

STATUS AND DISTRIBUTION OF THE GREAT BUSTARD AND THE LITTLE BUSTARD IN TURKEY

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ABSTRACT

A review of all records of the great bustard and the little bustard in Turkey as available from literature, including the Turkish hunting literature and unpublished sources, is presented. On the basis of these data, the present and former distribution of both species is mapped. The former distribution area of the great bustard stretched from sea level in the Marmara Region to about 1,800 m above sea level in the extreme east of Turkey. In spite of the presence of suitable habitats, breeding of the species has apparently never occurred in much of the Black Sea coastland, the inner Aegean region, Thrace and the western half of the east Anatolian region. A population decline of the great bustard has been demonstrated both by a reduction of the size of the breeding range and by the absence of winter records outside the breeding range in recent years. In particular, sites of occasional breeding and sites where small populations once existed, have been abandoned. Thus, the Turkish population is today divided into two subpopulations, one in the east and southeast and the other in inner Anatolia and the inner Mediterranean region. During winter, movements of the great bustard take place. The 0°C isotherm is the border of the wintering grounds. The little bustard formerly bred in several places in western, southeastern and eastern Anatolia, as well as probably in inner Anatolia. During recent years, however, there have been very few records from Turkey, none of which indicate breeding. Nevertheless, it cannot be ruled out that breeding still takes place, perhaps sporadically, at some place in inner, east or southeast Anatolia.

INTRODUCTION

Bustards are threatened species in nearly all countries of their distribution range. In Turkey, both the great bustard and the little bustard occur, but their distribution and status is poorly documented. The aim of this paper is to summarize all

records of both species as gathered from published sources, including the Turkish hunting literature, and from personal communications. The paper also includes the results of the bustard survey of Turkey carried out by Goriup and Parr (1983, 1985) on behalf of the International Council for Bird Preservation in spring 1981.

THE GREAT BUSTARD

Wadley (1951) who was resident in Ankara from 1943 to 1946 says about the great bustard: "Resident. Very occasionally on the open plains up to five. Numbers appear to be decreasing owing to constant hunting." Blomfield-Smith (1966) who was resident in Ankara too, mentioned two observations in winter, one of five and one of 28 birds. She does not give the name of the place, but it was probably central Anatolia. Von Aulock (1979), a hunter who was resident in Istanbul, reported that the great bustard was extremely common around his hunting lodge during late autumn and winter: "One can see one hundred individuals at once". He said that he himself had shot 16 bustards within 30 years. Unfortunately he did not mention the whereabouts of his hunting grounds.

One mounted bird in the museum of the Kuşçenneti National Park is without label, but it presumably originates from the surrounding of Manyas Gölü like many of the specimens exhibited at the museum.

The records, detailed below, have usually been listed in terms of *ova*, which is the Turkish name for plain, the typical geographic landform of Anatolia. Even central Anatolia is not a plateau, as wrongly stated in many ornithological papers, but a mountainous landscape with a high number of plains intermixed, varying greatly in size. The term *ova* has been introduced into the international geographical literature. The names of the plains have usually been taken from *Yeni Türkiye Atlası* (1977), but one should keep in mind that there are often several local names for one plain and that there are names for sub-sets of plains. The classification of the natural regions of Turkey follows Erol (1982).

Marmara Region

Meriç Deltaşı

In the Meriç valley near Enez, H. Hols and U. Glimmerveen (pers. comm.) watched two males on 20.4.81. On the Greek side of the Meriç (=Evros) Delta, Bauer and Müller (1969) mentioned three records: one pair in March 1954 (Watson), three individuals in winter 1962/3 (Güttner) and two in January 1968 (Koning and Visser).

Çorlu Ovası

Banoğlu and Burr (1952) reported that "hundreds and thousands" of bustards winter in the plain of Çorlu, but leave it during summer.

Gallipoli Yarimadaşı

Taylor (1872) was told that an "abundance of bustards" was seen near Gallipoli in the years 1854-55.

İstanbul area

Rigler (1852) included the great bustard in his list of the birds of İstanbul. He also mentioned the species in his chapter on the "nutrition of orientals". Therefore, we can assume that he saw birds being sold in the market and in game shops. Taylor (1872) also mentioned the great bustard from the food markets of Pera/İstanbul in 1854-55. According to Mathey-Dupraz (1923) the great bustard was a more or less regular migrant at İstanbul. He saw five birds at Üsküdar ("Scutari") at the beginning of December 1889 and probably the same birds two days later at Kuzgunluk ("Couscoundjouk"). He saw some in a poultry shop in December 1891 and January 1892. Furthermore, two skins were brought to the Museum of the American College in Bebek (Mathey-Dupraz 1923). Migrating bustards had been hunted in the vineyards of Erenköy ("Erenkenj") at the beginning of this century (Braun 1908), and bustard hunting near Çatalca is mentioned by Banoğlu and Burr (1952).

Karacabey Ovaşı

Vasvari met the great bustard rather commonly near Karacabey in August 1936 (Vasvari 1938, Keve 1971). Banoğlu and Burr (1952) reported the occurrence of the great bustard at Karacabey Ovaşı "during summer and winter". Kasparyan (1960) saw three individuals in the second half of August 1956. Kumerloeve (1970) received information on the bird's occurrence there in the 1960's, and a sick juvenile was brought to him there on 4.7.64. The great bustard was said to occur to the west of Manyas Gölü (near Tahirova, north of Sarıköy) (Kumerloeve 1970). Two birds were seen at Manyas Gölü on 23.-25.4.66 (Bird Report 1966-67). S. Christensen and R. F. Porter saw one there on 25.4.70 and D. S. Flumm three on 31.3.72 (Bird Report 1970-73). Goriup and Parr (1983, 1985) observed a group of 18 immature males near the village of Bereketli at Manyas Gölü on 28 and 29.3.81. A stuffed bird in the museum of the Kuşçenneti National Park might be from this region.

Balıkesir Ovaşı

Kumerloeve (1962) saw a few birds at Balıkesir Ovaşı in June 1962.

İnegöl - Bilecik Ovaşı

Kummerlöwe and Niethammer (1934) observed five individuals "between Bursa and Eşkisehir" which probably means at İnegöl Ovaşı, on 1.11.1933. Turan (1969) mentioned Yenişehir Ovaşı as a place for the occurrence of the great bustard.

Lowlands to the west of İznik Gölü

The area around Gemlik was mentioned by Huş (1974) as a bustard area, based on documents of the General Directorate of Forestry.

*Aegean Region**Sindigi Ovaşı*

One was seen in early December 1981 (Bird Report 1976-81).

Küçük Menderes valley

Strickland (1836) wrote: "frequents the plains south of Smyrna [=İzmir]". This might refer to the valley of Küçük Menderes or the plain stretching from there to İzmir. Von Gonzenbach collected one adult female near İzmir in December (at the end of the 1850's or the beginning of the 1860's) (Dresser 1873). Krüper (1875) did not want to rule out breeding of the great bustard in the "great plains near İzmir", but pointed out that this was not confirmed.

Gediz valley and Menemen Ovaşı

Kumerloeve (1962) saw one bird in the area of Sahlıhlı-Marmara Gölü in June 1962. Local hunters know the bustard as an extremely rare visitor, mainly during the winter (Kasperek, pers. obs., 1986).

Büyük Menderes Valley

Fellows (1839) noted a flock of bustards in the Menderes Valley on his way from Sultanhisar to Denizli on 8.5.1838. Schrader (1891), who was resident in Aydın from 1875 to 1876, said that according to local hunters great bustards appeared in hard winters, but he himself never saw any. According to Turan (1969) the great bustard can be found in the plain west of Bafa Gölü and the Mouth of the Büyük Menderes. Huş (1974) received information from the Directorate General of Forestry that the great bustard occurs in the plain areas around Koçarlı (İnarlı Ovaşı).

Denizli Ovaşı

The species was first recorded here by Fellows (1841) who noted it at the ancient Laodikeia north of Denizli. Serter (1972) reported that the great bustard appears here towards and during winter in small groups.

Acıpayam Ovaşı

According to the General Directorate of Forestry (Huş 1974), the great bustard can be found here.

