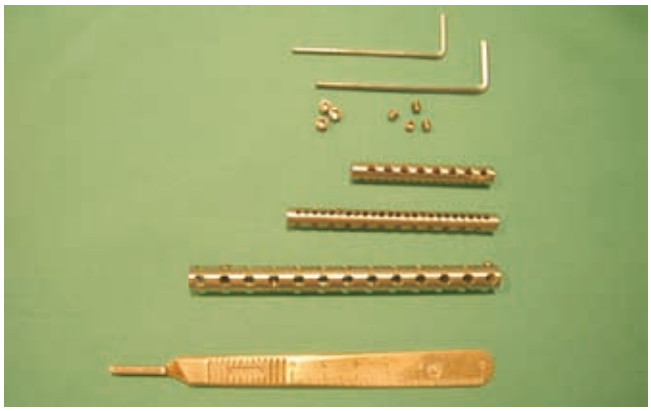

Fig 1 (Above). Comparative view of the single fixation bars, screws and screw drivers of FixEx tubulaire F.E.S.S.A. system.

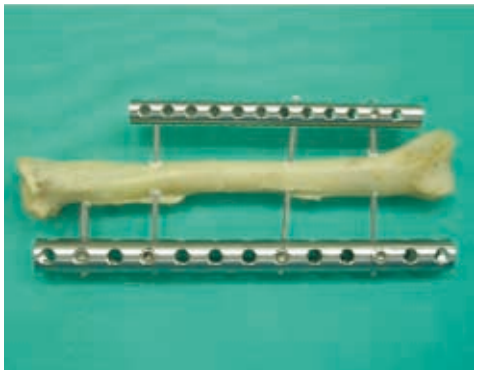

Fig 2. Model of tibiotarsus with FixEx tubulaire F.E.S.S.A. system intramedullary pin 3/16" (4.8m) external pin 1/16" (1.6mm).

Introduction
Tibiotarsal fractures in falcons are a common fracture type frequently experienced during the training and hunting period from September to April. The main problems in fixing these fractures are the heavy weight of the fixation bars in external fixations and rotation of intramedullary pins. The other problem is that a partial removal of the pins is difficult as it can affect fracture stability.

Case study
From October 16th to December 5th 2005, five first year female Gyr-Saker hybrid falcons (*Falco rusticolus x Falco cherrug)* were presented at ADFH with tibiotarsus fractures. Four falcons had a fractured right leg and one falcon suffered from a fractured left leg. The fractures included a mid-shaft fracture, two oblique segmental fractures (Figure 3) and two green stick fractures.

Fig 3. Case 1 before fracture repair.

Anaesthesia and surgery preparation
All falcons were anaesthetized with isoflurane and oxygen following standard methods. The distal part of the limb was covered with sterile gauze and the exposed fracture area was cleaned with commercial prep solution containing 10% Povidone Iodine followed by Betadine® scrub after plucking of the feathers.

Open fracture repair
In case of the two open fracture repairs, an incision of 4 cm was made using a medial approach and the muscle layers were carefully divided to reach the fractured bone ends. The intramedullary pin was inserted on the lateral condyles of the proximal tibiotarsus end and push down to the fracture site. Under sight, an intramedullary pin (3/16" (4.8mm), trocar point, (Imex Veterinary Inc. USA) was inserted normograde into the distal medullary cavity of the fractured bone to the end of the bone marrow cavity of the distal tibiotarsus. Then the open wound was flushed with Piperacillin and Sodium chloride Ph Eur0.9%. The muscle layer was stitched with absorbable Vicryl 4/0® and the skin sutured with polyamide 6 monofilament non-absorbable suture Ethilon 3/0® in single mattress pattern.

Closed fracture repair
For the three closed fracture repairs, the intramedullary pin (3/16" (4.8mm), trocar point, Imex Veterinary Inc., USA) was inserted on the lateral condyles of the proximal tibiotarsus end and pushed down normograde to the fracture site. The fractured bone ends were held in correctly aligned position and the pin was carefully pushed through the fracture site to the end of the bone marrow cavity in the distal tibiotarsus.

External fixation
The lateral and medial area of the intended pin was disinfected again with 10% Povidone Iodine. Then one external pin 1.8" (3.2mm), trocar point, was carefully drilled proximal of the fracture site from lateral to medial through the bone while rotating the leg to the medial side like the non-fractured leg. Then a second external pin was placed distal of the fracture site in the same way. In the open fracture repair of case #3, the external fixation was performed with two distal external pins. After insertion of the extramedullary pins, the IM pin was bent at a ninety degree angle to the long axis of the tibiotarsus. The external fixation of the pins followed by selecting the suitable fixation bars FixEx tubulaire M3 16 hole 6 x 46 mm, FixEx tubulaire M3 24 hole 6 x 67 mm and FixEx tubulaire 13 hole M4 8 x 97 mm. The selected bars were fixed with hexagonal screws (Figure 4).

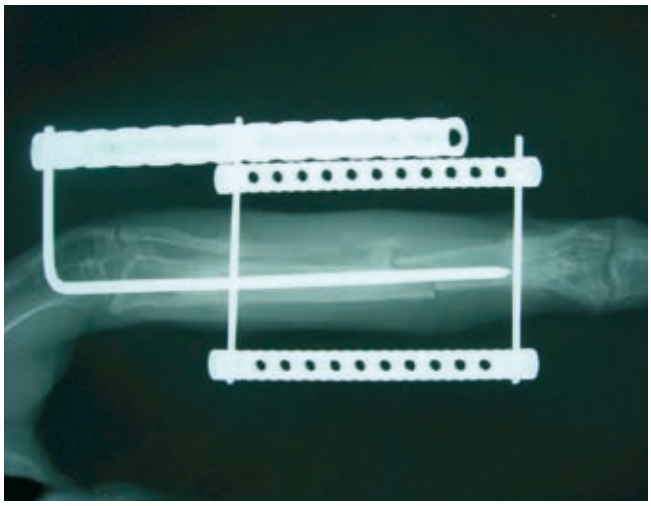

Fig 4. Case #1 after surgery with IM pin, two external pins and two external FixEx tubulaire fixation bars.

Bandaging
The suture site of the open fracture repair cases and pin areas in all cases were covered after veterinary wound powder application with low adherent absorbent non-adhesive dressing (Melolin, Smith&Nephew Medical Ltd, UK) and bandaged with Sof-Kling conforming bandage™ (Johnson&Johnson, USA) and adhesive bandaging tape 3M Vetrap™ (3M Health Care, Germany).

The selection and use of the FixEx tubulaire fixation bar system (Figures 1 and 2) in the single cases is described in Table 1.

	Case 1	Case 2	Case 3	Case 4	Case 5
Type of fracture	**Oblique segmental**	**Green stick**	**Oblique segmental**	**Mid- shaft**	**Green stick**
Open/closed surgical approach	open	closed	open	closed	closed
No of days till start of callus formation	14*	8	7	13*	7
No of days till first pin removal	36	35	30	28	28
No of days till final pin removal	40	40	30**	28**	28**
Days in treatment incl. 7 days aftercare	45	48	36	34	34
Intramedullary pin	yes	yes	yes	yes	yes
Nos of external pins proximal of fracture	1	1	1	1	1
Nos of external pins distal of fracture	1	1	2	1	1
FixEx tubulaire M3 16 hole 6mmx46mm		1	2		
FixEx tubulaire M3 24 hole 6mmx67mm	2			1	1
FixEx tubulaire 13 hole M4 8mmx97mm	1	1	1	1	1

Table 1. Orthopaedic fixation approach compared in the five cases.
Note: * Date of first X-Ray after surgery, possible callus formation earlier
** All pins were removed in the same time

Immediate post surgical result

All falcons received Marbofloxacin 10% injection im (Marbocyl®, Vétoquinol, France) 0.1 ml/kg BW BID as antibiotic coverage. An intravenous injection of 0.9% sodium chloride and glucose 5% was administered with the amount of 10 ml per falcon post surgically as well as a subcutaneous application of 40 ml compound sodium lactate. The non steroidal anti-inflammatory analgesic Tolfedine® 4% (Tolfenamin acid, Vétoquinol, France) was given at a dosage of 0.15 ml/kg BW IM directly. The falcons stood on both legs with equal pressure distribution approximately 24-48 hours after surgery. No lifting of the fractured leg was observed in any case.

Fig 5. Case 1 after partial pin removal on day 30 after surgery.

