

Proteles cristatus

(Sparrman, 1783)

(Eng) Aardwolf
(Fre) Protèle

Taxonomic notes

The aardwolf may be divided into two subspecies on the basis of their disjunct distribution: *P. c. cristatus* in Southern Africa and *P. c. septentrionalis* in east and north-east Africa (Koehler & Richardson, 1990; Kingdon, 1997).

IUCN threat category

Data Deficient (DD) as *P. cristatus* stock in Burundi, C.A.R. (?), Egypt, Eritrea, Ethiopia, Kenya, Somalia, Sudan, Tanzania, Uganda.

Available information

Most of the literature available concerns the species' ecology in Southern Africa.

Southern Africa: Authors have mainly researched the species in South Africa. Feeding habits have been deeply investigated (Cooper & Skinner, 1979; Richardson, 1987a, 1987b; Richardson & Levitan, 1994). Bothma & Nel (1980) report data on the species' feeding ecology in the Namib Desert, and analyse the coexistence with potential competitors; notes on its diet in Botswana are given in Smithers (1971). Space use and social behaviour have been analysed by Nel & Bothma (1983), Richardson (1984) and Skinner & Van Aarde (1985). Most of these authors give a description of the habitat in which ardwolves are found, particularly Richardson (1984). A complete review of the information available on the species' ecology in the subregion is given in Mills & Hes (1997) and Skinner & Smithers (1990). Data on the species is available for most of South Africa (Bruton, 1978; De Graaff & Rautenbach, 1983; Lynch, 1983, 1989; Pringle, 1977; Rautenbach & Nel, 1978; Rowe-Rowe, 1978, 1992; Stuart, 1981); Angola (Crawford-Cabral, 1989), and Namibia (Viljoen, 1982).

East Africa: Kruuk & Sands (1972) thoroughly investigated diet and the foraging behaviour of this species in the Serengeti Plains (Tanzania). Coexistence with other small carnivores was analysed by Waser (1980). Data on the species' presence are available for Ethiopia, Somalia, and Eritrea (Corbet & Yalden, 1972; Funaioli, 1971; Yalden et al., 1980, 1996). Some data on the species' ecology and distribution is also available for Egypt (Osborn & Helmy, 1980). A complete review of the literature available on the species and a map of distribution are found in Koehler & Richardson (1990).

General information on the species' ecology is found in Estes (1991), Kingdon (1997) and Stuart & Stuart (1997).

Being a specialized ant-eater, the aardwolf is threatened by the use of insecticides, and is therefore included in the South African Red Data Book (Smithers, 1986).

Known extent of occurrence

The aardwolf occurs in two discrete populations: the southern one in South Africa, Botswana, Zimbabwe, Namibia, south Angola, south Mozambique and south Zambia; the other extending from central Tanzania to extreme southern Egypt, through Kenya, Somalia, Ethiopia and eastern Sudan (Koehler & Richardson, 1990). Its geographical range was obtained by overlapping maps from Haltenorth & Diller (1980) and Koehler & Richardson (1990). The map was then revised and updated by Dr. M.G.L. Mills (Fig. 3.4.4.a).

Categorical-discrete (CD) distribution model

The species occurs primarily in open grassy plains, but also in savanna woodlands. It is not recorded from Miombo woodland (Skinner & Smithers, 1990; Koehler & Richardson, 1990; Kingdon, 1997; Osborn & Helmy, 1980; Estes, 1991).

Based on these environmental preferences, the following scores were assigned (Fig. 3.4.4.b) (Tab. 3.4.4.a):

Score

- 1 Grasslands, shrublands and their mosaics.
- 2 Dry woodlands, woodland mosaics, bushlands and thickets and semi-desert vegetation.
- 3 Miombo woodlands; forests; deserts and croplands.

suitable		moderately suitable		unsuitable		Total	
km ²	%	km ²	%	km ²	%	km ²	%
2 349 586	37	1 896 033	30	2 139 595	34	6 385 214	100

Tab 3.4.4.a: Cumulative size (km²) 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	2 087	1 125	35 675	38.03	1.34	11.63
moderately suitable	2 560	741	17 038	18.41	1.32	15.11
Total AO	1 167	3 638	84 221	51.78	1.26	17.5

Tab 3.4.4.b: Area of Occupancy fragmentation indexes.



Fig. 3.4.4.a: Known extent of occurrence.

Probabilistic-continuous (PC) distribution model

The output of the probabilistic-continuous (PC) distribution model is shown in Fig. 3.4.4.c.

Validation

% of EO in sample areas	Number of valid plots	Index of Accordance (%)
9.27	100	57.00

Tab 3.4.4.c: Categorical-discrete (CD) distribution model validation parameters.

Comments and conservation issues

The known EO does not match the output of the two models very precisely and only 37% is classified as suitable and another 30% as moderately suitable. Nevertheless the environmental suitability appears adequately supported by the Index of Accordance (57%). The species is very elusive and the EO may have drawn on scanty and/or poor data. The northern part of the EO appears more fragmented and of less overall suitability than the southern part, and the largest continuous patch is found there. The overall fragmentation of the AO is high as indicated by the number of total AO patches and the comparison of the two shape indexes. The existing protected areas include about 10% of the AO.

The species is correctly classified by the IUCN threat category system as Data Deficient: our results confirm the poor quality of the available data and the need for further research.

SUITABILITY CLASS	inside	outside	Total
suitable	2.75	34.05	36.80
moderately suitable	3.10	26.59	29.69
unsuitable	3.57	29.94	33.51
Total	9.42	90.58	100

Tab 3.4.4.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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