Çivril Ovası (Islık Göl)

Like at the Denizli plain, bustards appear in small groups towards winter and may stay into January (Serter 1972).

Afyon Ovası

Kumerloeve (1962) saw a few birds between Eber Gölü and Afyon in June 1962. As Afyon Ovası has a direct connection to the basin of the Eber and Akşehir Gölü, see also these accounts (Inner Anatolian Region).

Karamık Sazlığı

L. J. Dijkzen and F. J. Koning (pers. comm., also Bird Report 1970-73) saw one individual on 14.1.72. Four individuals were recorded on 3.4.76 (Bird Report 1976-81). Local people said that the great bustard sometimes occurs in the north of the marsh (towards Eber Gölü) and that they had decreased during recent years ("can hardly be found nowadays") (Kasperek, pers. obs., 1986).

Mediterranean Region*Acıgöl*

Selous (1900) reported that an egg of the great bustard was brought to him during his stay at Çardak in May 1899. Other records are: Sept. '68: A.R. Kitson and R. F. Porter (Bird Report 1968-69) - no data; 5.1.69: 12 birds (H. Hoekstra and F. J. Koning, pers. comm.); 21.12.69: 25 birds (L. J. Dijkzen and F. J. Koning, pers. comm.); 16.1.71: 11 birds (L. J. Dijkzen and F. J. Koning, pers. comm. and Bird Report 1970-73); 8.4.73: One male (A. J. Dijkzen and Y. K. Tempelmans-Plat, pers. comm. and Bird Report 1970-73); 27.9.74: 2 birds near Dazkırı (M. Jennings, pers. comm. and Bird Report 1974-74); 3.5.81: 15 adult males between Dazkırı and Başmakçı (Goriup and Parr 1983, 1985); 5.5.86: 5 birds (2 of these adult males) near Başmakçı (Dijkzen and Kasperek 1988); 10.5.88: one each between Başmakçı and Dazkırı and between Başmakçı and Dinar (S. A. Linderström, L. Nordhjerg and T. & S. Kjargaard, pers. comm.).

Burdur Gölü

Kumerloeve (1962) noted some birds at the north side of Burdur Gölü in June 1962. Seven birds were noted on 21.11.77 (Bird Report 1976-81).

Bozova (Korkuteli)

22 great bustards were recorded south of Korkuteli (which lies on a southern spur of Bucak Ovası) on 8.1.72 (Bird Report 1970-73).

Sögüt Gölü

Goriup and Parr (1983, 1985) saw three mature males and two females on 1.5.81.

Gençali Ovası (Eğridir Gölü, Hoyran Gölü)

Turan (1969) mentioned this place as a bustard site. Other records are: 14.1.67: 2 birds (Bird Report 1966-67); 2.1.70: 2 birds (L. J. Dijkzen and F. J. Koning, pers. comm., also Bird Report 1970-73); 20.1.71: 15 birds (L. J. Dijkzen and F. J. Koning, pers. comm., also Bird Report 1970-73); 17./18.1.72: a group of 40 birds (Bird Report 1970-73); 16.5.72: 2 male and 2 females (Bird Report 1970-73); 26.2.74: 8 birds (L. J. Dijkzen and F. J. Koning, pers. comm., also Bird Report 1974/75).

Yeşilova

H. Hoekstra and F. J. Koning (pers. comm., also Bird Report 1968-69) saw one individual between Yarışlı and Yeşilova, close to Yeşilova, on 6.1.69.

Tefenni Ovası (Karataş Gölü)

10 individuals were seen near Karamanlı on 8.1.72 (Bird Report 1970-73). N. Koch (pers. comm.) saw five birds near Karataş Gölü on 18.5.80.

Beyşehir Gölü

W. Klein and F. Dellmuth noted four individuals at Beyşehir Gölü on 26.4.69 (Bird Report 1968-69).

Dalaman and Köyceğiz lowland

According to Huş (1974), the great bustard is present in the marshland around Köyceğiz and around the Dalaman river (information based on documents of the General Directorate of Forestry).

Antalya Ovası

According to statements of local people, the great bustard is a winter visitor in the area of Antalya (Kumerloeve 1970).

Taurus mountains

Danford (1878) observed flocks of great bustards at Sebil ("Zebil"), southeast of Çamlıyayla (about 35 km north of Mersin), in February 1876 and collected specimens near Pozantı (= Anascha, Anasclia) on 24.3.1876. Six birds were seen at Ulukışla on 21.5.70 (Bird Report 1970-73). These records are from highly mountainous areas which do not fit the usual habitat of the great bustard. In the case of Ulukışla, I could not verify that it really was the town in the Taurus mountains and not the village of the same name southeast of Tuz Gölü. Another possibility is that the birds were not seen in the immediate vicinity of Ulukışla, but at Ereğli Ovası, north of it.

Silifke Ovası (Göksu Deltaşı)

Kumerloeve (1970) was informed by local people that the great bustard was a

winter visitor here. D. S. Flumm saw four birds on 22.2.72 (Bird Report 1970-73) and N. Lenz (pers. comm.) one male at Paradeniz Gölü on 9.3.85.

Seyhan/Ceyhan lowland (Çukurova)

Ainsworth (1842) noted the "large bustard" in the Adana area at the end of November 1839. Schrader (1891) saw one individual near Mersin on 22.2.1885 and groups of up to 4-6 during the following weeks (or days?). Kumerloeve (1961) recorded two birds at Toprakkale on 24.5.53 and 1-2 individuals between Adana and Karataş on 23.7.53. He also heard from local people that the great bustard breeds in the area of Tarsus - Adana - Yakapınar (Misis) - Karataş. In winter, the great bustard could also occur occasionally at Çukurova (Kumerloeve 1961, 1970). For example, hundreds of bustards were seen in the vicinity of the Tanrı Verdi state farm during winter 1955/56 (Kumerloeve 1961) and one male was hunted between Toprakkale and Osmaniye in 1960 (Kumerloeve 1970). D. S. Flumm (Bird Report 1970-73) saw three birds near Tuzla on 3.3.72 and L. J. Dijkse and F. J. Koning (pers. comm., also Bird Report 1974-75) found feathers of a bird, probably shot, at Akyatan Gölü on 18.2.74. Kılıçyaldır (1972) published a photograph of a hunted bustard, probably shot in the Adana area. However, a search of the area in spring 1981 by Goriup and Parr (1983, 1985) failed to locate any birds; they found that there had been a considerable increase in urban encroachment onto the Adana plains, as well as extensive agricultural intensification.

Amık Ovaşı

Kumerloeve (1967) heard from local people that the great bustard breeds and winters here.

Inner Anatolian Region

Çankırı area

This locality was mentioned by Turan (1969) as a great bustard area.

Eskişehir Ovaşı (Porsuk valley)

Kummerlöwe and Niethammer (1934) saw two birds in the Porsuk valley east of Eskişehir on 28.9.1933. Local people told Kumerloeve (1970) that the species had occurred at the end of April 1967. Öner (1974) stated for the neighbourhood of Eskişehir "The great bustard is found only by chance and when seen, it is hunted."

Mürtet Ovaşı (west of Ankara)

Danford (1880) observed the species in or near Temelli (he gave a placename which cannot be identified) in April 1879. Kummerlöwe and Niethamer (1935, 1939) saw 35-40 birds at Ovaçay, east of Ayas, on 24.10.1933. At Ayas, Vittery noted a female on 4.5.69 (Bird Report 1968-69).

Polatlı area

Huş (1974) included the Polatlı area in his list of Turkish bustard sites which is based on information from the General Directorate of Forestry and Büker (1984) described a bustard hunt where 7 individuals were killed, apparently at the beginning of the 1960s.

Yukarı Sakarya Ovaları (area of Çifteler)

Kumerloeve (1962) noted a few birds in the area of Emirdağ - Çifteler in June 1962. Çoşkun and Sümer (1968) mentioned the great bustard from the Bahkdamı area. One was recorded there on 10.1.76 and one individual near Çifteler on 31.5.80 (Bird Report 1976-80). Goriup and Parr (1983, 1985) saw a single bird near the village of Gülçayır, between Sivrihisar and Emirdağ, on 31.3.81.

