3. Houbara Bustards in Kazakhstan: Distribution, Numbers, Seasonal Movements, Research Effort and Protection

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Abstract: The houbara bustard Chlamydotis undulata is the only representative of this genus in Kazakhstan, and is listed in the 1986 Red Data Book of the USSR and the 1991 Red Data Book for Kazakhstan as a rare species in danger of extinction. Houbara inhabit a large area extending from the Caspian Sea in the west to the Altai mountains in the east, with a northern limit at latitude 48°N. Typical habitats are steppes and flat semi-desert areas with low hills, stoney and sandy deserts, as well as gently undulating desert foothills of mountain ranges. According to the 1991 Red Data Book the houbara population in Kazakhstan is about 30,000 birds, however many areas have not yet been surveyed and it is possible that the population may in fact be larger. Surveys with aircraft in the Mangyshlak Peninsula and northern and western parts of the Ustyurt Tableland have yielded estimates of at least 13-19 thousand birds in this large area (167,000 km²)(Gubin 1991a). Degradation of potentially important areas through agriculture, overgrazing, disturbance and poaching are the main factors limiting population size. Houbara are migratory in Kazakhstan, appearing in April-May, and leaving by the middle of October. On some occasions wintering birds have been recorded in the Kyzylkum desert in South Kazakhstan. Breeding occurs in April - May. Mean clutch size is two to five, and chicks usually hatch in May and June. Houbara diet consists of seeds, plant parts, invertebrates (spiders, insects) and occasionally small lizards. Eagles, wolves, foxes and wild cats have been recorded as natural predators. Shepherds’ dogs are also responsible for some of the mortality. There are five State Reserves for houbara protection and conservation in Kazakhstan, and two more designated for the near future.

Introduction

In the vast expanses of the deserts and semi-deserts of Kazakhstan can be found the largest and lightest coloured of the three known sub-species of houbara bustard, Chlamydotis undulata macqueenii, occupying an area encompassing the Caspian shores to the west, the Zaisan basin to the east, and from the southern border of the Republic to 48°N (Gavrin 1962). Within this range the houbara's distribution is patchy, and the entire population is migratory. Typical habitats are sandy, rocky, or hard-packed soil, with a preference for certain biotopes, such as the fringes of sand massifs (hence its Kazakh name “zhiek”, meaning the border of the sands; Kovshar et al. 1986), plateaus and high points within sand massifs, sea-shores, banks of large lakes and reservoirs, river valleys and the dry beds of ancient rivers. Large depressions with saline soils are also preferred. In all areas where houbara are found vegetation is sparse, with low grass cover mainly comprising wormwoods, Salsola and grasses as well as small clumps of Haloxyron, Tamarix and other shrubs. Houbara are not found in mountainous or rugged country.
Numbers

The absence of reliable methods for counting and studying houbara bustards, their low numbers, their tendency to inhabit inaccessible places, and their fear of man and vehicles all pose significant problems when attempting to ascertain the numbers of this species. The total population of houbara bustards in the former USSR has been estimated at one thousand pairs (Isakov & Flint 1987). These figures diverge widely from those reported for wintering areas. In Pakistan Arab falconers annually kill between two and three thousand according to Goriup (1982), four and five thousand according to Mian and Dasti (1985), or even seven thousand birds (Kroll 1977). More than 20 thousand birds have been reported to over-winter in Pakistan (Goriup 1980; 1982; Mian 1984).

Estimates of numbers of houbara bustards in Kazakhstan indicate that in Betpakdala, the south Balkhash Basin, Kyzylkum and adjacent zones there are approximately five-to-six thousand birds (Kovshar et al. 1986; Gubin 1986), and in the Mangyshlak Peninsula and the Kazakhstan part of the Ustyurt Plateau, about 13-19 thousand individuals (Gubin 1991a). The entire republic may have a population of about 30-40 thousand houbara, at a density that ranges between 0.001 to 1.2-1.5 individuals per km², depending on the region. Unfortunately research on houbara was halted in 1991 because of financial difficulties experienced by the Republic, and is unlikely to resume without financial aid from countries interested in determining numbers of houbara and the migratory routes of these fascinating birds.

Timing of arrivals and departures and seasonal distribution

In the southern regions of Kazakhstan houbara appear at the beginning and middle of March and continue to arrive until mid-April, depending on the timing of the beginning of spring. At the northern fringe of the range migrants arrive one month later. Thus, in west Kyzylkum an increase in numbers is observed in March, and in April a gradual decrease of bird numbers takes place with further northward movement. By the first half of May only breeding birds remain in this area (Gubin & Skliarenko 1990). Local and migratory houbara do not overlap territorially, probably due to competition for food, and to the occupation of individual sites by males from the middle of March and by females from the beginning of April. Local birds appear first on rather flat and extensive areas that are practically devoid of vegetation; they gather on these areas overnight, and then gradually disperse to their individual territories. This results in a distinct local-scale distribution at the beginning of the nesting period, with the males occupying flat places with slight elevations, or little hillocks on which they advertise themselves through courtship displays (Gubin & Skliarenko 1989), whereas the females shift to the edges of sand dunes to position their nests so as not be seen by males displaying on the hillocks. Juvenile houbara spend the summer in small groups, occupying intermediate areas or dispersing along the borders of these male/female habitats. In June and July at the end of the reproductive period males and females move to places with single trees or clumps of saksaul. At this time ambient temperatures reach 40°C and the soil heats up to 70°C or more. The hottest time of the day is spent in the shade and most feeding occurs early in the morning, after sunset, and also at night when the moon is full.