Post-surgical management

In all cases, the antibiotic coverage with Marbofloxacin 10% injection 0.1 ml/kg BW BID was continued for 7 days. For the enhancement of the wound healing, Traumeel® ad us. vet. and Zeel® ad us. vet. (Heel, Baden,-Germany) were injected via subcutaneous route at a dose of 1.0 ml per falcon daily for 2-3 days. The first radiograph was taken after 7 to 14 days postoperatively and then every 7-10 days. Due to the fact that these falcons were not trained falcons and were therefore very nervous, they were kept on a sponge covered with artificial grass carpet on a square perch of 12.5 cm diameter and 25 cm height. Only the non-fractured leg was tied with jesses. Moreover, the contra lateral foot was protected from developing pressure sores with a soft shoe bandage. The food was fresh quail cut in small pieces to which 1.0 ml calcium and vitamin D_3 supplement (Calcivet™, Vetafarm, Australia) was added daily over a period of 3 weeks to support a faster callus formation. In case 1 and 2 a partial pin removal was performed on day 35 and 36 after surgery (Figure 5). After complete pin removal (Figure 6), the falcons were kept another 7 days in the hospital without any medication to observe the healing process and proper motion. Before being discharged all falcons were radiographed again.

Immediately after their discharge from the falcon hospital, four falcons were sent back to intensive training and were used successfully for hunting within one to two months. The fifth falcon broke the leg again due to an accident.

Fig 6. Case 1 after pin removal on day 38 after surgery.

Discussion

The FixEx tubulaire F.E.S.S.A. system has been used in wing fractures [1] and is very helpful in the repair of different avian fractures either for large or small birds due to different size of the bars. Moreover, its major advantages are the light weight, easy application, early return to normal limb function, re-usability and cost-effectiveness. The light weight of the connector bars enables birds to become weight bearing early after surgery. The flexibility of the FixEx tubulaire F.E.S.S.A. system allows part removal of pins depending on the healing process without disturbing the other remaining pins. Moreover, the different placement of the holes allows vertical and transversal placement of pins which might be useful in fractures with many comminuted bone pieces. It also allows the use of different sizes of pins due to the varying diameters of the bar holes. The FixEx tubulaire F.E.S.S.A. system is a practical orthopaedic system which allows faster and more accurate fracture repairs. We recommend the FixEx tubulaire F.E.S.S.A. system for fracture repair in falcons[2]

Acknowledgements

We would like to acknowledge the continuing support of H.E. Mohammed Al Bowardi, Managing Director, EAD, and Mr. Majid Al Mansouri, Secretary General, EAD, for the Abu Dhabi Falcon Hospital. Our deepest thanks go to the staff of the Abu Dhabi Falcon Hospital for providing technical assistance and dedication.

References

[1] Hatt, J.M. and Orosz, S.E. 2004. External Fixation of fractures of the thoracic limb. Workshop at the European Association of Avian Veterinarians, Arles, France.

[2] Muller, M.G. and M.J. Nafeez 2006. A new approach for tibiotarsal fractures in falcons with the FixEx tubulaire Type F.E.S.S.A system. http://www.falconhospital.com/en/Page_326.aspx

The Pre-Purchase Veterinary Examination of Falcons in the United Arab Emirates

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Summary

Every year, large numbers of captive-bred falcons are presented for a pre-purchase veterinary examination at the various veterinary centres in the United Arab Emirates (UAE). The falcons, destined for training in the sport of falconry, are assessed by veterinarians working directly for VIPs or in private veterinary hospitals. In most cases the falconers wish to check if the falcon is affected by aspergillosis. The more obvious reasons for rejection of purchase, e.g. fractures or terminal bumblefoot, rarely get to the stage of a veterinary examination as falconers screen these cases themselves without veterinary input. Minor conditions are noted, but are considered insignificant by the veterinarian. The majority of cases are rejected due to the detection of active aspergillosis, diagnosed by endoscopic examination of the respiratory tract. A thorough clinical and endoscopic examination forms the basis of the pre-purchase veterinary examination for falcons in the UAE.

Introduction

The tradition of falconry in the UAE has seen major changes in the last decade. The trapping of wild falcons for use in falconry, has been replaced by the use of captive-bred gyrfalcon hybrids. Every year, large numbers of captive-bred falcons are presented for a pre-purchase veterinary examination at the various veterinary centres in the UAE. In the past, most were imported but there are now a number of successful breeding centres in the UAE. In early September the new batch of young falcons arrive and there is a frantic period when each vet may have to assess large numbers of falcons daily. Towards the end of the falconry season, many are checked endoscopically prior to sale or placement in moulting chambers in UAE.

In the field of equine veterinary medicine, it has been accepted practice for many years for the prospective purchaser of a horse to ask for the opinion of a veterinarian before the horse is purchased. There is a recognized protocol involved (Mantell, 1998). The aim is to carry out a complete veterinary examination and to identify and assess those findings that may affect the horse's suitability for its intended use. The prospective purchaser may then make an informed decision as to

buy or reject the bird. This is in effect what avian vets in the UAE do each year . The avian veterinarian provides the purchaser with an opinion regarding whether or not to purchase the falcon.

Common conditions which can affect the health of falcons in the Middle East.

- Aspergillosis affecting the lungs, trachea and airsacs
- Advanced choanal and crop trichomoniasis
- Corneal injuries (usually when catching from cage or from hood injuries)
- Plantar pad pressure necrosis (bumblefoot)
- Shoulder and elbow joint problems
- Amyloidosis of the liver
- Primary feather follicle damage

With experience and knowledge of what the falconer expects from the falcon, minor problems are recorded, but may be considered insignificant. Coccidiosis, serratospiculiasis and bacterial airsacculitis are not reasons to reject a falcon. Chronic aspergillosis granulomas, if inactive and not causing airway obstruction may be considered insignificant, but each case is different and the experience of the veterinarian is critical.

"How far do we go when performing a pre-purchase examination."
The pre-purchase examination in horses does not routinely involve radiology or other tests. The need for x-rays is at the discretion of the examining vet. If clinical signs or a specific history alerts the clinician to a possible problem, further tests may be advised. A similar situation should exist for falcons. Many falcons when presented for examination at the start of the season have blood analysis results suggesting mild myopathy and dehydration. Many falcons are purchased without a blood test being performed. In confiscated falcons with an unknown history and in older falcons, blood analysis can be useful to detect inflammation, renal compromise, anaemia and assess liver function. Screening gyrfalcons imported from the USA for avian malaria is also recommended. It is important that a thorough clinical examination forms the basis of the pre-purchase examination.

Falcons purchased for falconry must be able to fly and hunt when they complete the training programme. Unlike the case with horses, avian vets rarely have the luxury of examining a falcon after exercise (Photo 1). Part of the examination should at least involve some enforced wing flapping to assess wing carriage post-exercise. In doubtful cases the veterinarian can advise the buyer that a post–flying assessment of wing function is advised. In most cases, experienced falconers will detect these problems, so the falcon will not get to a stage of the veterinary examination. Some minor muscle strains can resolve in several days but serious soft tissue injuries can mimic these. An opinion on such cases can be deferred pending a follow up examination after a one week period or following a limited flying exercise.

Photo 1. A post exercise assessment is unfortunately not often a part of the pre-purchase veterinary examination.

A major problem with newly arrived, untrained falcons is the risk of self inflicted injury during handling. Examinations tend to be carried out under general anesthesia, but it is essential that a pre-anaesthetic assessment is carried out.

Aspergillosis is a major problem in falcons (Redig, 2000). This is especially true of young gyr-hybrid falcons in the Middle East (McKinney unpublished data). It is often triggered by the stress of early training in a hot environment and can result in death or breathing disorders in many falcons. Falconers want to know if the falcon has aspergillosis before they purchase. Most cases cannot be detected by radiography or blood analysis. Endoscopy of the trachea, lungs and airsacs is a crucial part of the pre-purchase veterinary examination. The veterinarian is looking for active infection and signs of chronic (old) infection and associated adhesions and masses. The endoscopic examination of the trachea, lungs, and the caudal thoracic airsacs, allows the veterinarian to assess the presence of infection, adhesions and space occupying masses, all of which may affect flight performance. The endoscopic examination does not usually include the cranial thoracic or abdominal airsacs or other airsacs. It must therefore be made clear to the purchaser that not all of the respiratory tract can be seen on endoscopy. Most pre-purchase veterinary examinations will be dependant on the results of the endoscopic examination.

Some lesions visible on endoscopy may be considered insignificant i.e. will not be likely to affect the health of the falcon. Other cases show lesions that may require further analysis including cytological examination and fungal culture. These tests may take time and an opinion on suitability for purchase may have to be postponed until all test results are complete. It is important to clarify to the purchaser that an endoscopic examination on a specific date does not mean aspergillosis will not occur at some point in the future.

Amyloidosis is common in older gyrfalcon hybrids in the UAE (McKinney, 2002). Older falcons should be radiographed, blood sampled and undergo endoscopic examination, to assess liver size and function. The veterinary examination allows the veterinarian to submit an opinion as to whether or not the purchaser should buy the falcon. The purchaser may decide to take a chance and proceed with a purchase despite the opinion of the veterinarian. All clinical findings and opinions should be recorded as it is common practice for vendors who have had falcons rejected in a pre-purchase examination to go to another veterinarian for a second opinion.

The pre-purchase veterinary examination is also applicable to raptors submitted for rehabilitation. In such cases behavioural and fitness factors must also be assessed prior to release.