Haymana Ovaşı

Banoğlu and Burr (1952) mentioned this locality as a place where the great bustard is present throughout the year.

Ankara area

Kummerlöwe and Niethammer (1935) mentioned four young in the Ankara area on 16.10.1933 and obtained more records in the same period. The species is also present in the Ankara area according to information from local people received by Kumerloeve (1970). Serter (1972) reported the occurrence of the great bustard in the Ankara district, too. Although bustards can be seen in November and December, they ought to leave the area during January. As no exact locality for these places was published, see accounts for Mogan Gölü, Çubuk Ovaşı, Mürtet Ovaşı, and Kızılırmak valley around Kalecik.

Çubuk Ovaşı

Gesteraanus (1959) saw and photographed a female with one young north of Ankara on 27.6.51. Vittery saw five individuals at the Esenboga airport on 30.4.69 (Bird Report 1968-69).

Kızılırmak valley around Kalecik

Based on documents at the General Directorate of Forestry, Huş (1974) mentioned this locality as a bustard site.

Mogan Gölü

The regular observations of A. Vittery at the lake and south of it during February/March resulted in the following records: 27.3.67: 6 birds (Bird Report 1966-67); 25.2.68: 2 birds (Bird Report 1968-69); 11.3.68: 12 birds (Bird Report 1968-69); 30.3.68: 2 birds (Bird Report 1968-69); 8.3.69: 27 individuals (Bird Report 1968-

Elazığ Ovası and Euphrates valley

According to information from locals (1964/65) the great bustard occurs around Elazığ throughout the year, with young seen at Hazar Gölü (Kumerloeve 1967). Turan (1969) reported the bird's occurrence in the vicinity of Elazığ and published a photograph of a male which was shot there. Güçlütürk (1970) said the great bustard at Hazar Gölü was "extremely rare". Dellmuth (Bird Report 1970-73) watched five individuals near Elazığ on 4.5.70 and Harrison (Bird Report 1970-73, Aşvan Project 1972) saw one bird at Aşvan on 14.9.72. At the Aşvan site the Keban dam was constructed and the area is now flooded. Harrison was told that the great bustard is quite common in late autumn when parties of 8-10 birds are seen most days by the village herdsman; not more than one or two are killed in any one year.

Malatya Ovası

Vasvari saw bustards near Malatya on 4.7.1937 (Keve 1971). Kumerloeve (1967) got information from local people in 1964/65 which stated that the birds were there throughout the year.

Ovacık (Munzur Mountains)

Turan (1969) mentions the presence of great bustards in the small plain around Ovacık (Ovacık means "small plain"!) at the foot of the Munzur mountains.

Muş Ovası

T. Karabağ saw great bustards in summer 1956 (Kumerloeve 1961). Local people later (1964/65) confirmed the presence of the species (Kumerloeve 1967). Serter (1972) mentioned Muş Ovası as a breeding area, from which bustards leave during winter. Goriup and Parr (1983, 1985) observed 15 birds (1 adult male, 3 immature males, 11 females) 14 km east of Muş on 21.4.81, one single male 5 km north of Muş on 22.4.81 and one immature male and 5 females near Yoncalıöz Köyü, northwest of Muş, on 22.4.81. On 26.6.87 a female with two young was seen near Muş (T. Macke, M. Pietsch, *et al.*, pers. comm.). Based on documents of the General Directorate of Forestry, Huş (1974) listed Muş Ovası as a bustard area.

Bulanık/Malazgirt Ovası

Kumerloeve (1967) heard from local people (1964/64) that the great bustard occurs around Bulanık and around Malazgirt. Huş (1974) included Malazgirt Ovası in his list of Turkish bustard sites, based on information received by the General Directorate of Forestry. Van der Ven and Gheyselincx (1981) recorded six birds in the Murat river valley near Bulanık on 8.10.80. Grace, Fitzharris *et al.* (pers. comm.) saw 2 individuals there on 22.5.85, P. A. Bertilsson, E. Hirschfeld and R. Simonsson saw 3 males at Bulanık on 7.6.87 (pers. comm.), and J. Eames (pers. comm.) saw 2 males near Balotu village on 13.6.87.

Karakoçan Ovası and Basyurt Ovası

Çalışkan (1974) reported that the great bustard was formerly common in both plains, but is now found only in small numbers, especially at Basyurt Ovası around the villages of Mahmutlu and Köryusuf. N. Koch (pers. comm.) saw one female on the west side of Kurucu Geçidi to the west of Bingöl on 14.7.81.

Van Gölü

a) Records without exact locality

Kumerloeve (1967) was told by local people that the bustard occurred at Van Gölü. L. J. Dijkse and F. J. Koning (pers. comm., also Bird Report 1968-69) saw four birds at Van Gölü on 3-5.12.69 without specifying the locality. Aska (1970) says that the great bustard is common at several places in Van Province.

b) Van Gölü: south side

Goriup and Parr (1983, 1985) saw a party of 12 females near Zeve (= Zive) on 13.4.81. Local hunters claimed that the great bustard was a breeding bird and up to 1,000 birds could be seen during summer and autumn. Ch. Husband *et al.* (pers. comm.) saw an immature male between Van and Bendimahi on 24.6.85. In the same area, at Çoparlar Köyü, Ch. Bräuning (pers. comm.) observed one female, behaving as though she had young on 7.6.87. R. Jürgens *et al.* (pers. comm.) saw one bird a few kilometres north of Van on 5.6.88. Although the plain around Tatvan is small, topographically not very suitable and is mainly occupied by a military camp, it seems to have some importance for bustards. Kumerloeve (1967) noted two birds between Tatvan and Bitlis on 30.5.65, Dellmuth saw one male to the west of Tatvan on 7.5.70 (Bird Report 1970-73) and N. Koch (pers. comm.) saw two birds on the military camp on 25.6 and one on 26.6.84. Huş (1974) mentioned the Ahlat area (at the shore of Van Gölü north of Tatvan) as a bustard site, based on documents at the General Directorate of Forestry.

c) Van Gölü: north side

Kumerloeve (1969) noted 3-4 great bustards to the north of Erciş on 3.7.68 and Huş (1974) got information on the occurrence of the great bustard in the Erciş area by the General Directorate of Forestry. A. Noeske (pers. comm.) watched 2 great bustards near Sodalı Göl on 24.6.84, T. Macke (pers. comm.) 10 individuals at Göldüzü near Sodalı Göl on 8.6.86, and R. Jürgens *et al.* (pers. comm.) saw one between Sodalı Göl and Adıcevaz and 4 at Sodalı Göl on 11.6.86. R. Jürgens (pers. comm.) again saw 11 birds near on Göldüzü on 11.6.88. T. Macke, H. Pietsch *et al.* (pers. comm.) saw 3 males at the lake on Suphan Dağı.

Erçek Gölü

Records are as follows: 14.6.68: 5 birds (Kumerloeve 1969); 29.9.80: 8 birds (van der Ven and Gheyselincx 1981, van der Ven and Kasparek 1983); 10.10.80: 21 birds

(van der Ven and Gheyselinck 1981, van der Ven and Kasperek 1983); 12.10.80: 2 birds (van der Ven and Gheyselinck 1981, van der Ven and Kasperek 1983). According to local hunters a small population exists (Goriup and Parr 1981).

Yüksekova (Hakkari)

Turan (1969) mentioned this plain as a locality for the great bustard. M. v. Bechtoldsheim (pers. comm.) saw one male southwest of Yüksekova on 9.7.82.