In July and August individuals from the northern populations begin to shift to the south, arriving in the first half of September. They are also separated territorially from the local birds; this separation is particularly important in autumn as food availability is
reduced substantially from August onwards. Birds being pursued at this time often fly in
the direction of the migration (in spring to the north-east, and in autumn to the south-west),
while local birds disperse in apparently haphazard directions. At the beginning of October
there are no longer any houbara in the northern parts of their range, and in the south the
last individuals disappear at the beginning of November.

Possibly the first birds to arrive in spring and to depart in autumn are those birds from
the southern populations, with the northern birds arriving and leaving later. In winter only
isolated individuals remain in the Kyzylkum desert, most probably sick animals doomed to
perish. It is thought that the eastern populations migrate to Pakistan and India and the
western to Iran, Iraq and the Arabian Peninsula. These hypotheses have not been tested.

Current research

Bearing in mind that a knowledge of behaviour is the basis of the study of the species
as a whole, we chose an area of 81,000 ha in the Eastern Kyzylkum desert, which supports
about 300-500 houbara bustards. From 1986 to 1989 we carried out observations between
March and June, and in September (10 to 30 days) to record life-history details of houbara

From the middle to the end of March until the beginning or end of June the males
periodically make courtship displays, which function to attract females to individual
territories. These territories are defended against other males; the limits of the territory are
marked, and the attentions of predators are diverted. Depending on the size of the valley
and the quality of the habitat, between one and more than 10 displaying males may be
seen; distances between centres of adjacent territories were between one and two
kilometres.

Courtship displays begin before sunrise and finish at dusk. During the most active
part of the reproductive period males display throughout the entire day with short intervals
between displays. From early May courtship behaviour was no longer observed, except on
cool cloudy days when some daytime displaying was recorded. Strong winds and heavy
rain inhibited courtship activity.

After copulating with the male the female makes a nest in a place with an aspect of
360°, digging a hole about 217x206 mm wide, and 30mm deep. The nests are situated 30-
100 m from the nearest sand-dune, 300-2000 m from the nearest male and 450-900 m from
neighbouring females. A full clutch contains three-to-four eggs (occasionally two or five
eggs), which are laid at 48 hour intervals, from the end of March and the middle of April
until the end of May. Peak egg-laying in eastern Kyzylkum takes place in April.
Replacement clutches are smaller. Brooding begins after the laying of the second egg;
following this the intensity of incubation increases and reaches a maximum at hatching. If
undisturbed the female may leave the nest for between seven and 86 minutes in the middle
of the day if the weather is cool, or in the morning and the evening when it is hot. At this
time the ambient temperature approximates that of the female's body. At the end of
incubation the eggs have lost between 10% and 15% of their original weight. Incubation
lasts for 22 to 24 days. After hatching the chicks remain in the nest for the first day or two,
though in some cases the female may carry them for a distance of 100 to 150 m away from
the nest on the first day.

In eastern Kyzylkum, where there is considerable human disturbance and many
predators, only one female out of 20 observed during a period of four years managed to
raise a single chick to fledging. Up to 90% of the eggs were trampled by sheep, eaten by shepherds' dogs and foxes. Small chicks were also taken by long-legged buzzards *Buteo rufinus* and brown-necked ravens *Corvus ruficollis*.

In spite of the extremely low rate of reproduction, the houbara bustard population in eastern Kyzylkum continues to survive; excellent climatic and feeding conditions mean that this population is being supplemented by young individuals from more northern populations, moving into the southern areas to breed.

Although we now have relatively detailed information on many aspects of the life-history of houbara bustards in eastern Kyzylkum, we realize this data is far from complete. It is essential that similar research is carried out in other parts of the houbara bustard's range. We believe that, ideally, a united network of research centres should be created, working under the aegis of Birdlife International, contributing to a single programme, and employing standardised methodology. A study of the species under varying conditions would be more effective in providing the information necessary to design adequate protective and management measures, and also in determining the appropriate methodology and technology for captive rearing and reintroducing this species into areas where it has been exterminated by man.

**Status and problems of preservation of houbara bustards in Kazakhstan**

At present in Kazakhstan seven reserves, about 20 State Preserves and several Special Protected Areas are in place. The total area of the reserves amounts to only 0.3% of the area of the country and is clearly insufficient for the preservation of significant wildlife diversity. It is planned to create 20 more reserves by the year 2010, united in a common network. Today the houbara bustard is protected in two reserves (Ustyurt and Barsakelmes) and three preserves (Andasay, Aktau-Buzachi and Kapchagay game preserves), none of which contain areas considered ideal for houbara bustards (Gubin 1991b). Out of the six planned reserves in the desert zone, only three include regions with a high density of houbara bustards. These are the Betpakdala and Kyzylkum reserves and the Bairkum preserve. Although the scientific research and technological background for the creation of the first and last of these sites was prepared as early as 1989, bureaucratic procrastination has meant the project is still pending.

The dissolution of the former Soviet Union posed a significant threat to nature conservation in Kazakhstan. The absence of active legislation and the idleness of nature-preserving organisations has resulted in a period of unrestrained exploitation of our natural heritage. In the case of houbara bustards, unofficial permission for hunting given to Arab falconers from Saudi Arabia is a cause for grave concern. Prime hunting areas have already been appropriated for falconry in Turkmenistan and Uzbekistan, and at present negotiations are being held in Kazakhstan.

It is our deepest conviction that falcon hunts in the breeding grounds of the houbara bustard will lead to a complete extermination of the species. Countries interested in hunting should formulate and sign a convention under the aegis of Birdlife International, one of the main points of which should be the agreement that strict organisation of falcon hunts and compliance with terms and quotas of licensed killing is possible only in the wintering grounds of the houbara bustard. The incomes received from the utilisation of houbara bustards should be proportionally distributed among the participant countries, and directed towards the study of the species, its preservation, formulating management
and organising surveys to set quotas and hunting regulations.

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