THE EMIRATES CENTER FOR WILDLIFE PROPAGATION: COMPREHENSIVE STRATEGY TO SECURE SELF-SUSTAINING WILD POPULATIONS OF HOUBARA BUSTARD (*CHLAMYDOTIS UNDULATA UNDULATA*) IN EASTERN MOROCCO

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Introduction

The houbara bustard is a shy bird, well adapted to desert environments. Two species are recognised (Gaucher, 1996): *Chlamydotis macqueenii,* the Asian species which inhabits the arid plains from Sinaï to Mongolia and *Chlamydotis undulata,* the African species, which is divided into two subspecies: *Chlamydotis undulata fuertaventurae*, only found in Canary Islands, and *Chlamydotis undulata undulata,* resident in North-African semi-desert steppes from Morocco to Sinaï. Houbara bustard populations have drastically declined throughout their entire distribution range during recent decades. Over-hunting, poaching and severe habitat degradation are the main recognized factors for this decline.

The Emirates Center for Wildlife Propagation (ECWP) was created in October 1995 by His Highness Sheikh Zayed bin Sultan Al Nahyan, President of the United Arab Emirates, with the aim of ensuring a self-sustaining use of houbara bustard populations in Eastern Morocco.

The project is based in eastern Morocco, near Missour and is managing an area of about 40 000 km² (See figure 1). It is composed of two captive-breeding stations, one in Missour and another one (under construction) situated in Enjil valley, and two field release stations.

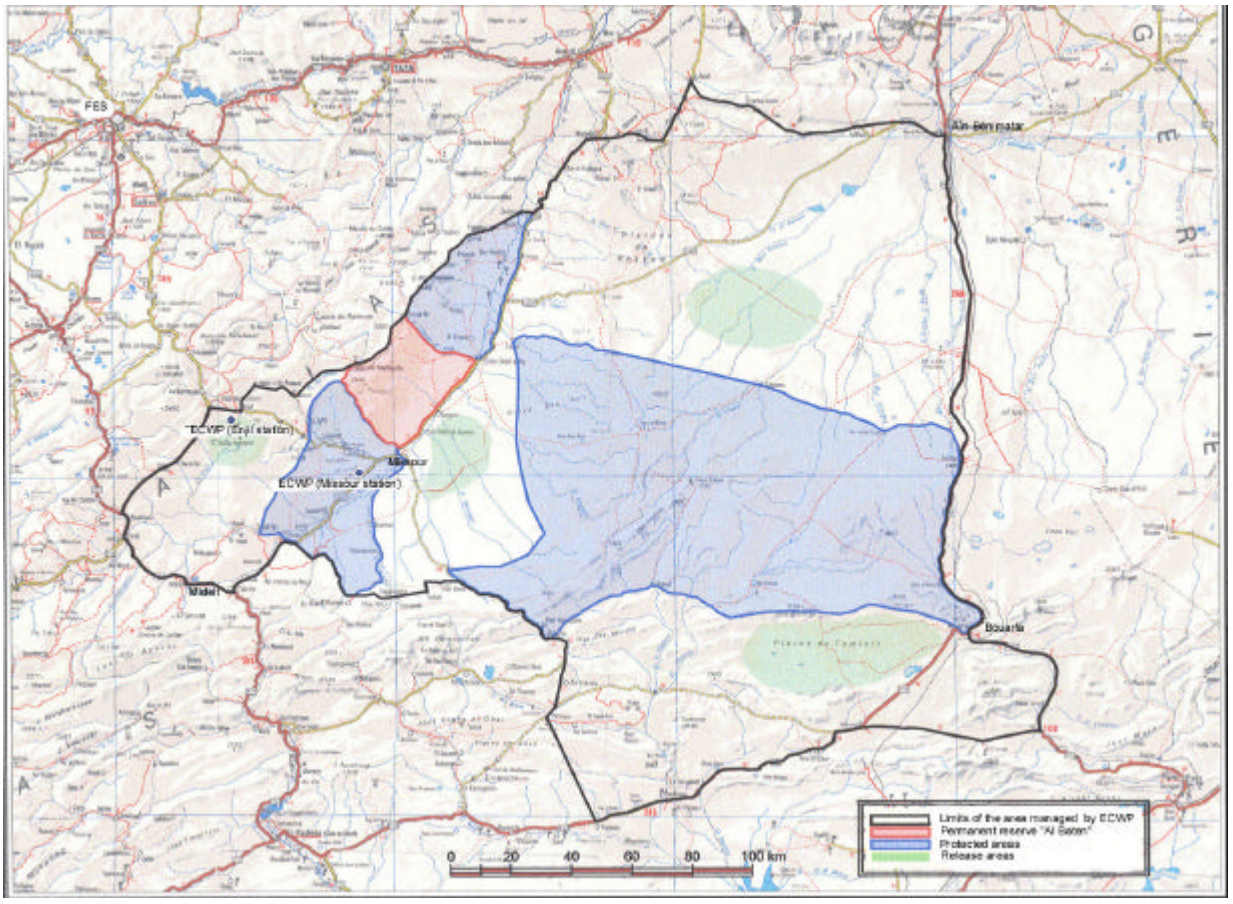

Figure 1: Limits and organisation of the area managed by ECWP

ECWP Main Objectives and First Achievements

1 - To establish and manage a self-sustaining captive-breeding programme of houbara bustards.