Patnos-Tutak Ovaşı

Baysal (1977) gave a report of bustard hunting in the vicinity of Tutak in the years 1945-47. Great bustards ought to have been present from spring until the first cold days in autumn, and not rare at that time. "If a hunter wished, he would be able to shoot several bustards every day". Baysal himself for example shot 12 bustards in two years (October). Kumerloeve (1967) received information (1965) on the occurrence of the great bustard there. Five birds were seen near Patnos and Malzgirt on 19.5.75 (Bird Report 1974-75), one mature male and a party of 13 females at Yüncüler Köyü west of Patnos on 20.4.81 (Goriup and Parr 1983, 1985) and Ch. Murphy (pers. comm., see also Murphy 1984) saw three males along the same route (15 km west of Patnos) on 24.6.83. About halfway between Patnos and Malzgirt, just north of the road, Schmid and Schubert (1985) saw one male between 8 and 10.6.84. South of Tutak on the road to Patnos, E. Bezzel *et al.* (pers. comm.) noted two flying individuals on 19.6.86. As this plain has some connections with the plain of Malzgirt, see also that account.

Ağrı Ovaşı

Serter (1969) reported bustard hunting between 1950 and 1953. A report on bustard hunting in the Ağrı province cited by Serter (1972) was not available. It probably refers to Ağrı Ovaşı, perhaps to the Patnos-Tutak Ovaşı. Serter (1972) reported the birds' presence in the Ağrı Ovaşı, where they leave during the winter and come back in May, when displaying males can be seen. Bräuning (pers. comm.) saw one bird at Cumaçay to the north of Ağrı on 1.7.86.

Dogubayazıt Ovaşı

Kumerloeve (1967) recorded three great bustards between Dogubayazıt and Iğdır on 15.5.65. Asga (1972) reported that the great bustard is present in small numbers in the plains south of mount Ararat during the summer but they leave during winter. Similarly Serter (1972) states: "Breeding area, but absent during winter, leaving the area at the first cold of the first snowfall, coming back in May". Recently, R. Jürgens *et al.* (pers. comm.) recorded two individuals in the marsh north of Dogubayazıt on 18.6.86.

Aras valley at the Soviet frontier

Turan (1969) mentioned the occurrence of the great bustard at Iğdır Ovaşı. According to Asga (1972), the great bustard is a summer visitor in small numbers on the plains east of Mount Ararat (= Ağrı Dağı). M. v. Bechtoldsheim, N. Koch and M. Siering (pers. comm.) observed two females coming from the Soviet Union, 15 km west of Iğdır, on 17.6.81.

Aras valley around Horasan

Erard and Etchépar (1968) noted the great bustard in the Aras valley near Horasan on 10.6.67.

Aras valley near Kağızman

No records are available from here, but van der Ven (1982) observed the species close to it: he saw 8 birds at Turna Gölü, a very small lake east of Paslı Geçidi on 26.9.81.

Çıldır Gölü

Although the Çıldır Gölü is surrounded by relatively dissected hilly land, the great bustard occurs there. Kumerloeve (1967) refers to a local who observed 9 individuals near Kenarbel Köyü in 1964. Vielliard (1968) noted two birds there on 23.8.67.

Kars area

Kumerloeve (1967) heard from local people that the great bustard occurs in the vicinity of Kars and Göle and that four of five birds were shot near Sarkamış.

Kuyucuk Gölü

Kumerloeve (1967) saw 13 individuals on 12.11.64.

Erzurum Ovaşı

The first record of the great bustard in this area is by Calvert who mentioned the species in his list of the birds of Erzurum in 1854 (in Curzon 1854). In addition, Sandwith (1856) noted the species in the Erzurum plain in 1854. According to the hunting statistics of 1964/65, about 50-60 birds were shot in the Erzurum Ovaşı each year (Kumerloeve 1967).

Southeast Anatolian Region

Plains east of Diyarbakır

Kumerloeve (1967) was told by local people in 1964/65 of the occurrence of the great bustard around Silvan (to the north of Batman) and near Diyarbakır. A bustard hunt near Diyarbakır has been recorded (Anonymous 1979b). K. Warncke

recorded one bird east of Diyarbakır on 19.8.72 (Bird Report 1970-73) and Ch. Murphy (pers. comm., Murphy 1984) saw three males and one female with an about 10-day-old chick at Çöltepe between Bismil and Batman on 14.6.83.

Birecik area

Although there is little flat land around Birecik, north of the town, Kumerloeve (1970) heard from local people that the bustard occurs there and H. Ebenhöh *et al.* (pers. comm.) saw one bird on a hillside between Birecik and Halfeti on 1.4.83.

Urfa Ovası

The Urfa plain is not clearly separated from the huge plain along the Syrian border at Ceylanpınar - Nusaybin. The first record there is by Weigold (1913) who noted two individuals in the steppe east of Urfa on 23.4.1911. According to information from local people (1964/65, 1970) the species is present there (Kumerloeve 1967, 1970). L. J. Dijkzen and F. J. Koning (pers. comm., also Bird Report 1970-73) saw five individuals at Çamlıdere on 30.12.72. P. Thompsen and P. Jacobsen recorded four birds "between Birecik and Viranşehir" on 17.5.75 (Bird Report 1974-75).

Ceylanpınar - Nusaybin plains

Kumerloeve (1967, 1970) got information (1964/65, 1970) on the occurrence near Nusaybin and Viranşehir. The occurrence at Viranşehir is also mentioned by Turan (1969). K. Warncke saw one adult female "behaving as if she had young" to the west of Viranşehir on 14.5.75 (Bird Report 1974-75) and Goriup and Parr (1983, 1985) saw a total of 8 birds in this area on 9.4.81. The presence of bustards at Nusaybin was reconfirmed by Grace, Fitzharris *et al.* (pers. comm.) who saw one bird there on 18.5.85. In the vicinity of the Ceylanpınar state farm, situated at the Syrian border, Kumerloeve (1970b) saw three birds in May 1967 (or May 1968?) and got information that a rather good population still existed (see also Kumerloeve 1970a). In the Middle School, he saw a stuffed bird which was hunted in autumn 1967. Turan (1969) pointed out the frequency of the great bustard around Ceylanpınar. T. Gürpınar saw up to 51 individuals (mostly in groups of 4 to 11) in March 1969. M. Kuhn (pers. comm.) observed one great bustard in the steppe west of Ceylanpınar on 2.5.80 and Goriup and Parr (1983, 1985) counted a total of 45 birds (4 adult males, 22 immature males, 13 females and 6 others) during a very brief tour around the statefarm on 9.4.81. The largest group comprised 27 individuals. They were informed by the farm managers that the great bustard bred there and that during the winter, 800 to 1,000 birds might be present.

Black Sea Region

Amasya Ovası

Hus (1974) included this area into his list of Turkish bustard sites, based on

information by the General Directorate of Forestry.

Kızılırmak Deltaşı

Turan (1969) mentioned the Bafra area as a bustard site. L. J. Dijkzen and F. J. Koning (pers. comm.) saw two birds at Karaboğaz Gölü on the west side of the Kızılırmak Delta on 11.12.69.

Yeşilirmak Deltaşı

The great bustard is present around Terme and around Çarşamba according to Turan (1969).

Suşehri area

Turan (1969) listed this locality as a bustard site.

Merzifon Ovası

Turan (1969) included Suluova, close to Merzifon, in his list of Turkish bustard sites. Huş (1974) received information from the General Directorate of Forestry on the occurrence of the great bustard there. Harbard, Walsh and Fisher (1976) saw five males near Alicik, southwest of Merzifon, on 25-26.7.74 (given as four birds in Bird Report 1970-73).

Çorum Ovası

The great bustard is present at Çorum Ovası according to information from local people given to Kumerloeve (1970). In addition, Turan (1969) mentioned the Çorum area as a bustard site. M. Siering (pers. comm.) watched three females or immatures 20 km northeast of Çorum (Düvenci Ovası) on 6.8.81 and L. J. Dijkzen and A.-H. Blomert saw one bird between Çorum and Sungurlu on 9.1.88.

Çoruh valley

In the Çoruh valley near Ispir, to the north of Erzurum, the species is present according to local information (Kumerloeve 1967). At Bayburt Ovası, between Kale and Bayburt, Sandwith (1856) saw a flock of bustards at the end of 1854.