Acknowledgements
I thank the falconers of Dubai for their hospitality and guidance.

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Continuous Fluid Infusion Therapy in Falcons

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Introduction

Constant infusion fluid therapy in birds is infrequently used because of the practicalities of maintaining indwelling catheters. In hunting falcons most practitioners are reluctant to use intra-osseous catheters because of the risk of damaging articular cartilage. Repeated intra-venous boluses are often used in debilitated and shocked birds however the disadvantages of this include repeated handling, venupuncture and potential circulatory overload. This article describes a method of placing and maintaining an intravenous infusion in falcons. The method has been used extensively at our hospital for both fluid therapy and drug administration and is tolerated well in hooded patients for 2-3 days.

Equipment Required

- Springfusor 30: Syringe infusion pump. Go Medical industries Pty Ltd, Australia
- Leur lock 20 ml Syringe
- Refill port and extension set for flow control tubing. Go Medical industries Pty Ltd, Australia
- Flow control tubing. 10 ml in 60minutes / 10ml in 2 hours / 10 ml in 4 hours
- 24G, 19 mm intravenous cannula
- Superglue
- Paper surgical tape
- Conforming elastic bandaging

Figs 1 & 2 (Above)
Under isoflurane anaesthesia the bird is placed in dorsal recumbency. Catheters can be placed in recumbent birds without anaesthesia. The brachial vein is catheterised and the catheter is temporarily held in place with superglue.

Figs 3 and 4 (Above)
The catheter is stitched in place with nylon sutures. The catheter position is reinforced by tying to the shaft of the nearest secondary feather.

Figs 5 and 6 (Above)
Flow control tubing is attached to the catheter then looped between the secondary feathers to emerge on the dorsal surface of the wing

Figs 7, 8 and 9 (Above)
The flow control tubing is secured using a “figure of 8” of paper tape and the wing is bandaged with conforming bandage. The bird can be maintained on a block during treatment.

Use of the VetScan® Classic in Falcons

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Summary
Blood chemistry reference values obtained with an in-house clinical analyzer (Vetscan® Classic; Abaxis®) from 44 healthy adult female pure Gyrfalcons *(Falco rusticolus)* and gyr-hybrids are presented.

Introduction

Reference plasma chemistry values for several species of raptors have been published (Samour and D'Aloia 1996, Lumeij *et al* 1998, Samour 2000, Pollock *et al* 2005). Reference values have to be establish under similar conditions and they maybe affected by age and sex, season of sampling (Gelarch 1979 cited by Lierz 2003), time of feeding (Lumeij and Remple 1991), stress and food source (Kraft 1998 cited by Lierz 2003), and diagnostic tools used before sampling (Lierz *et al* 1998).

Hunting falcons are valuable birds, and this fact makes necessary the use of accurate diagnostic techniques (Lierz 2003). Blood chemistry assays and their interpretation have been incorporated as important aids of diagnosis of disease in veterinary medicine (Harr 2002). These analyses are difficult to evaluate without reference values of clinically normal individuals and the knowledge of the variation of biochemistry parameters in response to different pathological conditions (Samour and D'Aloia 1996).

In-house clinical analyzers such as the VetScan® eliminate the difficulties of conventional laboratory analyzers. Plasma chemistry reference values for an exotic species have been established using the VetScan® analyzer (Mayer *et al* 2005). Advantages of the VetScan® analyzer include compactness, feasibility of operation by nonlaboratory personnel, use of heparinized whole blood, small amount of sample required, performance of simultaneous assays of different parameters, short time required to obtain the results and no necessity of storage and transport of the samples.

The main aim of this study was to obtain reference values for biochemistry for healthy hunting falcons using a commercial biochemical in-house analyzer.

Materials and Methods

Seventeen healthy adult female pure Gyrfalcons and 27 gyr-hybrids were used in this study. Blood samples were obtained and analyzed at the Al Wasl Veterinary Clinic (Dubai, UAE) as part of routine health checks performed between September 2004 and March 2005.

Health checks included physical examination, endoscopic examination of the caudal thoracic airsacs, haematology, biochemistry, radiography and parasitological examination. Blood samples (1.5 to 2 ml) were collected from the cutaneous ulnar vein while birds were under anaesthesia and 1 ml was placed in commercial lithium-heparin collection tubes for biochemical analysis. Anaesthesia was induced using a face mask and open circuit with 5% isoflurane (Forane; Abbott Ltd) and 1/min oxygen and maintained with 3% isoflurane.

Biochemical analysis was performed using the avian-reptilian rotor on the VetScan® Classic Analyzer (Abaxis®) with 100 µl of heparinized blood according to the manufacture's specifications within one hour of sample collection. The avian-reptilian rotor provides results for aspartate aminotransferase (AST), creatinine kinase (CK), glucose (GLU), total protein (TP), albumin (ALB), globuline (GLOB), uric acid (UA), blood urea nitrogen (BUN), phosphorous (PHOS), calcium (CA), potassium (K) and sodium (NA).

The statistical analysis was performed using the commercial package SPSS 12.0 (SPSS Inc,). Kolmogorov-Smornov and Shapiro-Wilk test were used to evaluate the distribution of the data. Significance testing was set at 0.05. Parametric test were used to evaluate parameters following a Gaussian distribution, and Mann-Whitney in the rest.

Results

Normal distribution was followed by GLU, TP, ALB, GLOB, UA, CA and NA. AST, CK, BUN, PHOS and K did not follow a normal distribution. No significant difference ($p<0.05$) was found between Gyrfalcons and their hybrids for AST, CK, GLU, TP, ALB, GLOB, UA, BUN, PHOS, CA, K. Significant difference was found for NA. Mean, median, standard deviation, minimum and maximum, 2.5% and 75.5% percentiles and 95% confidence intervals are summarized in Table 1. Reference values given by Lierz (2003) and Samour (2000) are compared with those obtained in Table 2.

Table 1: Plasma biochemistries for pure Gyrfalcons and gyr-hybrids.

	N	Mean	Median	SD	Mín	Max	Percentiles %		* 95% CI	
							P2.5	P97.5		
AST (U/l)	44	80.9	69.0	49.3	41.0	331.0	41.0	313.8		
CK (U/l)	44	576.7	469.0	417.3	287.0	3017.0	291.4	2775.5		
GLU (mg/dl)	44	318.8	317.0	16.6	289.0	360.0	289.4	358.8	313.8	323.9
TP (g/dl)	44	2.9	2.8	0.3	2.4	3.5	2.4	3.5	2.8	2.9
ALB (g/dl)	44	2.2	2.2	0.2	1.7	2.7	1.7	2.7	2.1	2.3
GLOB (g/dl)	44	0.6	0.6	0.3	0.1	1.5	0.1	1.5	0.5	0.7
UA (mg/dl)	44	6.0	5.4	2.8	1.6	12.3	1.6	12.3	5.1	6.8
BUN (mg/dl)	44	4.1	4.0	1.8	1.0	11.0	1.1	10.6		
PHOS (mg/dl)	44	3.1	3.4	1.0	0.4	5.0	0.5	5.0		
CA (mg/d/l)	43	8.6	8.6	0.3	8.1	9.3	8.1	9.3	8.5	8.7
K (mmol/l)	44	4.3	4.1	0.7	3.0	6.2	3.0	6.2		
NA Gyr (mmol/l)	17	148.8	149.0	3.2	143.0	154.0	138.0	155.0	144.3	147.7
NA Gyr-Hybrid (mmol/l)	27	146.0	145.0	4.2	138.0	155.0	143.0	154.0	147.2	150.5

*95% CI reported when parameter followed normal distribution

Table 2: Plasma chemistry reference values for Gyrfalcons and gyr-hybrids compared with those provided by Lierz (2003) and Samour (2000).

Variable (SI)			Lierz (2003)		Samour (2000)
	Mean (SD)	P2.5-P97.5	Mean (SD)	P2.5-P97.5	Mean
AST (U/l)	80.9 (49.3)	41.0-313.8	149 (110)	44-471	97
UA (µmol/l)	356.9 (166.5)	95.2-731.6	370 (170)	80-690	828.5
Urea (mmol/l)	1.5 (0.6)	0.4-3.7	3.6 (2.2)	0-9.5	3.3
GLU (mmol/l)	17.7 (0.9)	16.1-19.9	20.4 (1.7)	17.4-23.9	17.7
TP (g/l)	29 (3)	24-35	25 (8.7)	4.5-46.2	28.9
ALB (g/l)	22 (2)	17-27	11.8 (1.7)	6.6-16.8	7.3
NA (mmol/l)	148.8 (3.2)	138.0-155.0	154 (12)	125-178	160
K (mmol/l)	4.3 (0.7)	3.0-6.2	3.1 (0.9)	1.9-4.9	1.99
CA (mmol/l)	2.1 (0.1)	2.0-2.3	2.3 (0.27)	1.98-3.48	2.4
PHOS (mmol/l)	3.1 (1.0)	0.5-5.0	1.52 (0.4)	0.45-2.89	1.2

Discussion

Female Gyrfalcons and their hybrids are popular birds of prey used for falconry in the Middle East, and the demand for state of the art health care for these animals has increased over the last years. Biochemistry panels have been incorporated to basic investigations by veterinarians, and although some references have been published (Lierz 2003), there are not reported reference values in these species for the VetScan® analyzer. As biochemistry is only useful after a careful history and complete physical examination and should be evaluated in conjunction with complete haematology (Halliwell 1981), the birds included in our study went through a complete health check.

