



Memorandum of Understanding
on the Conservation of
Migratory Birds of Prey in
Africa and Eurasia

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Towards 1000 nest-boxes

1. Executive summary

Grids of 100-200 Dixon nest-boxes will be placed in Kazakhstan, extending south into empty steppe from a tree-nesting Saker population at Naursum, and north from cliff-nesting populations in the south. Falcons of appropriate Kazakh stock will be released on each grid. All birds will be ringed and microchipped, and also young from the neighbouring existing populations to assess immigration to grids. A sample of birds will be tagged with GPS-retransmission tags to record movements and fates, and to enhance interest in the project through displays on the CMS-IAF Portal for Enabling Trust, so that trappers can be encouraged to report any captures of marked birds (for possible rewarded release) and so that sponsorship can be sought for more release and tagging of birds. Monitoring for 3 years will be used to compare colonisation onto grids or natural sites from both origins, and with results from grids in Mongolia, thereby gaining information about (a) what factors most strongly affect colonisation of artificial nests; (b) how suitable is habitat for sakers adjacent to traditional nesting areas; (c) movements and survival of Sakers fledged in northern and southern Kazakhstan; (d) how origin nest type affects choice of breeding site in Sakers; (e) which release techniques produce best survival; (f) harvest rates of Saker populations using Arabian Peninsula flyways; (g) whether ordinary falconers will contribute to conserving wild breeding stocks; (h) whether local communities will contribute to conserving Sakers and nesting areas; (i) how access and local engagement can contribute to protecting breeding populations; and (j) which techniques are most cost-effective overall for restoring Saker populations. If results from first grids in the north, and releases in the south, show scope to increase the Kazakh Saker population, more than 1000 boxes will be installed.

2. Background

The Saker Falcon (*Falcon cherrug*) is the world's second largest falcon, with breeding populations distributed across the breadth of Eurasia, with some migration to Africa for winter. Falcons have for many centuries been trapped sustainably for use in falconry, typically while on migration and with subsequent release of trained birds back to the wild at the end of the hunting season.

As a result of electrocution, poisoning and excessive trapping, as well as large scale anthropogenic changes in land use, Saker populations declined globally, leading to Red

Listing of the species as threatened, and growing pressure for action through the Convention on the Conservation of Migratory Species (CMS 2003) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1979). Concerned with rapid decline of the species, the Saker Falcon Task Force (STF) was formally established through CMS Resolution 10.28 adopted at the 10th Conference of the Parties (COP10) in November 2011. The STF aims to bring together Range States, Co-operating Partners and other interested parties to develop a coordinated Global Action Plan, including a management and monitoring system to conserve the species. The STF drafted a Saker Falcon Global Action Plan (SakerGAP) to inform a Stakeholders' Workshop in September 2013, which included a Working Group on sustainable use of the species, primarily for falconry. That working group was informed by a report by members of IUCN Sustainable Use and Livelihoods Specialist Group on "Elaboration of a modelling framework to integrate population dynamics and sustainable use of the Saker Falcon *Falco cherrug*", which used data from recent studies of Saker breeding populations.

That report reviewed demographic modelling of raptors, built models for the Saker Falcon and developed a socio-economic model for Saker management (tested against observed growth of the Saker population in Hungary) to predict resilience of compact European and central Asian Saker populations above 80 pairs if not subject to trapping of breeding adults. It noted the potential for using recapture on migration of falcons marked in breeding areas to estimate population sizes as well as harvests. Help by Saudi Wildlife Authority enabled survey of falconers and trappers and resulted in plans for a multi-lingual portal to attract these practitioners (by giving useful knowledge, sponsoring birds marked in breeding areas, surveys and competitions), to promote the idea of not trapping adults in breeding areas, to provide tools for monitoring populations and also to host a system for regulating trade.

The Working Group on Sustainable Use, reporting at the Stakeholder Workshop in Abu Dhabi in September 2013, also noted extensive work by International Wildlife Consultants (IWC) to enhance Saker populations in Mongolia with grids of Dixon nest boxes in habitats without Saker nesting sites. Prompt settlement of these grids indicated a surplus of non-breeding falcons in Mongolia, as predicted by modelling. Previous work in Kazakhstan (like IWC, funded by Environment Agency - Abu Dhabi and its precursor) showed that Sakers in the north had healthy populations which use a flyway through Saudi Arabia, where numbers of migrant falcons appear fairly stable, but that there were relatively few tree-nesting sites for them in Kazakhstan compared to the area of steppe. In the south, cliff nest sites too were fairly rare, but this was not limiting because the population needed restoration after overharvesting (probably of adults in breeding areas that are easily accessible). The northern area has few access roads, migratory Sakers that leave after breeding and a supportive human population, which has conserved the stock. There is therefore scope for enhancing breeding populations by releasing birds in areas that are less accessible to trappers in the south, and perhaps to enhance the northern population by providing artificial sites extending south across the steppe.