The captive-breeding of houbara bustard is a long and complex process. Only a complete artificial reproduction process applied on hand-reared and imprinted breeder birds can contribute to a significant captive production. Other types of breeding methods used in captivity always proved to be chancy and less productive.

The ECWP has achieved a high level of expertise in the artificial reproduction of houbara bustard. The early years of the project were devoted to the establishment of a high quality breeding flock and to the standardization of reliable breeding techniques. Two different groups of birds must be produced: birds that will be released and birds that will reinforce the breeding stock. Objectives and constraints for these two populations are totally different and specific breeding techniques for these two groups were developed. Significant progress was also made in the disease control and health management of the captive birds, especially in the control of infectious disease of significance, such as Poxvirus disease, Newcastle disease and Chlamydiosis. Nethertheless, diseases of houbara bustards remain poorly documented and addressing the sanitary risks, while also attending to improvement of nutrition and genetic management, represents the backbone of on-going and future research programmes.

The annual production is now regularly increasing (151 chicks were produced in 1999, 793 in 2002) according to a 10 year development strategy adopted in 2000, with a final objective of producing 5,000 birds a year by or before the year 2008.

The establishment of a self-sustaining captive-breeding population is now complete and the main objectives of the captive-breeding programme are to produce an annual surplus of birds for release back into managed areas and for training falcons.

2 - To undertake research on wild populations and to determine suitable areas for protection and suitable ones as release sites.

Ensuring the restoration of a sustainable wild houbara population is the core issue of the ECWP houbara bustard propagation programme. So, field studies were recognized from beginning of the project as a critical element for the success of the project. Indeed, very little is known about the ecology and biology of the African species of houbara bustards and very little information was also available on the situation of wild populations in eastern Morocco at the creation of the project in 1995.

This is why sound ecological research programmes were initiated in 1996, aiming to improve the fundamental knowledge of the status, distribution and population trends of houbara bustard populations in eastern Morocco. Results generated by these works are fundamental to adjust the release programme and to optimise the whole area management.
In particular, in-depth long-term research works are on-going with two international collaborations:

- the Natural History Museum (MNHN) of Paris, France, to study the home range and habitat use.
- the Mediterranean Institute of Ecology and Paleoecology (IMEP) of Marseille, France, to study, with GIS, the structure and evolution of the habitat and its relationships with houbara bustards distribution.

In 1997, the ECWP created a protected area designated as a “non hunting zone” in order to protect a known reservoir of houbara bustards in a 1,000 km² study area. In February 2002, based on information from the ecological programme, the ECWP put an additional 14,000 km² of critical houbara breeding habitat in protection. In parallel, four main release areas, with field facilities, have been organized (See figure 1).

A permanent monitoring of radio-tagged wild birds is conducted in the whole hunting area to monitor the impact of conservation measures on the restoration of populations. For example, fifty wild houbara females were caught, mostly inside those protected areas, and fitted with solar transmitters; they are closely monitored to study the recruitment rates and the juvenile dispersion.

3 - To conduct a release and monitoring programme of captive-bred houbara bustards.

The ECWP has created specific rearing techniques and developed reliable release procedures that take into account the behavioural, physiological and physical requirements of the captive-produced birds destined for release. Particular attention is paid to the sanitary and genetic implications of releases.
Only small-scale releases have been conducted for the moment, in order to fine-tune the release procedures. Since 1998, 348 birds were released, with 240 in 2002. The survival rate one year after release is ranging from 30% to 80% according to the age of the birds at release and the period of the release. Results are close to 0% with birds maintained 2 years or more in captivity, even if maintained under specific pre-release procedures. The best results are achieved with the release of sub-adult birds between October and March.

The first records of natural breeding from reintroduced birds occurred in 2001 with one female giving one nest of 2 eggs and a few displaying males observed. In 2002, 10 females were found with a nest and three reared their chicks.

Conclusion

After 7 years, the ECWP is still a young project but it has already recorded significant progress in most of its programmes and has matured its strategy to become a coherent integrated project, organized as a network of specialized stations managing a controlled hunting area. In that perspective, the ECWP represents a valuable example of a possible approach for the sustainable management of houbara bustard populations.

References

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