All animals included in this study were clinically normal adult females. Because it has been established that reference values may be affected by several factors (Lumeij and Remple 1991, Samour and D'Aloia 1996, Lierz *et al* 1998), conditions at the time of sampling were standardized as much as possible to avoid differences. Statistical significant difference ($p<0.05$) between pure breed and hybrids was only found in sodium concentrations, therefore reference values for the rest of parameters were calculated as a sole group.

The method used by the VetScan® (bromocresol green dye) for the calculation of albumin concentrations has been found not to be reliable in birds; the serum protein electrophoresis is the recommended method (Lumeij *et al* 1990). Even though the values obtained by this method do not allow a detailed interpretation, personal observations by the authors indicate that the increase in globulin levels (calculated from total protein and albumin concentrations) in absence of other abnormalities can suggest the presence of an underlying pathology in several cases and further investigations are recommended.

To the authors knowledge this is the first report of reference values using the commercial in-house analyzer VetScan® in Gyrfalcons and their hybrids. Although birds sampled under different conditions may have different results, the values obtained in our study can be use as base line for further investigations that represents better the whole population.

Acknowledgements

The authors would like to thank His Highness Sheikh Mohammed bin Rashid al Maktoum for his continued support of the Al Wasl Veterinary Clinic (AWVC). They wish to thank the staff of the AWVC for their technical support. They are thankful to Dr Bailey and Mr O'Donovan for their observations and Ms Castellano for her help with the statistics.

This article has been adapted from: Use of the VetScan® Classic in falcons by Bárbara Arca-Ruibal and Peter McKinney (2006) Proceedings of the Association of Avian Veterinarians Australian, Wellington, New Zealand, 4-6 of September 2006.

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Letters

INFORMATION REQUEST

Dear Sir,

I am looking for high resolution photos of owls native to the Middle East for a poster we are in the process of designing. I have photos of the Eagle Owl *Bubo desertorum* and the Barn Owl *Tyto alba*. However, I need shots of Spotted Eagle Owl *Bubo africanus*, Little Owl *Athene noctua,* Hume's Owl *Strix butleri*, Striated Scops Owl *Otus brucei* and African Scops Owl *Otus senegalensis*.

These can be e-mailed to declan@shp.ae. All photos will be credited accordingly.

Declan O'Donovan
Director of Wildlife Services
Wadi Al Safa Wildlife Centre
PO Box 27875
Dubai, UAE

What's New in the Literature

Chronic ocular lesions in Tawny Owls *(Strix aluco)* injured by road traffic.

Williams, D.L., Gonzalez Villavincencio, C.M. & Wilson, S.. *The Veterinary Record.* 2006: 159; 148-153.

The chronic ocular lesions suffered by 50 tawny owls (*Strix aluco*) injured by road traffic were investigated. They included non-healing corneal erosions, cataracts and retinal scarring, and periretinal membrane formation. The intraocular pressure was significantly lower in the eyes with intraocular inflammatory pathology and higher in the eyes with irido- or cyclodialysis than in ophthalmically normal eyes. Cicatritial retinal lesions were not associated with high titres of antibodies to *Toxoplasma* species. The findings correlate with those observed in human beings with eye injuries due to high-speed blunt trauma.

Tracking Vultures from the Caucasus into Iran.

McGrady, M. & Gavashelishvili, A. *Podoces*. 2006: 1 (1/2): 21–26.

The work was undertaken as part of a broad response to the large-scale poisoning of *Gyps* vultures in south Asia. It shows that birds from the Caucasus travel to Iran, and that Iran may be important in conservation efforts. We fitted four Eurasian Griffon Vultures, *Gyps fulvus* with satellite-received transmitters (PTTs) in Georgia and Armenia in 2004 and 2005. Three birds left the areas where they were fitted with tags in autumn and headed south into the mountainous areas of Iran. One vulture was found dead in an area of paddyfields near the Caspian Sea. One vulture travelled to central Saudi Arabia in winter, and then returned to the colony where it had been fitted with the transmitter. A Cinereous Vulture, *Aegypius monachus* that we tracked also wintered in central Saudi Arabia and moved through Iran from and to a summertime range in the Caucasus region.

Susceptibility of fungi isolated from the respiratory tract of falcons to amphotericin B, itraconazole and voriconazole.

Silvanose, C.D., Bailey, T.A. & Di Somma, A. *Veterinary Record.* 2006: 159: 282-284.

The minimum inhibitory concentrations (MICs) of fungi isolated from the air sacs of falcons before (group 1), and during antifungal treatment with amphotericin B nebulisation and oral itraconazole or voriconazole (group 2), or with itraconazole alone (group 3) or voriconazole alone (group 4) were determined. Before treatment, 95 per cent of the isolates, including *Aspergillus fumigatus*, *Aspergillus flavus*, *Aspergillus niger* and *Aspergillus terreus*, were susceptible to voriconazole at MICs up to 0·38 µg/ml, and all the isolates were susceptible at MICs up to 1µg/ml. Before treatment, 21 per cent of the isolates, including *A fumigatus* (27·6 per cent), *A flavus* (16·6 per cent), *A niger* (100 per cent) and *A terreus* (23 per cent), were resistant (MIC1 µg/ml) to itraconazole; 51 per cent of the isolates, including *A fumigatus* (31 per cent), *A flavus* (78 per cent), *A niger* (14 per cent) and *A terreus* (77 per cent), had MICs of over 1 µg/ml to amphotericin B, and after treatment their MICs increased significantly. In contrast, there were no significant differences between the MICs of voriconazole and itraconazole for the different *Aspergillus* species before and during treatment with these antifungal agents.

Some studies on parasites affecting Egyptian kite

Ibrahim MF. *J Egypt Soc Parasitol.* 2006: 36 (2): 481-6.

A total of 20 Egyptian kites (*Milvus Migrans Aegypticus*) were examined. Sixteen (80%) had Mallophagous lice; Craspedorhynchus spathulatus and 2 of which had in addition Colpocephalum heterosoma (10%). The blood protozoa were (7/20, 35%), Plasmodium sp. (2/20, 10%) and Haemoproteus sp. (5/20, 25%). The enteric protozoa were (4/20, 20%), Isospra aegyptia (3/20, 15%) and Eimeria maxima (1/20, 5%).

Serratospiculosis in a New Zealand Falcon (*Falco novaeseelandiae*).

Green C.H., Gartrell, B.D., Charleston, W.A. NZ Vet J. 2006: 54(4):198-201

An adult New Zealand falcon was presented with metacarpal fractures in the left wing. CLINICAL FINDINGS: In addition to the fractures, radiographs revealed an area of opacity in the air sacs. A few days after hospitalisation and initiation of treatment of the fractures, the bird developed signs of respiratory disease; the area of opacity was found to have increased in size and density. Treatment with antibiotics and nebulisation was commenced; the bird initially responded but respiratory signs subsequently worsened and the bird died. At necropsy, air sacculitis and bronchopneumonia were associated with numerous nematodes in the air sacs, which were morphologically consistent with Serratospiculum guttatum. DIAGNOSIS: Serratospiculosis CLINICAL RELEVANCE: The discovery of this parasite and the associated disease for the first time in New Zealand indicates that it should be considered in the differential diagnosis of respiratory disease in falcons and possibly other raptors in New Zealand

Natural and experimental West Nile virus infection in five raptor species..

Nemeth N, Gould D, Bowen R, & Komar N. *Journal of Wildlife Diseases.* 42. 2006. 1-13.

We studied the effects of natural and/or experimental infections of West Nile virus (WNV) in five raptor species from July 2002 to March 2004, including American kestrels (*Falco sparverius*), golden eagles (*Aquila chrysaetos*), red-tailed hawks (*Buteo jamaicensis*), barn owls (*Tyto alba*), and great horned owls (*Bubo virginianus*). Birds were infected per mosquito bite, per os, or percutaneously by needle. Many experimentally infected birds developed mosquito-infectious levels of viremia (>10(5) WNV plaque forming units per ml serum) within 5 days post-inoculation (DPI), and/ or shed virus per os or per cloaca. Infection of organs 15-27 days post-inoculation was infrequently detected by virus isolation from spleen, kidney, skin, heart, brain, and eye in convalescent birds. Histopathologic findings varied among species and by method of infection. The most common histopathologic lesions were subacute myocarditis and encephalitis. Several birds had a more acute, severe disease condition represented by arteritis and associated with tissue degeneration and necrosis. This study demonstrates that raptor species vary in their response to WNV infection and that several modes of exposure (e.g., oral) may result in infection. Wildlife managers should recognize that, although many WNV infections are sublethal to raptors, subacute lesions could potentially reduce viability of populations. We recommend that raptor handlers consider raptors as a potential source of WNV contamination due to oral and cloacal shedding.