ANALYSIS OF THE GREAT BUSTARD BREEDING RANGE

A plot of all available records (Figure 1) suggests that the great bustard has apparently always been almost completely absent in the Black Sea region, probably owing to a lack of suitable habitat there: the whole region comprises steep mountains with few plain areas in between them. With hardly any exceptions, the river valleys are also narrow and do not provide suitable places for bustards. The coast falls steeply into the sea and few deltas (Kızılırmak Deltaşı, Yeşilirmak Deltaşı)

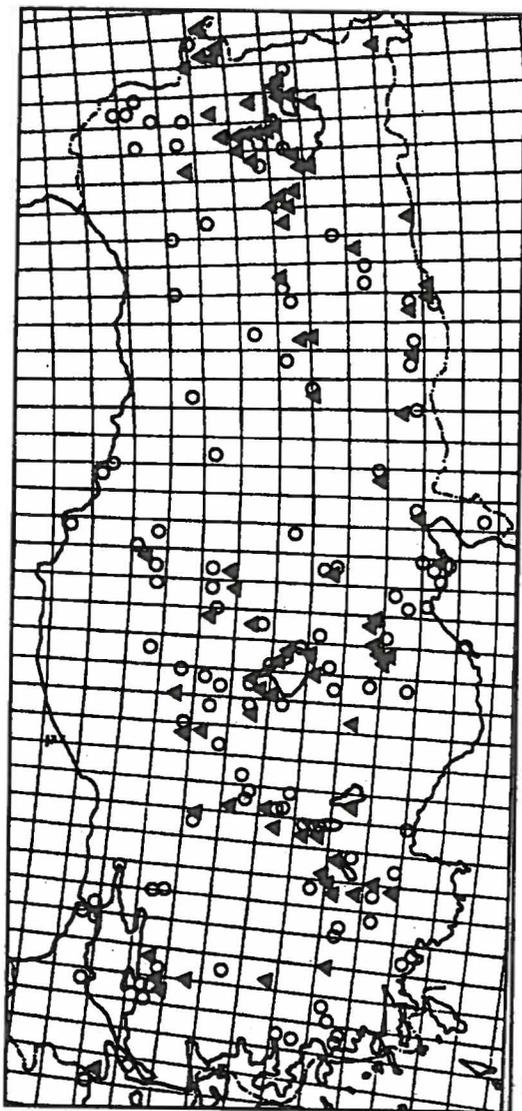


Figure 1: Range of the great bustard in Turkey, based on all available records. Breeding season (April to July) records are indicated by triangles, all other records (including undated ones) are shown by circles.

are situated along the coast line. Only in the central Black Sea region are plains found and these apparently have been bustard sites in former times.

Thrace, that is Turkey-in-Europe, has a number of large plains. However, no breeding grounds of bustards are situated there now nor seem to have been there in the past. Although occasional breeding cannot be ruled out, Thrace never seems to have been part of the main breeding range. This is surprising, as the great bustard breeds in Bulgaria and on the opposite side of the Marmara Sea. Its presence in Thrace would have been a link between the populations in Anatolia and Bulgaria.

Similarly, the whole coastal zone between the Dardanells in the northwest above the Aegean to the south coast as far as Mersin has never been a breeding area for bustards. Even the bird-watchers resident in Izmir and Aydın during the last century did not record the great bustard in the great valley plains of Gediz, Küçük Menderes and Büyük Menderes during the breeding season. Breeding apparently only occurred at Çukurova, the large plain around Adana.

The breeding range in Turkey had its western limit in the vicinity of Manyas Gölü and Apolyont Gölü (Karacabey). These areas are only slightly above sea level. At present, we do not know how close the link between this population and that of Central Anatolia was: no records exist for the several plains in between both areas, and from those areas where bustards have been observed, we do not know whether these were real breeding places or whether the bustards occurred occasionally. Thus it is possible that the population at Karacabey has been isolated from that of Central Anatolia for some time. Whereas, central Anatolia and the inner parts of the Mediterranean Region were occupied more or less completely in former days, wherever suitable habitats were found, this was not the case in the inner Aegean Region. Here, the great bustard was either absent or only very sparsely distributed.

The distribution of great bustards in eastern Anatolia is not uniform: they are very sparsely distributed in its western half, but densely distributed in its eastern half. A satisfying explanation for this cannot be offered, as there is no pronounced difference in landscape (distribution of plains) or climate. The range has a natural boundary in the north formed by the Eastern Pontic Mountains (Doğu Karadeniz Dağları) and in the south formed by the Hakkari Mountains. In the middle part of the eastern Anatolian Region, the bustard population is more or less contiguous with that of the southeast Anatolian Region. There, the main area is the Syrian Table-land along the Syrian border and some places in the floodplains of rivers (for example, of the River Tigris).

It can be seen from the above, that the boundaries of the breeding range cannot be wholly equated with natural boundaries. Breeding places of the great bustard are found from sea level (western Anatolia) up to about 1,800 m above sea level in the extreme east. Nearly all the plains of the inner Mediterranean Region,

69); 29.3.69: 1 bird (Bird Report 1968-69).

Bala Ovaşı

Serter (1972) described a bustard hunt there in about 1961, when 4-5 bustards may have been seen and shot.

Balaban valley

Ainsworth (1842) observed the great bustard near the village of Karghali (Kargılı) in the Bala area in 1839 ("plain abounded with bustards of both the large and the smaller species"). The name of the village cannot be synonymized with a modern one. He also reported of the peasants: "their horses being employed to hunt down bustards".

Akşehir/Eber Ovaları

Ainsworth (1842) saw "flocks of bustards" in the Bolvadin area on 11.11.1839. Kumerloeve (1962) noted a few birds in the area of Bolvadin - Emirdağ in June 1962. Other records are: 13./14.12.70: 3 birds at Akşehir Gölü (L. J. Dijkssen, F. J. Koning and J. G. Walmsley, pers. comm.); 21.1.71: 4 birds at Akşehir Gölü (L. J. Dijkssen, F. J. Koning and J. G. Walmsley, pers. comm.); 14.1.72: 30 birds at Eber Gölü (L. J. Dijkssen and F. J. Koning, pers. comm., also Bird Report 1970-73); 16.3.72: 7 birds at Akşehir Gölü (K. Bucher, J. Eggers, H. and I. Müller-Reich and P. and U. P. Streese, pers. comm.); 11.1.73: 9 birds at Akşehir Gölü (L. J. Dijkssen and F. J. Koning, pers. comm.); 23.2.74: 3 birds at Akşehir Gölü and 1 bird at Eber Gölü (L. J. Dijkssen and F. J. Koning, pers. comm., also Bird Report 1974-75); 4-5.9.86: 3 birds on the northern shore of Eber Gölü (Bijlsma and F. de Roder, pers. comm.). Local hunters know the bustard as an extremely rare visitor mainly in winter (Kasparek, pers. obs., 1986).

Konya Ovaşı

D. Ristow (pers. comm.) saw two birds near Horozluhan, 10 km north of Konya, on 17.4.63. L. J. Dijkssen and F. J. Koning (pers. comm.) recorded one individual at Hotamuş on 8/9.1.73. According to S. Tarhan (pers. comm.) and hunters, Konya Ovaşı is the best bustard area of Turkey. Turan (1969) also points out the importance of Konya Ovaşı for this species.

