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# *Gazella dorcas*

(Linnaeus, 1758)

(Engl) Dorcas gazelle
(Fre) Gazelle dorcas

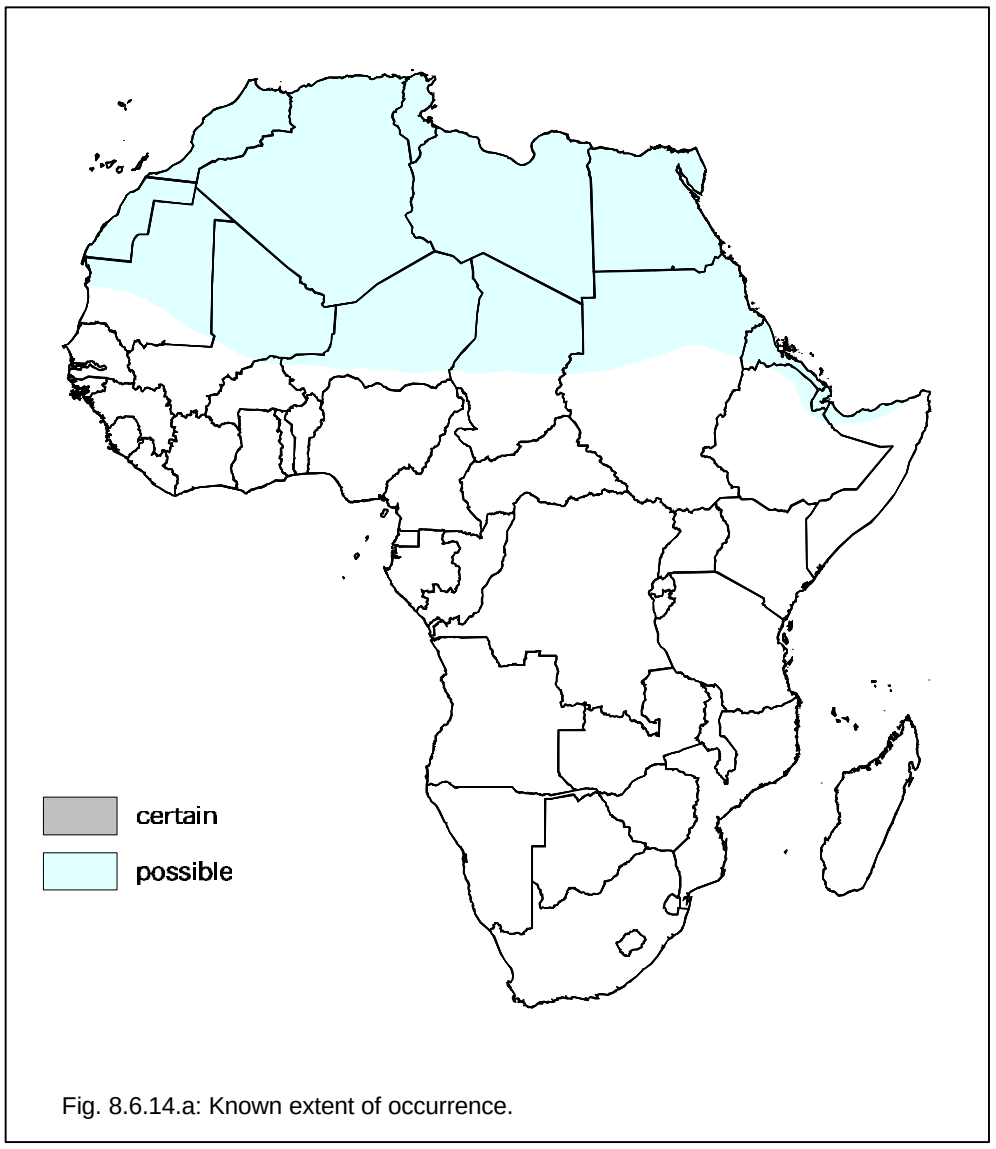


Fig. 8.6.14.a: Known extent of occurrence.

**Taxonomic notes**
Six subspecies are listed by Yom-Tov et al. (1995) in their review.

**IUCN threat category**
Lower Risk, near threatened (LR:nt) as *G. dorcas,* but Vulnerable (VU: criteria C1) as *G. d. pelzelni* (Pelzeln's gazelle) in Djibouti and Somalia.