Serratospiculosis in falcons from Kuwait: incidence, pathogenicity and treatment with melarsomine and ivermectin.

Tarello W. *Parasite. 13.* 2006. 59-63.

The aims of this study were to determine the incidence of the filarial avian nematode *Serratospiculum seurati* in falcons from Kuwait, report clinical signs and find an effective therapy. Naturally occurring *S. seurati* infestation was diagnosed in 149 (8.7%) out of 1,706 captive falcons examined between May 2003 and April 2005, and 140 of these were treated with melarsomine at dosage of 0.25 mg/kg injected intramuscularly for two days, and ivermectin, injected once at the dose of 1 mg/kg, 10 days later. Infestation was reportedly symptomatic in 107 (71.8%) and non-symptomatic in 42 (28.2%) falcons. Signs reported more often were dyspnoea (58.8%), reduced speed and strength in flight (56%), weight loss (38.3%), anorexia/poor appetite (22.4%) and lethargy (16.8%). After administration of melarsomine, signs disappeared within 1-10 days in symptomatic birds and improvement of flight performances was noted in non-symptomatic birds. Dead adult parasites were ejected in 22 cases. Embryonated eggs were not detected in coproscopic checks made 10 and 40 days after the end of therapy, in association with lasting clinical remission. The main conclusion is that *Serratospiculum seurati* is overall pathogenic for birds of prey in the Middle East and that melarsomine + ivermectin can be an effective protocol of therapy eliminating both clinical signs and parasites.

Do migratory flight paths of raptors follow constant geographical or geomagnetic courses?

Thorup K, Fuller M, Alerstam T, Hake M, Kjellen N & Strandberg R. *Animal Behaviour* 72: 2006. 875-880.

We tested whether routes of raptors migrating over areas with homogeneous topography follow constant geomagnetic courses more or less closely than constant geographical courses. We analysed the routes taken over land of 45 individual raptors tracked by satellite-based radiotelemetry: 25 Peregrine Falcons, *Falco peregrinus*, on autumn migration between North and South America, and seven Honey Buzzards, *Pernis apivorus*, and 13 Ospreys, *Pandion haliaetus*, on autumn migration between Europe and Africa. Overall, migration directions showed a better agreement with constant geographical than constant geomagnetic courses. Tracks deviated significantly from constant geomagnetic courses, but were not significantly different from geographical courses. After we removed movements directed far from the mean direction, which may not be migratory movements, migration directions still showed a better agreement with constant geographical than constant geomagnetic courses, but the directions of honey buzzards and ospreys were not significantly different from constant geomagnetic courses either. That migration routes of raptors followed by satellite telemetry are in closer accordance with constant geographical compass courses than with constant geomagnetic compass courses may indicate that geographical (e.g. based on celestial cues) rather than magnetic compass mechanisms are of dominating importance for the birds' long-distance orientation.

Wild-reared Aplomado Falcons survive and recruit at higher rates than hacked falcons in a common environment

Brown JL, Collopy MW, Gott EJ, Juergens PW, Montoya AB & Hunt WG. *Biological Conservation* 131 (3). 2006. 453-458.

The northern Aplomado Falcon (*Falco femoralis septentrionalis*) has been the subject of a large-scale reintroduction effort conducted by The Peregrine Fund since 1993. Intensive monitoring during 2002-2004 revealed approximately 38 breeding pairs and numerous non-territorial individuals in two study areas centered on Matagorda island National Wildlife Refuge (NWR) and Laguna Atascosa NWR. Continued releases ("hacking") of captive-bred young after pair

establishment and successful wild breeding provided an opportunity to compare survival and recruitment histories of wild-reared and hacked falcons hatched during 2001-2003. We used Program MARK to rank multi-state models of apparent survival and recruitment rates with Akaike's Information Criterion scores, corrected for small samples. The top model candidate, with almost 3.5 times more support than the next best model, detected differences due to falcon origin (wild or captivity): although breeder survival was independent of origin, juvenile hacked falcons survived and recruited at lower rates than wild-reared falcons. Given the high density of territorial adult falcons in the study areas, the difference in apparent survival may reflect greater dispersal by hacked falcons, increased tolerance of wild falcons in territory margins due to prior socialization, or other factors effecting higher intrinsic fitness of wild falcons. However, natal dispersal did not differ between the two groups, strengthening the hypothesis of a difference in true survival. Disproportionately greater recruitment of wild falcons into the breeding population again suggests their higher intrinsic fitness. These findings show how close monitoring of population vital rates can efficiently guide adaptive management of recovering populations.

News and Announcements

Students infected with Salmonellosis from owl pellets

A 5th-grade science experiment made 50 students sick in Jun 2006, the Massachusetts Department of public Health said yesterday, 6 Jul 2006. The students were asked to dissect owl pellets, at Jefferson Elementary School. According to DPH spokeswoman Donna Rheaume, 28 were infected with salmonella bacteria, while another 22 reported experiencing nausea, diarrhea, or stomach pains following the experiment.

Because of the outbreak, the state plans to update its guidelines for handling the pellets for the upcoming 2006-7 school year. The new DPH guidelines will instruct teachers and students to wear protective gloves and to wash their hands and work areas following the experiments. The DPH launched its investigation 16 Jun 2006, when several Jefferson 5th-graders were diagnosed with the bacterial infection. Since then, the number of confirmed cases jumped from 6 to 11 to 23, and now, to 28. The number of cases was expected to rise as the children's physicians reported the infections to the state.

The owl pellets were said to be the cause of the outbreak yesterday, 6 Jul 2006, after samples were collected and analyzed at a state laboratory in Boston. Cafeteria food was quickly ruled out as the culprit because the outbreak was mostly contained within the 5th grade. A similar 2005 salmonella outbreak in Minnesota was linked to owl pellets when 40 students fell ill after dissecting them on a cafeteria table, according to the Minnesota DPH's Acute Disease Investigation and Control Section.

A ProMED-mail post <http://www.promedmail.org>

Vulture die-off in Africa and Asia

The "most significant conservation disaster ever" may be about to repeat itself around the world, according to research by the Royal Society for the Protection of Birds. Conservationists, already dismayed by the death of millions of vultures in India, Nepal and Pakistan, caused by the birds consuming a cattle drug, have found other bird species are also susceptible. The anti-inflammatory drug diclofenac is toxic to 3 species of Asian vulture, the Oriental White-backed, Long-billed and Slender-billed. They die from kidney failure if they eat the carcasses of cattle treated with it.

Conservationists estimate that 10-14 million birds have died; populations are still declining at 30 to 50 percent a year. "It's probably the most significant conservation disaster ever in terms of the number of birds lost," said Jemima Parry-Jones at the US National Aviary in Pittsburgh. Dr Parry-Jones and the RSPB research team set out to discover whether diclofenac and related drugs are toxic to other birds. They asked zoo vets around the world for reports of unintentional bird deaths after treatment with the drugs. Of the 79 scavenging birds they received information on, the drugs were deadly for 30 percent, including the African white-backed vulture, saw-whet owl from North America, harris hawk, spoonbill, Eurasian gryphon vulture and African maribu stork. The researchers reported their results in the journal Biology Letters.

The manufacture and import of diclofenac was banned in India in August [2006], although it is not illegal to sell off stockpiles. It is banned in the US and Europe, but is still used in parts of Africa and South America.

A ProMED-mail post <http://www.promedmail.org>

Recommendations made by the CITES Committees in relation to the review of significant trade of Saker Falcons (August 2005)

The following countries are identified as being of 'urgent concern', Iran, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russian Federation, Saudi Arabia, Turkmenistan and Uzbekistan. It was recommended that within two weeks (by September 2005) these countries immediately suspend the issuance of export permits for *Falco cherrug* and inform the Secretariat about this measure. Then, within three months (by November 2005) a) Provide justification for and details of the scientific basis by which, it has been established that the quantities of *F. cherrug* exported were not detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3; b) Provide information on the distribution and conservation status of *F. cherrug*, explaining when the status was established and by what methodology the information was obtained; and c) Provide information

on the number of captive breeding operations for *F. cherrug* in the country and the controls in place to differentiate between captive-bred and wild-caught specimens to ensure that the authorized exports of specimens of wild origin are not augmented by falsely declared 'captive bred' specimens.