Tuz Gölü

I have divided this huge plain around the lake into two sub-areas: the west and the north to south. However, not all localities are given exactly enough to apply this scheme. Therefore, those records where only "Tuz Gölü" was named are listed first.

a) Records regarding "Tuz Gölü"

In autumn 1966 and during January, February, April, August, September and October 1967, flocks of up to 14 individuals were recorded (Bird Report 1966-67). Records in January and July 1968 and in May/June 1969 include up to 13 birds. Display was noted in May 1969 (Kitson, Porter and Vittery in Bird Report 1968-69). Other records are: 12.4.65: 1 bird (E. Wollin, pers. comm.); 20.11.69: 24 birds (L. J. Dijkssen and F. J. Koning, pers. comm.); 9.1.70: 3 birds (L. J. Dijkssen and F. J. Koning, pers. comm.); 4.5.70: 19 birds (Bird Report 1970-73); 22.11.70: 21 birds (L. J. Dijkssen and F. J. Koning, pers. comm.); 8.1.71: 32 birds (L. J. Dijkssen and F. J. Koning, pers. comm.); 15.1.72: 1 bird (L. J. Dijkssen, F. J. Koning and J. G. Walmsley, pers. comm.); 2.10.73: 4 males and 1 female (G. Easy, pers. comm.); 24.5.74: 1 bird (Ch. Carson and T. Ennis, pers. comm., also Bird Report 1974-75); 3.10.74: 7 birds (G. Easy, pers. comm., also Bird Report 1974-75); 9.5.75: 1 bird (Bird Report 1974-75). In the period 1970-73 there are more records of single birds or small parties than listed above (Bird Report 1970-73).

b) West of Tuz Gölü (Kulu Gölü, Cihanbeyli)

Ainsworth (1842) noted "flocks of bustards" in the Kulu area on 19.4.1839. Erard and Etchépar (1968) saw one pair and a group of 40 individuals near Kulu on 1.4.67. K. Bucher, J. Eggers, H. and J. Müller-Reich and P. and U. P. Streese (pers. comm.) found some bustard feathers north of Kulu on 27.3.72. L. J. Dijkssen and F. J. Koning (pers. comm., also Bird Report 1974-75) noted one bird between Kulu and Cihanbeyli on 21.2.74. On 3.5.78, D. Holman saw one individual and on 9.5.79, two individuals were seen at Kulu Gölü (Bird Report 1976-81, Kasparek 1987). Goriup and Parr (1983, 1985) saw one bird flying eastwards near Tavsançalı on 2.4.81. Turan (1969) points out that the great bustard is a breeding bird around Tuz Gölü, especially around Kulu Gölü.

c) East to south of Tuz Gölü (Şerefli Koçhisar to Sultanhanı)

Ainsworth (1842) noted "a flock of large bustards" between Şerefli Koçhisar and the lake on 19.4.1839. In summer 1895, Sarre (1896) saw bustards east of Sultanhanı several times, but did not succeed in hunting them. In 1898 or 1897 Oberhummer and Zimmer (1899) noted small parties of bustards near Aksaray, Sultanhanı and Obruk (about 33 km southwest of Sultanhanı). G. Groh (pers. comm.) saw two males at the east side of Tuz Gölü on 19.5.71. K. Bucher, J. Eggers, H. and J. Müller-Reich and U. P. Streese (pers. comm.) saw 10 individuals (including at least three males) on 26.3.72. L. J. Dijkssen and F. J. Koning (pers. comm.) noted 8 birds 15 km south of Şerefli Koçhisar on 14.12.72. On the "east side of Tuz Gölü" they recorded 5 birds on 10.1.73 and 6 on 21.2.74 (pers. comm., also Bird Report 1974-75). Lehmann (1974) found a great bustard egg within a colony of herring gulls *Larus argentatus*, on an island in Tuz Gölü in spring 1972. One bird was seen at the south end of Tuz Gölü on 3.5.77 (Bird Report 1976-81). Van der Ven and

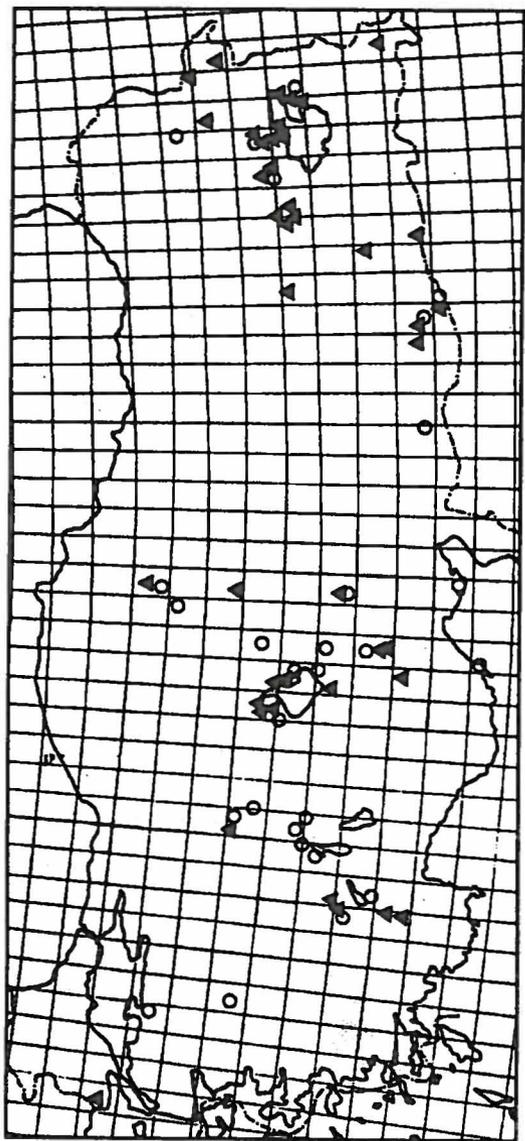


Figure 2: Present distribution of the great bustard in Turkey based on records from 1974 to 1988 inclusive. Breeding season (April to July) records are indicated by triangles, other records by circles.

of inner Anatolia, southeast Anatolia and the extreme east of Anatolia are breeding sites (or former potential breeding sites), but the species is more or less absent from the plains along the coasts, the inner Aegean Region and the western parts of the east Anatolian Region. Only in the case of the Black Sea Region, does their absence seem to be clearly due to the lack of suitable habitats.

Present distribution

At present, the great bustard is confined to two main areas: central Anatolia and east/southeast Anatolia (Figure 2). No recent records are available for areas in between. Apart from these populations, there are two records from the Marmara Region. Although one, at the Meriç Delta, is from April and involved two males, breeding seems unlikely. Only a few records are available from previous years and they all fall during the winter. The other record comes from Manyas Gölü. Special attention has to be paid to this area in the future. In former times, about the 1930s, this was a well-known breeding area and a small breeding population remaining there even now cannot be ruled out, although the most recent record was only of a group of immature males (Goriup and Parr 1983, 1985).

Breeding apparently occurs in the plains of the upper Sakarya River around Çifteler. In the vast plains around Tuz Gölü, the great bustard certainly still breeds. However, this is assumed on the basis of the number and the season of records: no place where displaying males, nests or females with young can be seen regularly is known. In particular, the areas to the west of Tuz Gölü around Kulu and in the east around the village of Ulukışla should be searched for breeding places.

Another breeding place is apparently at Malya Ovaşı where Seyfe Gölü is situated. Although only there is one autumn record during the last decade, reliable information from local people puts breeding beyond doubt. The area most suitable for bustards within the Malya plain would be to the north of Seyfe. Some immature males at Sefaattli (Yenipazar) in 1981 presumably belonged to the population at Malya Ovaşı.

At Develi Ovaşı (Sultan Marshes) the probability that great bustards still breed is rather low. Displaying males were last seen in 1979. The intensive birdwatching activity in the area during recent years should have yielded more records than are available, if there really was a breeding population present. However, the plain around Gölcük, towards Niğde to the south of the Sultan Marshes, urgently needs a survey for this species, as the individuals appearing in the Sultan Marshes may come from there.

The situation at Ereğli Ovaşı is also difficult to judge. An observation of a male near Çakmak seems encouraging. Breeding appears to be unlikely around Akgöl, which is continuously visited by birdwatchers, but may occur in the northeastern part of the plain towards Bor which is usually passed over by ornithologists.

The situation at Konya Ovaşı is similarly unclear. There are no records from the last decade and only two records from earlier years. However, many hunters describe that plain as one of the best bustard sites in Turkey and the area looks so suitable for bustards to the human eye that this statement seems beyond doubt.

At Acıgöl, breeding may still occur. The most recent breeding season record is from 1988. Some records come from areas south of Acıgöl, such as Söğüt Gölü and Karataş Gölü, so breeding at one of these places cannot be ruled out.

The great bustard certainly still breeds in southeastern Turkey in the large plain south of the line Urfa/Akçakale - Nusaybin. Recent records confirm the presence of the species there. However, the area is difficult to access or inaccessible in most of its parts, being the border area to Syria. So, birdwatchers can be only active at a few points like Ceylanpınar and the great bustard remains under-recorded. Good places seem to be for example in the west of Ceylanpınar near Gümüşsuyu as along the borderland up to Akçakale. The occurrence in southeast Turkey includes the valley of River Tigris (Dicle Nehri) where breeding was proven in the Bismil area in 1983. This is the only breeding record from Turkey during the last decade.

