

Transmitters Integral to Research of Asian Houbara Bustard

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The National Avian Research Center (NARC) was established in 1989 and has been in operational existence since 1993, in the Abu Dhabi emirate of the United Arab Emirates. The object of its study is the Asian houbara bustard, *Chlamydotis macqueenii*, and the reason for its existence is Arabian falconry, for which the houbara is primary quarry species. NARC aims to promote houbara conservation and reconcile the falconry with sustainable use of houbara throughout their range.

A broad international scope of operations is necessitated by the migratory nature of both the houbara, which are chiefly winter visitors to the Arabian Peninsula, and the falconers, who travel widely in search of quarry.

From the beginning it was understood that a study of houbara wintering in the UAE would benefit from information on where the birds were coming from. Our first trials to catch houbara in UAE and fit them with satellite transmitters in the mid 1990's (Osborne *et al.* 1997) have developed into a general elucidation of houbara migration routes across Asia. For the most recently published see Judas *et al.* (2006) and references listed within. The use of satellite transmitters has been an integral part of our research activities, and for > 95% of cases we have used units from Microwave Telemetry. All transmitters are fitted as backpacks using Teflon ribbon harness.

Initially we used battery powered PTTs which became exhausted and stopped transmitting after 6 months, but nevertheless allowed us to connect breeding grounds with wintering areas. Subsequently the development of solar powered 35 gram units, with the potential to work for several years, allowed a more detailed analysis of migration routes and stopover sites, along with juvenile dispersal (using expandable elasticated harnesses for birds that still have a bit of growing to do).



A male is snared using a dummy female.

From 1995 to date we have deployed 83 PTTs on wild houbara and acquired 62 useable migration/dispersal tracks from start points in United Arab Emirates, Pakistan, Iran, Kazakhstan, China, Oman and Yemen. If the higher mortality rates in early trials and juveniles are excluded, we have 55 tracks from 65 deployed transmitters, many covering more than one annual cycle.

We have also used PTTs on houbara that we receive into our quarantine facility after having been confiscated from smugglers by UAE customs officials. After completing quarantine and rehabilitation some birds are suitable for re-release to the wild. To properly gauge the success of the rehab programme it is instructive to follow their fate post release. Of 219 houbara re-released since 1999, 23 have been equipped with PTTs. Most individuals attempt aberrant migration tracks, probably because they cannot account for the geographical translocation when smuggled from their (unknown to us) point of origin, and there is a high mortality in the first months after release. The results indicate that, whilst the public relations benefits from caring for and releasing confiscated birds cannot be dismissed and we can endeavour to improve the rehab and release procedures, a greater benefit both to the species and the individuals concerned will come from efforts to stop the illegal trade occurring in the first place.

In addition to tracking migration routes, the fact that birds are flying around with PTTs on them allows other studies to be envisaged; for example the measuring of mortality rate by deducing live-or-dead data from satellite tagged houbara.

Falconers are commonly very secretive about their success during hunting expeditions and poachers do not publicise their activities, so we used satellite tracked individuals as a way to measure mortality rate independently (Combreau *et al.* 2002). The data gathered extends across time and international borders in a manner impossible to achieve with other means.

The transmitters can be useful to us even after they may have stopped working, because the "ring return" rate for houbara fitted with a transmitter is 12 times greater than the return rate from houbara fitted with just a ring, indicating that a small box strapped on the back with a full address printed on the side is much more inductive to finders than a metal leg ring with P.O. Box number. We have over 10% of PTTs returned to us by falconers or other hunters, but less than 1% of rings where a bird has no transmitter. In one slightly annoying case a falconer caught the houbara alive, carefully removed the transmitter for returning to us, and released the houbara to continue its journey untracked.



Female houbara with 45gram GPS PTT.

Photo by Michel Gunther



Mark Lawrence outfits a male houbara with a 35g solar PTT.

Photo by NARC

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