Within twenty-four months (by September 2007) for range States wishing to resume the exportation of *F. cherrug*, it was recommended that they a) Conduct a survey of the status of *F. cherrug* in the country, including an assessment of distribution and abundance, population trends, threats to populations and other relevant factors to provide the basis for the making of non-detriment findings as required under the provisions of Article IV, paragraphs 2 (a); and b) Develop a science-based population monitoring system, and establish adaptive management programmes for harvesting of and trade in *F. cherrug*, taking into consideration the results of the survey referred to in the previous paragraph.

For the following countries, Afghanistan, Armenia, Austria, Azerbaijan, Bahrain, Bulgaria, China, Cyprus, Egypt, Georgia, India, Iraq, Jordan, Kenya, Kuwait, Mauritania, Moldova, Nepal, Oman, Romania, Serbia and Montenegro, Sudan, Tajikistan, Turkey, Ukraine and Yemen it was recommended that
within 3 months (by November 2005) they provide detailed information to the Secretariat on the following: a) confirmation that no exports of *Falco cherrug* are permitted, or, if this is not the case; b) provide justification for and details of the scientific basis by which, it has been established that the quantities of *F. cherrug* exported were not detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3; c) Provide information on the distribution and conservation status of *F. cherrug*, explaining when the status was established and by what methodology the information was obtained; and d Provide information on the number of captive breeding operations for *F. cherrug* in the country and he controls in place to differentiate between captive-bred and wild-caught specimens to ensure that he authorized exports of specimens of wild origin are not augmented by falsely declared 'captive red' specimens.

From Report of 54th meeting of CITES Standing Committee (Geneva 2-6 October 2006)

Trade in Saker Falcons. CITES review of significant trade.

In a Notification to Parties, Geneva, 14 November 2006 the CITES Secretariat stated that "until further notice the Islamic Republic of Iran, Kazakhstan, Kyrhystan, Mongolia, Pakistan, the Russian Federation, Saudi Arabia, Turkmenistan and Uzbekistan have suspended the issuance of export permits for *Falco cherrug*". Parties are requested to inform the Secretariat if an export permit for specimens of *Falco cherrug* from one of these countries is presented to them.

From CITES notification No. 2006/061

The South-east Europe Saker Network

In February 2006 the South-East Europe Saker Network was established at a meeting in Sofia, Bulgaria. It is administered from the Central Laboratory of General Ecology, Bulgarian Academy of Sciences by Dimitar Ragyov. The Network was established via IWC (UK) Ltd using contract funding from the Environment Agency of Abu Dhabi (EAD). A web forum has been established for Saker researchers (to learn more about the Falco_cherrug group, please visit the following web address: http://groups.yahoo.com/group/Falco_cherrug; to start sending messages to members of this group, simply send an email to the following address: Falco_cherrug@yahoogroups.com).

The Network aims to encourage survey and research work on Sakers in the poorly covered regions of South-East Europe. As part of this process the Network will provide funding and/or equipment for surveys in Bulgaria, Croatia, Macedonia, Moldova, Serbia, Romania, Turkey and Ukraine in 2007. The objective is to develop research groups in these countries in order to better understand the status of and factors influencing the Saker population in the region.

Welcome to the Festival Of Falconry

Saturday 14th July to Sunday 15th July 2007

This is the first international Festival of Falconry ever held ! It is by Falconers, for Falconers and about Falconry. Everyone is invited, regardless of your nation, creed, gender, club, commercial status or anything else. If you are a Falconer, this Festival is for *YOU*.

It is being hosted in the United Kingdom by the Hawk Board – the umbrella body for UK falconers. It is being organised very much in conjunction with the International Association of Falconry for all nations, and it is strongly supported by the Emirates Falconry Club which is kindly sponsoring attendance by many of the poorer nations.

It is about celebrating our heritage of more than 3000 years of falconry. It is about supporting our many and varied cultures of falconry in different countries. And it is about bonding the brotherhood of Falconers together for the future of Falconry. This is truly a 'hands across the ocean' event.

July in the UK is high summer. Breeding is finished and the young hawks are starting to fly. Schools are closing for the summer. The old hawks are finishing their moult. Falconers all over the Northern Hemisphere are getting ready for the hawking season. Hawks are being taken on hand for training. Hopes are high for the new season. Take a weekend out to spend time making new friends from all over the world. Who knows where it may lead you ?

The Festival of Falconry will not be a 'stand and stare' event. This is about full participation and interaction. If you plan on coming, then plan on taking part. There are plenty of things to enjoy, to learn, to try out and moreover to celebrate. Come and support your country or club, and tell us about it. Tell us about your history and how you do things in your country. Bring your hawk if you can (there are rules about this, so check ebsite for details). Bring your family and friends... and a big smile! See http://www.falconryfestival.com

Leucistic Saker Falcon trapped in Mongolia

In the late summer/early autumn of 2006 a team of falcon trappers caught a magnificent white falcon in western Mongolia. The plumage of the bird was pure white, the skin of the legs, toes, eyes and cere were yellow, whilst the culmen of the beak and the claws had a pinkish hue.

White Saker Falcon from western Mongolia

At *Falco* we have never heard of a pure white Saker Falcon before, so this particular individual bird is unique. The trappers were not certain as to the species or origin of this remarkable bird, but it is undoubtedly a Saker Falcon, based on its size (reported as 17.5" chest and wings), its structure and the location where it was caught. The type of plumage aberration exhibited in this bird is known as leucism. In this leucistic Saker the pigment cells responsible for plumage colouration have either failed to develop or are incapable of making pigments.

The age of the bird is uncertain, though the trappers believed that it was at least two-years old. Juvenile Saker Falcons would normally have blue feet and a blue cere in late summer/early autumn of their first calendar year, but in the case of this bird the pigmentation that results in the typical blue colouration may be absent. It may be supposed that a pure white Saker Falcon would have some difficulty in surviving for a long period in the wild because without pigmentation its feathers are likely to be structurally weak and susceptible to breakage.

Close-up of Saker Falcon trapped in Mongolia

In contrast to a typical albino bird, this leucistic Saker Falcon has normal eye colour. The cells that are responsible for eye colour are derived from a different origin in the development process, thus they can produce melanin giving a normal eye and are unaffected by the genetic cause of the leucism in plumage and body colour.

According to postings on the Falcon Forum website this bird was bought by a Kuwaiti Sheikh for $330,000 and was expected to gift the bird to the King of Kuwait. However, the latest news is that the bird was taken to Morocco on a hunting expedition and flew well, catching a number of Houbara before it was eventually lost.

The magnificent leucistic Saker Falcon in Morocco

Information and photographs obtained from www.falconryforum.co.uk.

علاج الصقور بالنقل المستمر للسوائل

كريستوفر لويد
مستشفى ند الشبا البيطري، ص. ب. 116345، دبي، الإمارات العربية المتحدة

الموجز
يقل استخدام علاج الطيور بالنقل المستمر للسوائل بسبب الجوانب العملية لإبقاء القسطر في موضعه داخليا. وينفر الممارسون من استخدام قساطر داخل العظم في الصقور الصيّادة بسبب احتمال إيذاء غضاريف الأسطح المفصلية. ويكثر استخدام الإدخال المتكرر للأقراص داخل الأوردة في حالات الطيور المنهكة أو المصابة بالصدمة، لكن مساوئ ذلك تتضمن الاضطرار للمناولة المتكررة، وإحداث ثقوب موضعية، واحتمال الإفراط في تحميل الدورة الدموية. تصف هذه المقالة وسيلة لوضع، والإبقاء على، النقل المستمر داخل الأوردة في الصقور. وقد استخدمت هذه الوسيلة بشكل واسع في مستشفانا في كل من العلاج بالسوائل وإعطاء الأدوية ولقيت تحملا جيدا من الطيور المريضة المغمّاة لمدة 2-3 أيام.

اكتشافات شائعة من من التنظير الداخلي والفحص الخليوي لأمراض قناة التنفس للصقور في الشرق الأوسط

وولف أفنر [1، 2]، توم بيلي [2]، كيستوداس سيلفانوز [2]، أنطونيو دي سومّا [2]
[1] Tierarztpraxis am Hornerwald, A-3572 St. Leonhard, Obertautendorferamt 10, Austria، النمسا
[2] مستشفى دبي للصقور، ص.ب. 23919، دبي الإمارات العربية المتحدة

الموجز
إن الفحص بالتنظير الداخلي والخليوي للأنسجة المستأصلة التي حصل عليها أثناء التنظير الداخلي هي ثنائية تشخيصية هامة في طب الطيور. تظهر مقالتنا صورا (من التنظير الداخلي والفحص الخليوي) لأمراض الصقور التي يشيع اكتشافها في الشرق الأوسط.

نظرة عامة على الحفاظ على الجوارح في إيران
علي برهاني كيا

قسم الحيوانات الغريبة، طب الحياة البرية والحيوانية، كلية الطب البيطري، جامعة طهران، ص.ب. 43746-13167، طهران، إيران.