3. Objectives

Overall objectives are to:

- Discover how artificial nest sites can best enhance Saker breeding in Kazakhstan;
- Test whether local communities can promote conservation of breeding Sakers;
- See how much Sakers can benefit from conservation through use in Gulf States.

Phase I objectives are, during the first 3 years, to:

- (i) lay 2 linked grids of 100-200 artificial nests, in north and south Kazakhstan;
- (ii) hack domestic-bred and wild-origin fledglings from the boxes, and elsewhere;
- (iii) monitor migration and fate of falcons fledged in these areas with GPS-SMS tags;
- (iv) record settlement patterns on the grids for released and wild-origin falcons;
- (v) test whether falconers in the Arabian Peninsula, kept informed through the portal project, are likely to sponsor extension of such work for the long term.

Phase II: if justified by Phase 1 results, during 2 further years, additional objectives are to:

- (vi) add further linked grids of 100-200 artificial nests;
- (vii) monitor changing attitudes and actions of local communities in the areas;
- (viii) use all these data to roll-out the techniques to more of the Saker distribution.

Information from this work will be as much sociological as ecological; to ecological data on

- (a) what factors most strongly affect colonisation of artificial nests;
 - (b) how suitable is habitat for Sakers adjacent to traditional nesting areas;
 - (c) movements and survival of Sakers fledged in northern and southern Kazakhstan;
 - (d) how origin nest type affects choice of breeding site in Sakers;
 - (e) which release techniques produce best survival;
- will be added socio-economic information on:
- (f) harvest rates of Saker populations using Arabian Peninsula flyways;
 - (g) whether ordinary falconers will contribute to conserving wild breeding stocks;
 - (h) whether local communities will contribute to conserving Sakers and nesting areas;
 - (i) how access and local engagement can contribute to protecting breeding populations;
 - (j) which techniques are most cost-effective overall for re-storing Saker populations.

4. Activities

The proposed techniques and their application are as follows.

Grids

Completed grids will contain artificial nests in rows of 10 at 5 km intervals away from the natural nest sites. However, for the first year there will be only 5 per row in ten rows (extending 50 km from natural nests in total) so that fewer are placed while construction techniques are improved and risk of tampering or theft of the metal structures is assessed. Dixon boxes are essentially oil-drums mounted vertically on poles, with access openings cut in the sides (Figure 1). In the second year, when grids are completed, the two running south

in the north will have some tree simulations added, to see if these are more attractive, especially for wild birds reared in natural tree nests.

Figure 1. *Sakers breeding in a Dixon box on Mongolian steppe.*



Releases

Standard hacking techniques will be used to release fledging birds from the structures at maximum distance from natural sites, to encourage philopatric birds to nest on the structures rather than transfer to natural nests. Some birds will also be released from tree-

nest structures in an area of southern Kazakhstan where preliminary releases indicate this approach to be suitable; hacking success was very good for large groups of fledglings. Young will be obtained from breeding centres and, if licensed, also from a north Kazakh population by techniques to increase eggs laid by wild Sakers, so that additional young can be reared by domestic surrogates. Areas subjected to excessive harvest often have lone males remaining; if practical, a few females for the south may be trained and provided in the south in ways that encourage wild males to pair with them for breeding without full release.

Monitoring of falcons

All young released and reared wild in the project areas will be fitted with leg rings and internal microchips, to enable reporting either by trappers or by falcon clinics, to which falconers routinely take newly acquired birds in Saudi Arabia (survey results) and elsewhere. This will build further data on harvest rates and sizes of the Saker population using the Red Sea flyway. All released birds will be equipped with recently developed GPS-retransmission tags that weigh 17g and store (30,000) GPS locations for download when they encounter a mobile phone system, as they will do at least in the marking areas and on migration. The locations are accurate typically (80%) to 20m, and use solar cells to last several years, which will build a rich database of Saker movements in relation to remote-sensed habitats.

Dissemination

Details of movements of tagged birds will be downloaded soon after receipt to the Portal for Enhancing Trust (PET), which is aimed to attract falconers and trappers in Arabic, Kazakh, Persian, Pashto and Russian and will link to Falcon Clinics. A synopsis of the project, with inducements to sponsor release and tagging of more birds, as well as to help the project by reporting trapped Sakers, will be updated four times a year. There will also be annual reports in English to the UNEP-CMS Saker Task Force.

Monitoring by people

As well as use of the PET to contact the trappers and falconer communities, through computers and smart-phones, local people in the areas of natural breeding and grids will be made aware of the project through the PET and through direct contact (e.g. school visits, local stakeholder meetings). They will be involved in building artificial nests, reporting wild nests and tagged birds, recording unrecognised visitors in areas, and in all other ways possible in order to build interest in Sakers and their habitats. Before-and-after surveys will provide additional data on the potential development of community conservation benefits.