**Available information**
Most of the studies on the ecology of this species were conducted in Israel (Baharav, 1980, 1982; Ward & Saltz, 1994) and information on this species in the African continent mainly concerns its status. Notes on the main aspects of its ecology are found in Newby (1984), and Funaioli (1971). Essghaier & Johnson (1981) investigated its territorial behaviour, while population structure and density in a protected area in Morocco are analysed by Marraha (1996). Status, threats and distribution in Morocco are discussed by Aulagnier & Thévenot (1986), Cuzin (1996), and Loggers et al. (1992). Updated data on its presence and status are also available for Ethiopia and Eritrea (Yalden et al., 1996) and Egypt (Osborn & Helmy, 1980; Saleh, 1987). Jones (1973) describes the situation of the mammalian fauna, including this gazelle, in the W National Park (Niger). A very detailed and updated review of the literature available on the ecology of the species is given by Yom-Tov et al. (1995). General information on the species' ecology and distribution are also found in Kingdon (1997). East (1988, 1990) discusses status and distribution in each country in which the species occurs; the author also gives some information its ecology, particularly on its habitat requirements.

**Known extent of occurrence**
According to East (1996), the dorcas gazelle still ranges in Algeria, Burkina Faso, Chad, Djibouti, Egypt, Eritrea, Ethiopia, Libya, Mali, Mauritania, Morocco, Niger, Somalia, Sudan, Tunisia and Western Sahara; its occurrence in Nigeria is very doubtful, while it is considered extinct in Senegal. Its geographical distribution was acquired from Yom-Tov et al. (1995). After Dr. R. East's revision (23 June '97) of the map, the entire range was marked as "possible presence" and the southernmost edges were corrected according to country maps in East (1988) and East (1990) (Fig. 8.6.14.a).

**Categorical-discrete (CD) distribution model**
The species occurs in grassland and steppe, in wadis and mountain desert and in semi-desert vegetation. It is not well adapted to life in absolute desert (Osborn & Helmy, 1980; Loggers et al., 1992; Haltenorth & Diller, 1980; Kingdon, 1997; East, 1988, 1990; Yom-Tov et al., 1995).
Based on these environmental preferences, the following scores were assigned (Fig. 8.6.14.b) (8.6.14.a):

Score

1 Grasslands, shrublands, semi-desert vegetation, stony and mountain deserts and their mosaics.

2 Sandy desert and woodland mosaics and transitions.

3 Forests; woodlands and croplands.

| suitable | | moderately suitable | | unsuitable | | Total | |
|---|---|---|---|---|---|---|---|
| $km^2$ | % | $km^2$ | % | $km^2$ | % | $km^2$ | % |
| 5 406 866 | 52 | 4 569 212 | 44 | 358 513 | 3 | 10 334 591 | 100 |

Tab 8.6.14.a: Cumulative size ($km^2$) of areas pertaining to each environmental suitability class within the Extent of Occurrence.

| | Number Patches (NP) | Mean Patch Size (MPS) $km^2$ | Patch Size SD (PSSD) $km^2$ | Largest Patch Index (LPI) % | Mean Shape Index (MSI) | Area-Weighted Mean Shape Index (AWMSI) |
|---|---|---|---|---|---|---|
| **suitable** | 881 | 6 139 | 163 781 | 48.72 | 1.22 | 9.08 |
| **moderately suitable** | 809 | 5 644 | 148 299 | 42.3 | 1.3 | 10.02 |
| **Total AO** | 209 | 47 728 | 686 958 | 99.8 | 1.2 | 4.35 |

Tab 8.6.14.b: Area of Occupancy fragmentation indexes.

**Probabilistic-continuous (PC) distribution model**
The output of the probabilistic-continuous (PC) distribution model is shown in Fig. 8.6.14.c.

**Validation**

| % of EO in sample areas | Number of valid plots | Index of Accordance (%) |
|---|---|---|
| 6.51 | 128 | 55.47 |

Tab 8.6.14.c: Categorical-discrete (CD) distribution model validation parameters.

**Comments and conservation issues**

As for the other gazelles of the Sahara region, this species has a wide EO covering most of North Africa, but its actual presence is dictated more by hunting and poaching than by habitat suitability. Nevertheless the Index of Accordance (55.47%) of the CD model allows for the following comments: the EO appears largely suitable, and shows limited fragmentation. The models also show that suitable areas are found regularly over most of the EO, well into Eritrea and Somalia. The species is the most common of the desert gazelles and is considered Lower Risk in the IUCN threat category system. However, a more detailed analysis of the true presence patterns throughout the range is necessary for a more realistic assessment of its conservation status.

| SUITABILITY CLASS | inside | outside | Total |
|---|---|---|---|
| **suitable** | 2.88 | 49.43 | 52.32 |
| **moderately suitable** | 3.09 | 41.12 | 44.21 |
| **unsuitable** | 0.02 | 3.45 | 3.47 |
| **Total** | 5.99 | 94.01 | 100 |

Tab 8.6.14.d: Percent of environmental suitability classes within EO (as obtained from the categorical-discrete distribution model) inside and outside the protected areas.

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