الموجز
هناك 492 صنفا من الطيورفي إيران ، ينتمي 46 صنفا منها إلى فصيلتي *Falconiformes* و*Strigiformes* . ويعتبر فقد الموئل، والتلوث، وقلة الوعي العام، والاتجار المحظور أهم المخاطر التي تتعرض لها الحياة البرية الإيرانية. في كل عام، يتم أسر الجوارح بالشراك، أو سرقتها من الأعشاش، أو إطلاق النار عليها، ويعتبر أسر الجوارح والاتجار الغير قانوني بها من أهم قضايا المحافظة في إيران. أما وجهة هذه الجوارح هي الإيرانيون المهتمون بالجوارح، والصقارون العرب، أو جامعو الطيور في الشرق الأوسط. وتضم الطيور التي تصدر بشكل غير قانوني، صقر الغزال (الشروقي) وصقور الشاهين، وبشكل خاص فإن صقر الغزال هو من الأصناف المقيمة والعابرة في إيران. ويمثّل أسر وتصدير الصقور الكبيرة تحديا رئيسيا لدائرة البيئة. في كل عام وفي أواخر الصيف يتم أسر عدد كبير من الصقور الصيّادة في موائلها الشتوية أو في طرق عبور هجرتها ثم تنقل إلى الحدود الجنوبية لإيران للتصدير إلى الدول العربية. وفي رأي الكاتب، فإن رفع درجة الوعي لدى العامة، وزيادة القيود الحدودية، وزيادة عدد المسئولين عن تطبيق القوانين هي من الأمور الهامة للتقليل من المخالفات. إضافة لذلك فإنه من المهم إجراء البحوث في التوزيع السكاني للطيور، وطرق هجرتها، ومواقع تكاثرها. إن على الحكومة الإيرانية أن تكون أكثر اهتماما بأمور الحفاظ على الحياة البرية، وأن تطور أطر التعاون مع منظمات الحفاظ الإقليمية والدولية.

مصادرة الصقور في ميناء خالد بالشارقة

آن باس و بول فيركامن
مركز الإكثار للحياة البرية العربية المهددة، ص.ب. 29922، الشارقة، الإمارات العربية المتحدة

الموجز
طلب من أعضاء مركز الإكثار للحياة البرية العربية المهددة استلام شحنة صقور صودرت في ميناء خالد بالشارقة في 31 أكتوبر. وكانت الصقور قد صودرت من قبل خفر السواحل من زورق صيد في طريقه من إيران إلى قطر. وكانت الطيور مخبأة تحت شحنة من الأسماك، وكانت جميعها ملفوفة بالقماش وموضوعة في كوى في صناديق بالغة الصغر تحت الأسماك. وكانت كل عيون الصقور مغلقة بخياطتها بخيط قطني. لم تكن أي من الطيور تحمل أي علامات مميزة، ولا حلقات الساق، ولا رقائق التعريف الإلكترونية. كما لم تكن هناك أي تراخيص تصدير أو شهادات طبية لتلك الطيور. وقد تم تقديم الرعاية للطيور في مركز الإكثار للحياة البرية العربية المهددة، وبعد أسبوعين تقرر أن بالإمكان نقل الطيور إلى المركز الوطني لأبحاث الطيور في أبو ظبي.

تقرير عن نشاط مجموعة طيور الجوارح الصغيرة والبوم والتي عقدت في ورشة عمل حيوانات المنطقة العربية، بحديقة الشارقة للحياة البرية الصحراوية، 2006.

مايكل سي جينجز [1] و تانيا آ سادلر [2]
[1] بيت وورنر الريفي، Somersham, Cambridgeshire, PE28 3WD، المملكة المتحدة
[2] مركز الإكثار للحياة البرية العربية المهددة، ص.ب. 29922، الشارقة، الإمارات العربية المتحدة

الموجز
أسست هذه المجموعة لتقوم بالبحث، صنفا بصنف، في طيور الجوارح والبوم التي لم تنظر فيها مجموعة عمل الجوارح الكبيرة في 2005، وبالأخص الطيور الصيادة من فصائل الحدأ، والزرق، والبواشق، والعقبان والصقور *Elanus, Milvus, Melierax, Micronisus, Accipiter, Buteo* (باستثناء عقاب *B. 'socotrae'* المستوطن في سقطرة)، وعقبان وصقور *Pandion and Falco* (باستثناء الصقور الصيّادة) والبوم (باستثناء بوم *O. socotranus* المستوطن في سقطرة). ولعل أهم نتيجة للنقاشات كان التحقق من أنه يبدو أن هناك خطأ أساسي في المعلومات المنشورة عن تعداد صقر الغروب (الأسخم) Sooty Falcon. وكان تعداد هذه الفصيلة عبر العالم وفقا لنشرة IUCN (BirdLife International 2004. Falco concolor. In: IUCN 2004. 2004 ICUN Red List of Threatened Species; www.redlist.org بـ 100,000 طيرا، كما قدّر بحسب el Hoyo et al (1994) Handbook of the Birds of the World بـ 40,000 طيرا. ولكن البحث الدقيق في كل معلومات الإحصاء، وهي بشكل مدهش شاملة للغاية لهذه الفصيلة، إن تعدادها في المنطقة العربية قد يكون أقل من 500 زوج متكاثر. وإضافة إلى وضع صقر الغروب، فقد ارتأت المجموعة أن أكثر الأمور أهمية فيما يتعلق بالحفاظ على الطيور الجوارح والبوم في المنطقة العربية هي ما يلي 1) إن هناك حاجة لوعي أكثر لدى الجمهور حول المخاطر والقضايا التي تواجه هذه الفصائل وكيفية التغلب عليها، وأيضا 2) أن هناك حاجة ماسة لأبحاث في هذه الفصائل، بما في ذلك مواطنها، وأعدادها، وتواريخ حيواتها وذلك للوصول إلى وضعها الحفاظ عليها، وتحديد اتجاهات تعدادها.

استخدام FixEx Tubulaire ونظام F.E.S.S.A في كسور عظم الساق الأكبر للصقور

مارجيت جابرييل موللر و جنايدين محمد نافذ
مستشفى أبو ظبي للصقور، ص.ب. 45553، أبو ظبي، الإمارات العربية المتحدة

الموجز
كسور عظمة الساق الأكبر هي كسور كثيرة الانتشار في الطيور. وفي 5 صقور قدمت إلى مستشفى أبو ظبي للصقور وشخصت بوجود كسور عظمة الساق الأكبر، استخدم نظام التثبيت FixEx tubulaire Type F.E.S.S.A. fixation bar (الشكل 1 و2) للوصول التنام أفضل للكسور ولإتاحة تحمل أفضل للأثقال على السيقان المصابة. وقد أظهرت كل الصقور بعد الجراحة وظائفية كاملة للأرجل التي عولجت. تتضمن مزايا نظام FixEx tubulaire Type F.E.S.S.A. fixation bar سهولة الاستخدام، وخفة الوزن، ومرونة في حجم وثقوب القضيب لإعادة وضعية العظام، وإمكانية الإزالة أو التثبيت الجزئية للمسامير. تظهر نتائج هذا التقرير أن هذا النظام ملائم لعلاج مختلف أنواع الكسور في الصقور والطيور الأخرى، وكذلك في أصناف الحيوان الأخرى كالحيوانات المتميزة أيضا.

الفحص البيطري السابق لشراء الصقور في الإمارات العربية المتحدة

بيتر ماكني
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الموجز
في كل عام، يقدم عدد كبير من الصقور المولودة في الأسر للفحص البيطري السابق للشراء في العديد من المراكز البيطرية في الإمارات العربية المتحدة. ويقوم خبراء البيطرة بفحص الصقور التي تعد للتدريب لرياضة الصيد بالصقور. وفي معظم الأحيان يرغب الصقارون في التأكد من كون الصقر مصابا بداء الرشاشيات *Aspergillosis*. ويندر أن تصل الأسباب الرئيسية لرفض الشراء كالكسور أو التهاب السومار الطرفي bumblefoot إلى مرحلة الفحص البيطري، لأن باستطاعة الصقارين اكتشاف مثل تلك الحالات بأنفسهم دون الحاجة لدعم بيطري. يقوم البيطري بتدوين الحالات البسيطة، ولكنها لا تعتبر ذات أهمية. ولكن معظم الحالات التي ترفض تعود لاكتشاف الإصابة النشطة بداء الرشاشيات Aspergillosis، والذي يشخص بالتنظير في القناة التنفسية. ويشكل الفحص الشامل والفحص لتنظيري قاعدة الفحص البيطري السابق لشراء الصقور في الإمارات العربية المتحدة

تقديرات تعداد تكاثر صقر الغزال Saker . القسم الأول: أوربا

أندرو ديكسون
المستشارون العالميون للحياة البرية (المملكة المتحدة)
International Wildlife Consultants (UK) Ltd., P.O. Box 19, Carmarthen, SA33 5YL. United Kingdom

الموجز
ينحصر تواجد صقر الغزال لمنطقتي وسط وشرق أوربا، بتعداد يتراوح بين 579 و 812 زوجا متكاثرا وفق التقديرات من الدول المختلفة. وتوجد المعلومات الكيفية الجيدة عن تلك الصقور فقط في 4 فقط من الدول الـ 17 التي يتواجد بها، أما الدول الأخرى فتقيم تقديراتها على دراسات حقلية محدودة. وعليه، فإن تعداد التكاثر قد يكون أقل من الواقع. ويتوقع أن يكون التعداد الأوربي الحقيقي بين 550 و 1000 زوجا. وبرفع منظمة IUCN مرتبة هذا الصقر إلى درجة "وضع الخطر" Endangered فأن الحاجة قد أصبحت ماسة للحصول على تقديرات تعدادية موثوق بها ضمن أوربا لهذه الفصيلة.