5. Timeline and Milestones

The GANTT below shows timelines for the project Phase I.

Months of year (month.year)	1.1	2-3.1	4-6.1	7-12.1	1.2	2-3.2	4-6.2	7-12.2	1.3	2-3.3	4-6.3	7-11.3	12.3
Planning (site-meetings)	█			█				█					
Negotiations (gov, breeders, institutes)	█	█											
Building and installing artificial nests		█		█									
Releasing birds, marking wild birds			█				█				█		
Monitoring birds				█	█	█	█	█	█	█	█	█	█
Liaising with local communities	█	█	█	█	█	█	█	█	█	█	█	█	█
Reporting on portal			█	█	█	█	█	█	█	█	█	█	█
Reporting to STF					█				█				█

6. Outputs, deliverables and impact

Outputs and deliverables will include:

- Trial grids with 200-300 nest structure in northern and southern Kazakhstan.
- Release of at least 50 falcons from these structures and elsewhere over 3 years.
- Three-monthly multilingual update of progress on the Portal for Enhancing Trust.
- Annual report to UNEP CMS and sponsors of ecological and socio-economic results.

Potential ecological impacts will be increased breeding of Sakers in Kazakhstan, especially on the migratory flyways that pass through the Arabian Peninsula. However, if the project also successfully engages local communities and the community of practitioners visiting the multilingual Portal for Enhancing Trust, the eventual outcome for funding and protection on of Saker falcons and their steppe habitats could be even more important. The ultimate aim of this project and the portal is the creation of a network of enthusiasm, knowledge and funding for conserving Saker Falcons. As noted for the Portal project, if traditional falconry is to thrive, based on sustainable use of falcons and prey which depend on vulnerable grassland ecosystems, it is essential that falconers become organised to help (i) collect data for sustainable harvests, (ii) reduce poisoning and electrocution, (iii) halt trapping of breeding adult Sakers and (iv) restock depleted Saker populations.

7. Contributing organisations and experts

The lead organisations for this work will provisionally be the International Association for Falconry and Conservation of Birds of Prey (IAF) and IUCN. Support is being requested from one or more institutions in [Qatar][Saudi Arabia] for extending Saker conservation management to Kazakhstan, for which permission and help will also be needed from the Kazakh Government, Institute of Zoology and Sunkar Falcon Centre. An advisory board, which will be consulted on drafts and asked for help according to their expertise, will consist of Prof R Kenward, Dr A Dixon, Drs Y and T Bragin, Mr R Pfeffer, Mr J Sielicki, Mr M Prommer and one or more representatives from [Qatar][Saudi Arabia]. Robert Kenward and Andrew Dixon have, between them, more than 20 years experience of work with wild Saker falcons in Central Asia and much longer with releasing and monitoring raptors, especially by radio-tracking. Yevgeny Bragin and Ralf Pfeffer have each worked on Saker falcons in Kazakhstan for more than 30 years, in the latter case also managing release of birds from the Sunkar Centre. Dr Tatyana Bragina has experience with IUCN of working with local community projects. Janusz Sielicki, also experienced in releasing falcons, will represent International Association for Falconry and Conservation of Birds of Prey (IAF) and link with the CMS-IAF portal project. Mátyás Prommer is experienced in working with Birdlife International on Saker telemetry and will link to the project for Satellite Tagging 100 Saker Falcons.

8. Estimated budget

The budget estimates below are separate for Phase I, which will test techniques during the first 3 years, and provisionally also for a Phase II to roll-out the project to at least 1000 nest boxes for Saker Falcons during the following 3 years.

Phase I (first 3 years)	costed in Euros	US\$
300 nest-boxes @ €75	22,500	30,405
50 falcons for release (@ €1,000)	50,000	67,568
50 GPS-SMS tags for released falcons (@€1430/tag+1y data)	71,500	96,622
Two vehicles @ €20,000	40,000	54,054
Misc. equipment (chips, rings, hack food, security sensors)	15,000	20,270
Travel budget (Kazakhstan & international)	30,000	40,541
Field staff (4 persons 3m/y, 3y, @€1000 pcm)	36,000	48,649
Training, supervision and reporting	30,000	40,541
Totals	295,000	398,649
Phase II (second 3 years)	costed in Euros	US\$
700 nest-boxes @ €75	52,500	70,946
50 falcons for release (@ €1,000)	50,000	67,568
50 GPS-SMS tags for released falcons (@€1430/tag+1y data)	71,500	96,622
Misc. equipment (chips, rings, hack food, security sensors)	10,000	13,514
Travel budget (Kazakhstan & international)	40,000	54,054
Field staff (6 persons 3m/y, 3y, @€1000 pcm)	54,000	72,973
Supervision and reporting	20,000	27,027
Totals	298,000	402,703