

# Falcon Release and Migration

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Falconry has been practiced for hundreds of years in the Arabian countries. In former times, bedouins had trapped falcons on their migration routes over the Arabian Peninsula in autumn. They used these falcons for hunting to provide additional meat for their families. This helped considerably to secure their family's survival. At the end of the hunting season during the months of February to April, the falcons were released again and returned to their original breeding places. Preferred falcons for hunting were Saker falcons. As the life of the Bedouins changed towards our modern world, so did the life of those wild falcons. The falconers started to keep them during the summer time in order to use them again for falconry in the coming year. This contributed to an existential problem for the wild falcon population: the breeding cycle of wild females used for falconry was interrupted or even stopped completely. This resulted in a dramatic decrease of falcons in the wild. H.H. Shk. Zayed bin Sultan Al Nahyan realized the deteriorating situation and invented the Falcon Release Program in 1995. He encouraged falconers to donate their falcons for this program at the end of the hunting season and released those falcons back to the wild.

## Falcon selection and identification

Only wild-caught or wild confiscated falcons, especially Saker falcons (*Falco cherrug*) and Peregrine falcons (*Falco peregrinus*) are released. Captive-bred falcons like Gyrfalcons (*Falco rusticolus*) or hybrid falcons are refused for the release program in general. Each falcon is identified by species, age, sex and coloration. Morphometric measurements of the wing, the primary



feathers and the leg are performed and noted on special data sheets. PIT (Passive Induced Transponder) for permanent and unique identification as well as special release rings (ring size N for peregrines and P for saker) are used for unique identification. These rings carry a unique four digit number after the N or P, name and address of ERWDA, the responsible organization for the release.

## Veterinary health screening

A complete physical examination is performed with special emphasize on weight and pectoral muscle mass condition, stage of dehydration, mouth, eyes, nostrils, ears and sternum. The falcons have to undergo stress test, as well as check up of feet, feathers and coping of beak and talons. Parasitological tests of fecal and crop is performed routinely. Specialized laboratory tests include virology, *Chlamydophila* test as well as blood hematology and biochemistry. Medical examinations include radiography being performed in suspicious cases or in those falcons whose physical check-up showed symptoms requiring further examination. Endoscopic examinations are done following problems during the stress test or/and increase in certain blood parameters thus indicating a possible fungal or bacterial disease in the airsacs or internal organs. Apart from multivitamin substitution and fluid substitution all healthy falcons receive vaccination against Newcastle Disease Virus and pox virus twice with a 21 day interval.

## Preparations for the Release

All falcons selected for release have to undergo extensive training on a daily basis preferably for a time period of minimum four weeks prior to the release. All selected falcons for the release program are fed a balanced quality diet on quails or healthy pigeons or, if available wild quarry. Sakers are eating rodents and small mammals as part of their natural diet. Therefore, mice and rats etc are integrated in their feeding plan.





## Migration

All falcons are released in area of known migration routes for falcons and their prey species. The migration or dispersion of the release falcons is somewhat difficult to assert with certainty as only a few birds every year are marked with satellites transmitters. A total of 50 transmitters have been put on falcons since 1995 (27 on Sakers and 23 on Peregrines).


After release the Sakers usually disperse dispersion on a west – east axis around the release sites, especially when the release site is in northern Pakistan. One Saker, released in Chitral, Pakistan went more than 12,000 km from the Aral Sea Shore to West Mongolia, before going back to the area of the release.

Peregrine tend to migrate North of the release sites, mainly towards Siberia in Russia.

The average duration for which we received transmission activity is 82 days for Sakers and 152 days for



Peregrines (data analysed up to 2000). The maximum survival was in 1997 when the birds were release in the Issyk-Kul Lake in Kyrgyzstan (136 days for a Saker and 435 for Peregrine).

A total of 788 falcons have been released since 1995. 50 Satellite transmitters were fitted on the birds. 



### Scientific information Birds released:

Year	Location	Sa		Per	
			PTTs		PTTs
1995	Kharan, Pakistan	85	4	22	
1996	Gilgit, Pakistan	65	6	20	
1997	Issyk-Kul, Kirgistan	35	1	24	3
1998	Issyk-Kul, Kirgistan	37	4	30	2
1999	Gilgit, Pakistan	38	4	44	4
2000	Gilgit, Pakistan	33	2	78	2
2001	Chitral, Pakistan	10	1	65	5
2002	Chitral, Pakistan	27	3	75	3
2003	Gurgan, Iran	44	2	56	4
Total		374	27	414	23

### How does satellite-tracking work:

The satellite tracking system used has four components: the transmitters, satellites, computer data processing in France and a modem/Internet link from France to Abu Dhabi.

The transmitter weighs 20g (Peregrine) or 30g (Saker), but only 3.5 g of this is the electronics: the vast bulk consists of the high-rate solar-powered lithium battery. Signals are pulsed from the transmitters every 60 seconds at a stable frequency of 401.65 MHz. Each pulse lasts 360 milliseconds and contains information on the identity of the transmitter, the activity of the bird, the ambient temperature and the battery voltage. Three National Oceanic Atmospheric Administration (NOAA) satellites receive signals, although several others are scheduled to become operational in the near future. The satellites orbit the earth from the North to South Poles once every 102 minutes. Each orbit is displaced from the previous by 25 degrees to the west, so that the satellite path covers the entire earth during the course of a single day. Data are collected from any of the registered transmitters and then stored by the satellite until it passes over France when the information is sent down to a receiving station. In France, the data are processed and the latitude and longitude of the transmitter, and hence of the bird, is calculated. The system is not perfect, but most locations are within 10 km of the true point, a remarkable accuracy for tracking migration routes. After processing, a modem or Internet connection sends the data to the NARC in Abu Dhabi.