Saker Falcon, Hungary.
Istvan Balasz

تعداد العوسق الصغير Lesser Kestrel وتغذيه على القوارض في شمال إيران

أبو القاسم خاليغيزادة و محمد جافيدكار
دائرة البحث الحيواني الزراعي، المعهد الإيراني لحماية النبات، ص.ب. 1454، طهران 19395، إيران

الموجز
نقدر وجود 170 عوسقا صغيرا في أقاليم طهران ومازندران وغوليستان. وقد أظهر تحليلات لـ 230 حبيبة جمعت من موقع مجثم قرب طهران، أن 18.8% تحتوي على بقايا قوارض، معظمها من فصائل العضل Meriones sp وفأر الحقل Apodemus sp . ولكن 200 حبيبة أخرى جمعت من أراض زراعية لم تحتو على أي عظام لحيوانات ثديية وتألف معظمها من بقايا حشرات مما يدل على أن محتوى الغذاء يتفاوت حسب المناطق.

كلمة العدد

تم التصديق على خطة العمل الأوربية لصقر الغزال Saker في الاجتماع السادس والعشرون للجنة القائمة لميثاق المحافظة على الحياة البرية والموائل الطبيعية الأوربيتين (ميثاق بيرن) في مدينة ستراسبورغ في نوفمبر 2006. ويتطلب ميثاق بيرن من الأطراف الموقعة اتخاذ الخطوات الضرورية لتطوير السياسات خاصة في مجال حماية الفصائل ذات وضع الخطر والمهددة. إن حماية هذا الصقر والذي يعتبر مهددا في أنحاء العالم، قد أعطيت أولوية عالية في أوربا. وقد أوجزنا الوضع الأوربي لهذا الصقر في هذا العدد، وكما يظهر فإن تعداده يتراوح بين 550 و1000 زوج متكاثر. وللحكم على نجاح أو فشل أية إجراءات مطبقة للمحافظة مطبقة ضمن خطة العمل العالمية، فإن من الضروري أن تكون تقديرات الدول المختلفة سليمة. في الوقت الراهن، لم تقدم أي دولة تقديرات تعدادية تتمتع بالدقة، وأن معظم الدول ليست لديها معلومات كميّة أو أن المعلومات محدودة. وقد أنشأت شبكة التعاون لصقر الغزال لجنوب وشرق أوربا في عام 2006 بفضل تمويل من وكالة البيئة بأبو ظبي (الإمارات العربية المتحدة) لمحاولة تقويم هذا الوضع (أنظر الأخبار والإعلانات). حددت خطة العمل العالمية ثلاثة مخاطر هي فقد الموئل، التدمير أو الإزالة من البرية، والانتقال التبادلي لإحدى الموروثات الجينية. ويتعلق هذا الأخير بمفهوم خطر التكاثر المشترك للطيور الهاربة، والهجينة في معظمها، مع الطيور البرية. وقد تم إنشاء مجموعة عمل الطيور الهجينة لتقييم المخاطر المتوقعة والقيام بالدراسات لتقدير الوضع بجمع تحليلات جينية من المجموعات البرية. وفي الوقت الراهن لا يمكن التأكد من وجود الجينات الهجينة في التجمعات الأوربية لهذا الصقر، وحتى إن وجدت، فإن لا يمكن تحديد مصدرها. إن الطيور الأسيرة والتي استخدمت في محاولات الإعادة هي إحدى المصادر الممكنة، بالإضافة إلى الطيور الهاربة. إن الجدل حول هذا الأمر يزداد حاليا وهو أمر سنناقشه في أعداد **Falco** القادمة.

نحن ممتنون للمقالة عن العواسق الصغيرة Lesser Kestrels والتي وردتنا من إيران، وهي منطقة ليس بحوزتنا الكثير من المعلومات فيما يتعلق بالطيور فيها. إن هذا الصقر البالغ الصغر تشترك في العيش في نفس سهوب تواجد صقر الغزال Saker عبر مواطن تكاثره عبر العالم، وإن التغيرات الموئلية الكبرى التي تؤثر في العوسق الصغير سيكون لها أثر على صقر الغزال أيضا. وقد برز القلق حول المحافظة على صغار الطيور الجارحة في ورشة عمل المحافظة بالشارقة، حيث اتضح أن تقديرات أعداد صقر الغروب (الأسخم) في الجزيرة العربية كانت مبالغ فيها لدرجة كبيرة. وستقوم وكالة البيئة بأبو ظبي بتمويل دراسة مسحية في عام 2007 لتقدير وضع المحافظة لصقر الغروب في الإمارات.

إضافة إلى وضع صقر الغروب، اعتبرت ورشة عمل المحافظة بالشارقة أن أهم القضايا المتعلقة بالطيور الجارحة والبوم في المنطقة العربية هي الحاجة لمزيد من الوعي العام حول المخاطر والقضايا التي تواجه هذه الفصائل، والحاجة لمزيد من الدراسات البيولوجية لمعظم فصائل الجوارح للتصدي لأوضاعها من حيث المحافظة واتجاهاتها التعدادية. لكن الأمر بدون توفر التمويل لدعم برامج التثقيف والخبراء البيولوجيون، فإن الوضع المستقبلي لهذه الفصائل لن يتحسن. إن هناك حاجة لأن تقوم حكومات المنطقة بتطوير أنظمة منظمة للتمويل لدعم العلماء المحليين الذين يدرسون الطيور الجارحة وغيرها من شؤون الحياة البرية. ويحتاج المهتمون بالمحافظة إلى أن يكونوا أكثر أخذا للمبادرة وأن يبحثوا عن الرعاية من الشركات الإقليمية.
تظهر مقالتين في هذا العدد أن الاتجار غير المشروع بالصقور البرية يمثل مشكلة في المحافظة على الصقور الكبيرة. نشكر علي برهاني كيا لتبيينه هذا الأمر وتأثيره على الجوارح الكبيرة في إيران، كما نشكر آن لس و بول فيركامن من الإمارات الذين وصفا لنا الحالة المروعة لشحنة من الطيور صودرت أثناء نقلها من إيران إلى قطر. إن تطبيق القانون الذي قام به خفر السواحل بالشارقة قد يمثل رادعا لأولئك الذين ينتوون القيام بالتهريب غير المشروع للحياة البرية. ولكن، وفي نهاية الأمر، فإن من الضروري زيادة الوعي والنقاش حول المشاكل الناتجة عن استمرار استخدام الصقور البرية من قبل الصقارون أنفسهم. لقد قامت رياضة الصيد بالصقور في المنطقة العربية بخطوات لتحسين أوضاعها، ولكن الدرب ما زال طويلا. من الواضح أنه بازدياد توفر الصقور التي جرى إكثارها في الأسر، فإن هناك القليل من الأعذار للاستمرار قي استخدام الصقور البرية. إن التحدي الذي يواجه منظمات المحافظة يكمن في أساليب التأثير على الصقارين ذوي النفوذ السياسي الذين يمكنهم بضرب المثل والقدوة، التأثير على المجتمع الأوسع للصيد بالصقور.

أما عن مراجعة الاتجار الشرعي لصقر الغزال Saker والذي أثيرت في اجتماعات CITES منذ عام 2003، فيبدو أنه لم يحدث الكثير من التطور في الاجتماع الرابع والأربعين للجنة القائمة في جنيف (2-6 أكتوبر 2006). كانت لجنت CITES قد أصدرت توصيات (أنظر الأخبار والإعلانات) ولكننا في **Falco**، لسنا عل علم بأي شكل من أشكال تطبيقها. ونظن أن منغوليا والصين هما الدولتين الوحيدتين اللتان تصدران الصقور التي تصاد داخل حدودهما باستخدام تراخيص CITES. ولا زلنا ننتظر لنرى إن كان لدى المنظمة القوة الحقيقية والرغبة في المطالبة بتطبيق التوصيات التي أصدرتها هي.

ونشكر كل خبراء البيطرة الذين قدموا هذا العدد من المقالات العملية والإعلامية المتنوعة بهدف تحسين وضع طيور الصيد. ونشكر الدعم السخي لمستشفيات الصقور من قبل راعين متنورين وملتزمين مما أتاح للشرق الأوسط أن تقود المسيرة في طب الطيور الجارحة.

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