A fairly good number of bustard records stems from Eastern Turkey. They are concentrated at Muş Ovaşı (Karasu Valley) and in the northeast of it, in an area confined by the towns Malazgirt, Patnos, and Tutak (Valley of River Murat and its tributaries). Also at some places around Van Gölü (Gevaş, Şodali Göl, Erçek Gölü), the occurrence was confirmed during the last decade, in some cases even recently.

In the marshes north of Dogubayazıt at the foot of Mount Ararat (Ağrı Dağı) and the plain north of this mountain (İğdır Ovaşı), bustards are still occurring. One record regards a bird coming from the Soviet Union and demonstrates clearly the overlap of the population between both countries.

One recent record at Yüksekova in the Hakkari Mountains cannot be interpreted as it is the only one there, even older records are missing.

Seasonal movements

It is evident from some records outside the breeding range (e.g. near Istanbul and Ankara) that there is some movement especially during winter. The date of observation is not known exactly in all cases, but the records furthest away from the breeding grounds occur in December and January (see Figure 3). These records have been superimposed on a map of the mean temperatures during January, taken from the Harita Genel Müdürlüğü (Yeni Türkiye Atlası 1977). Three temperature classes were used: areas with mean temperatures below -8°C , areas with mean temperatures between -8°C and 0°C and areas with mean temperatures higher than 0°C . With very few exceptions, all records of the great bustard are within those areas where the mean temperature in January does not

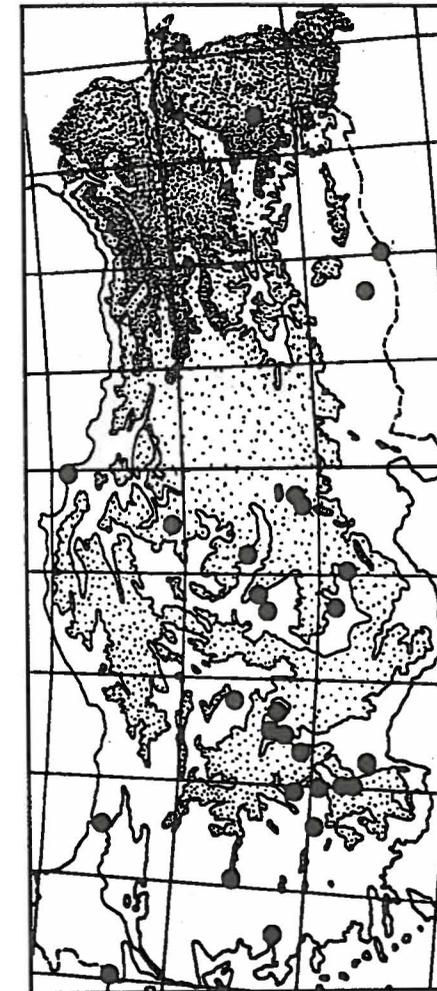


Figure 3: Winter distribution of the great bustard in Turkey. Large dots show records from December and January; triangles indicate areas vacated by bustards during the winter.

-  Area where mean January temperature is below -8°C
-  Area where mean January temperature is between -8°C and 0°C
-  Area where mean January temperature is above 0°C

fall below freezing point! Even in Inner Anatolia, areas with frost are avoided, and warmer places within this region are preferred. This finding is supported by the evidence of Serter (1972), who stated that the Ankara region (which is on the border of the 0° isotherm), bustards are present throughout November and December, but leave during January. The regular observations of A. Vittery at Mogan Gölü in the Ankara District show that bustards are present again from the end of February onwards.

The coverage of Turkey by birdwatchers is rather limited and takes place mainly in the western parts of the country and in the warmer seasons. A high proportion of the winter records, for example, stem from the winter counts carried out by L. J. Dijkzen and F. Koning. However, eastern Turkey was (with one exception) not included in the winter counts. This poor coverage must be taken into account when looking at the distribution of bustards during winter. However, resident hunters in the areas of Sivas, Muş, Tutak, Ağrı, Dogubayazit, and the Aras Valley east of Mount Ararat say that great bustards occur only in summer, and leave during the first cold days of autumn, returning in May. The existence of this migration pattern is also supported by records from Greece. During the last century, great bustards appeared on the Cyclades islands, on several occasions during winter (Bauer *et al.* 1969).

THE LITTLE BUSTARD

Occurrence of the little bustard

İstanbul area

Rigler (1852) mentioned the little bustard in his list of the birds of İstanbul and also mentioned that the species was eaten: he probably saw the species only on the market. Taylor (1872) included the little bustard in the list of birds which he saw in the markets of Pera (İstanbul) in the years 1854-1855. According to Mathey-Dupraz (1923), the little bustard was an irregular winter visitor in İstanbul. He saw three individuals between Şişli and Zincirlikuyu ("Chichli" and "Zindjirli Kou-louk") in the middle of January 1889. Between mid-December and the end of January, he saw bustards in poultry shops. The American College at Bebek had one male and four females in its collection (Mathey-Dupraz 1923). Moreover Braun (1908) stated that the little bustard "Can often be found in the game shops of İstanbul".

Karacabey - Bursa area

This was where Vasvari (1938) found the species common in August 1936 and May 1937. In spring, seven displaying males were shot in an area of about 60 ha. Vasvari himself confirmed breeding and from others he learnt that the little bustard was common especially during autumn (Vasvari 1938, Keve 1971). Schweiger (1965)

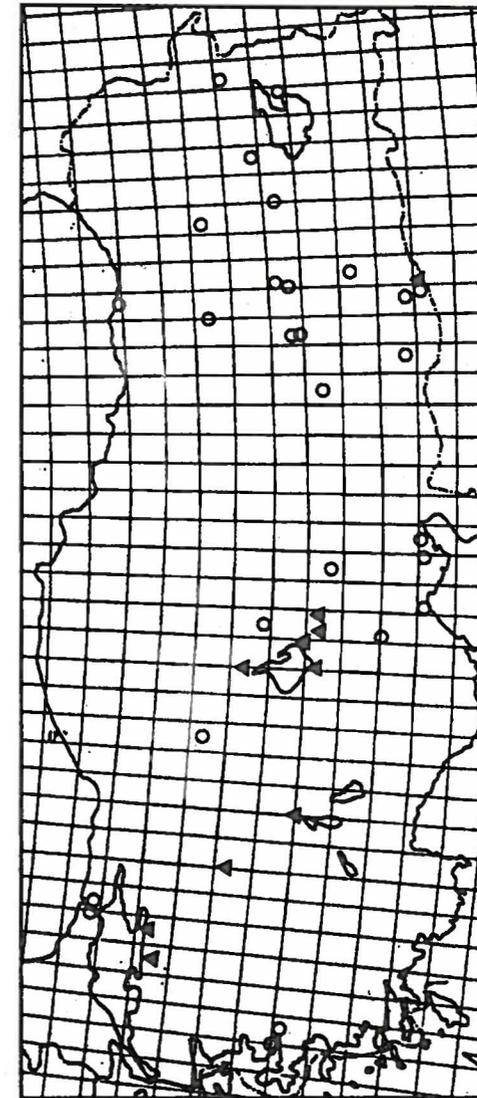


Figure 4: Distribution of the little bustard in Turkey based on all available records. Breeding season (15 April to 31 July) records shown by triangles; all other records indicated by circles. There are very few recent records from Turkey.

saw a male at Görükle between Karacabey and Bursa at the beginning of May 1962. From the local forestry mission he was informed (in 1959) that the little bustard was a rare, but regular visitor of that area. From the Karacabey area, Kumerloeve (1970) got information on 66 hunted little bustards (but gives no further details). Goriup and Parr (1983, 1985) were informed by local people in 1981, that the little bustard still occurred in the area.

İzmir area

Strickland (1836) reported that the little bustard was "abundant during winter in the poultry shops" of İzmir. It was also seen by von Gonzenbach (1857, 1858, 1859, 1860). A female which he collected near İzmir on 20 December 1865 and a male which he collected there in February 1863 were sent to Dresser's private museum (Dresser 1872). The little bustard clearly occurred in this area from the beginning of December to mid-February. Von Gonzenbach also reported the regular occurrence of the species on the great plains of Menemen during winter where, for example he saw one individual on 9 November 1856. Krüper (1875) did not want to rule out the breeding of the little bustard in the "great plains" but noted "this is not confirmed". Krüper and Hartlaub (1875) made a similar statement and pointed out that the species "is hunted every winter". They mentioned two stuffed birds in the museum of Athens from the İzmir area, one of 23 December 1858, the other of 5 September 1860. One bird which was shot on a plain near İzmir on 18 November 1979 is now in the collection of the Ege Üniversitesi İzmir (Sıkı 1982, Kasperek pers. obs.).

Inner Anatolia

Ainsworth (1842) saw the little bustard near the village of Kargılı (exact location unknown) in the Kırşehir area in 1839. Danford (1880) noted this species at "Baluk Kujundje" in April 1879. This locality cannot be transliterated on a modern map, but from Danford's itinerary it should be Temelli/Ankara or a village close to it. B. Korf collected four males and three females at Ereğli/Konya in December 1931 (von Jordans and Steinbacher 1948). Wadley (1951) met a pair south of Tuz Gölü on 21 April 1946 and Maas Gesteranus (1959) one on the shore of Tuz Gölü on 30 June 1961. Maas Gesteranus recorded one more "in the steppe between Ankara and Kayseri" (he travelled via Beynam and Kırşehir) on 21 July 1951. Ganso and Spitzer (1967) saw two individuals in marshland near Aksaray on 14 July 1966. A decomposing bird was found at Karamık Sazlığı by A. J. Gaston on 12 July 1969: it might have been newly fledged (Bird Report 1968-69). A. J. McNeill saw five individuals on a mountain-side near Kütahya on 17 May 1970 (Bird Report 1970-73). K. Warncke met a female 20 km east of Aksaray on 23 May 1972 (Bird Report 1970-73) and R. Akçakaya, S. Barış and C. Bilgin saw one bird in the steppe near Ovaçiftlik in the Sultan Marshes on 31 October 1982 (pers. comm.,

also Kasperek 1985). According to S. Tarhan (1983), the little bustard still occurs at Konya Ovaşı.

Seyhan/Ceyhan lowland (Çukurova)

Ainsworth (1842) wrote in his journal after leaving Adana on December 1839: "As we travelled over the plains beyond, we observed flocks of many thousand small bustards". Schrader (1891) recorded the little bustard at Mersin in the years 1882-85 as a winter visitor, "not uncommon and usually in pairs". Huş (1974) wrote that the little bustards spent the winter near Mersin, Adana and Yakapınar (Misis).

Erzurum Ovaşı

Dickson and Ross (1839) noted the little bustard as very common on the ploughed fields and around the edges of the marshland of the Erzurum plain. They wrote that the birds arrived in September and departed in the middle of November. Furthermore, Calvert included the little bustard in his list of the birds of Erzurum (Curzon 1854) and Sandwith (1856) watched the species in 1854. It was "not uncommon" at Erzurum Ovaşı in the 1910s and was "much sought after by gunners", according to McGregor (1917). In the 1960's, Kumerloeve (1967) was told by local people that the little bustard occurred in the area.

Urfa and Ceylanpınar Ovaları

Tristram found the little bustard in the neighbourhood of Urfa in 1881 according to Weigold (1913) and Kumerloeve (1961), but Tristram himself did not mention this species in his report (Tristram 1882). Misonne (1956) met the little bustard in the Urfa area in 1955. Kumerloeve (1967, 1970) heard from local people that the species once occurred around Urfa, Viranşehir and Ceylanpınar, but had disappeared. Other information from local people on the occurrence at Ceylanpınar were treated with suspicion by Kumerloeve. However, T. Gürpınar observed small flocks between Urfa and Ceylanpınar in March 1969, and on one occasion, he saw a party of 119 (an astounding observation) in the Gümüşsuyu area west of Ceylanpınar (Bird Report 1968-69). Goriup and Parr (1983, 1985) saw two males in summer plumage at Ceylanpınar on 19 April 1981.

Eastern Anatolia

A collection of birds of the Trabzon area by Abbott (1834) contained little bustards, and Chantré (1883) collected it in the area of Diyarbakır. Kumerloeve (1967) was informed by local people that it occurred in the areas of Diyardan (southeast of Ağrı), Malatya, Elazığ and Muş; for example, at Cencige (Erzincan) in 1951, and in January 1958 a freshly shot bird was seen at Gavur Gölü (Elazığ). Further evidence of the occurrence of little bustards in the Elazığ-Bingöl area comes from Çalıskan (1974). He stated that the species had been common at

Basyurt Ovaşı and at Karakoçan Ovaşı, but was now rare, although still found mainly around the villages of Mahmutlu and Köryusuf of Basyurt Ovaşı. Aska (1870) wrote that the little bustard was present in the Van area, but in small numbers, leaving the area in October. One record near Tatvan on 19 November 1971 is not without doubt (M. Jennings, pers. comm.), although it was listed in the Bird Report (1970-73) without any comment. Goriup and Parr (1983, 1985) saw one mounted specimen of a male in the Van hunters' club room and were informed by local people in 1981 that the little bustard was still present in the Bulank area.

Analysis and discussion of distribution

From the classical breeding area of the little bustard (Figure 4) in the vicinity of Karacabey, western Anatolia, where Vasvari found up to seven displaying males on 60 ha in the 1930s, the latest record stems from the 1960s. Although some evidence for the bird's presence was obtained again in 1981, the species seems to have largely disappeared from there. In eastern Anatolia, the little bustards was not rare in the Erzurum plain at least until the 1910s. After then, there is only one observation by a hunter, without any details. Today, no breeding places of the little bustard are known, and only a few modern records from the breeding season exist. Nevertheless, it does not seem impossible that the little bustard still breeds perhaps irregularly at a few places in central, eastern and southeastern Anatolia.

POPULATION TRENDS IN AND PROTECTION OF BOTH BUSTARD SPECIES

There are no precise data on population changes. A report on the *Present situation of the hunting resources of our country* (Anonymous 1979) stated: "The numbers of the great bustard and the little bustard ... are decreasing quickly". Turan (1969) wrote in a report on the great bustard that a decline of the population had been noted "especially during the last five years". Hunters in particular have bemoaned the declining populations (e.g. Baysal 1977, Çalıskan 1974), although hunting has been blamed for the decline (Sarıyüce 1982). The times when great bustards were sold in the markets of Istanbul and Izmir (Rigler 1852, Strickland 1836, von Gonzenbach 1858, 1860, Taylor 1872, Braun 1908), have long since passed. In fact, even at that time, von Gonzenbach (1852) expressed concern about the decrease of "both bustards" as a consequence of hunting.

As described above (and see Figures 1 and 2), the area of distribution of the great bustard has diminished considerably, especially at the edges of the former range. At places where bustards occurred in small populations or only occasionally, no recent records exist. Moreover, many wintering grounds along the coasts have also been abandoned during the last few years. One of the main reasons for the decline is certainly hunting. In former times, like in the 1940s and 1950s, the

great bustard was protected by law only during the breeding season: hunting was completely forbidden from March to August (Banoğlu and Burr 1952). Since the 1970s, the great bustard has been protected throughout the year. In spite of this protection, illegal hunting is a serious threat to the species.

Another important threat is the rapid change in the use of agricultural land. Steppe areas and dry meadows which were once used as pasture for sheep and cattle, are being rapidly changed into fields, and wetlands are being drained at an alarming rate. This kind of agricultural reform is taking place in all parts of the country, but much faster in the west than in the east. Another factor in the change of agricultural land-use is the application of high levels of pesticides and fertilizers. Although we cannot clearly demonstrate their influence on bustards, it is beyond doubt that they have an important impact on the remaining populations.

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