Population status of the Persian Leopard (*Panthera pardus saxicolor* Pocock, 1927) in Iran

by Bahram H. Kiabi, Bijan F. Dareshouri, Ramazan Ali Ghaemi, and Mehran Jahanshahi

Abstract. The range of the Leopard is still known to include large areas of Iran. Data have been gathered mainly at nine sites since 1976. The results show that there are about 550–850 specimens in Iran, some 55% of which live in protected areas.

Kurzfassung. Die Verbreitung des Leoparden schliesst weite Teile des Iran ein. Aktuelle Daten seit 1976 wurden vor allem in neun Gebieten gesammelt. Die Ergebnisse zeigen, dass im Iran noch etwa 550–850 Leoparden leben, 55% davon in Schutzgebieten.

Key words. Large cats, distribution, zoogeography, threatened animals, Persia, Middle East.

Introduction

The Leopard (*Panthera pardus*) is well known and widely distributed in Iran. There are several places in Iran with the Persian (Farsi) name of Palang-Kuh, which means leopard mountain (Palang = leopard and Kuh = mountain).

Iranian Leopards are very variable in size and colouration: both heavy and pale specimens as well as light and dark specimens are found in different localities. NOWELL & JACKSON (1996) recognize three subspecies occurring on Iranian territory: *P. p. saxicolor* Pocock 1927, *P. p. dathei* Zukowsky 1964, and *P. p. ciscaucasica* Satunin 1964. However, according to MITHTHAPALA (1992), *P. p. dathei* is not a valid name, and *ciscaucasica* seems to be a synonym of *saxicolor*. It therefore seems that both the smaller and darker Leopards of the south and the larger and paler Leopards of the north are all better referred to as *saxicolor*.

The aim of this study was to collect information on the status of the Leopard in Iran, to make a rough assessment of the population size, and to identify the reasons for the decline of the species in this country.

Methods

Starting in 1976, one of us (B. H. KIABI) organized a survey among game wardens and hunters to obtain information on Leopard distribution and abundance. The interviews were conducted mainly by ourselves and also by some of our undergraduate and graduate students all over the country. The results of the interviews may be regarded as "guestimates", combining substantiated estimates with guesses of the population size, often taking the size of potential habitats into

Zoology in the Middle East 26, 2002: 41–47.
ISSN 0939-7140 © Kasparek Verlag, Heidelberg

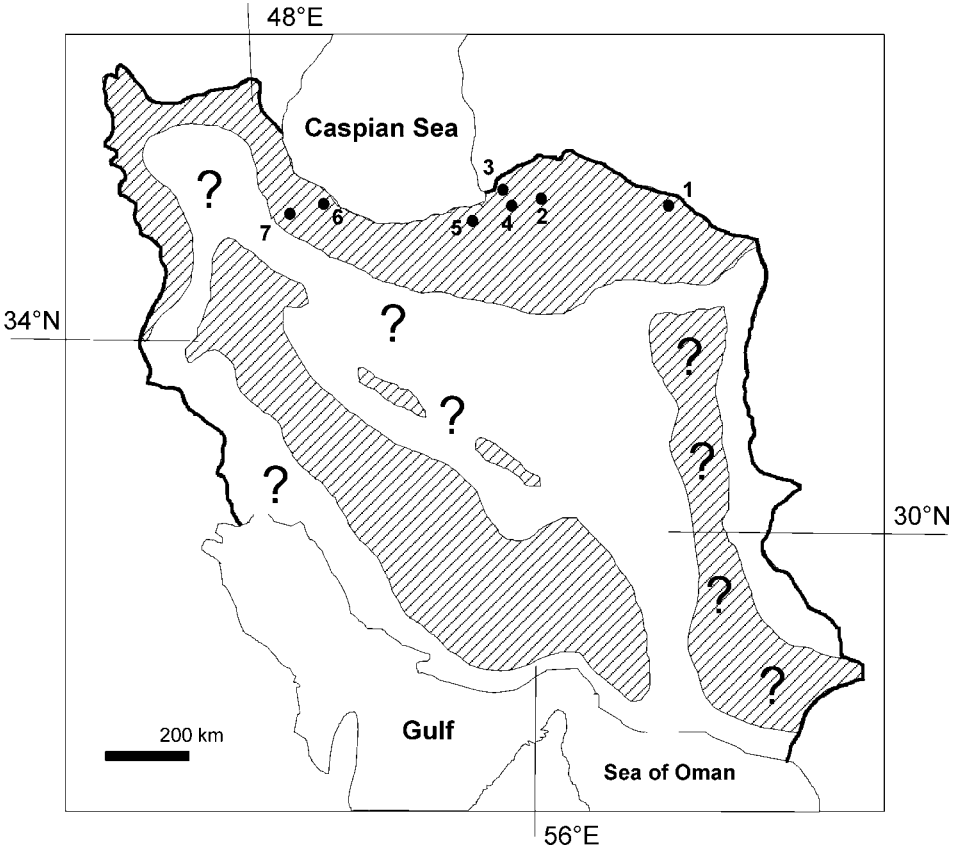

Fig. 1. Distribution of the Leopard in Iran. Numbers refer to important areas with Leopards in Iran (see Tab. 1 for the sites' names).

account. Most field observations were made during the winter seasons when the large cats are quite active during day time, searching for mates. Population distribution and abundance were also determined by means of mapping defecation sites and scat freshness levels. Photos and measurements were taken of live and dead specimens whenever possible.

Results and discussion

The total area of the Leopard's distribution range is around 885,300 km². Put another way, leopards live in 50% of the total land mass of Iran.

Tab. 1 gives preliminary data on the abundance of the Persian Leopard in Iran. According to this information, there are nine important or major localities for the Leopard in Iran (Fig. 1), most of them within protected areas. For the time being, there are about 550-850 Leopards in Iran (the rounded total of figures given in Tab. 1). This figure is not a population census, but a first guess. This figure of course may be disputed, and there is no agreement on the abundance and distribution of the Leopard among zoologists in this country (which is

Fig. 2. A large male Leopard killed on the road at Golestan National Park in 1997. Photo: M. JAHANSHAHI.

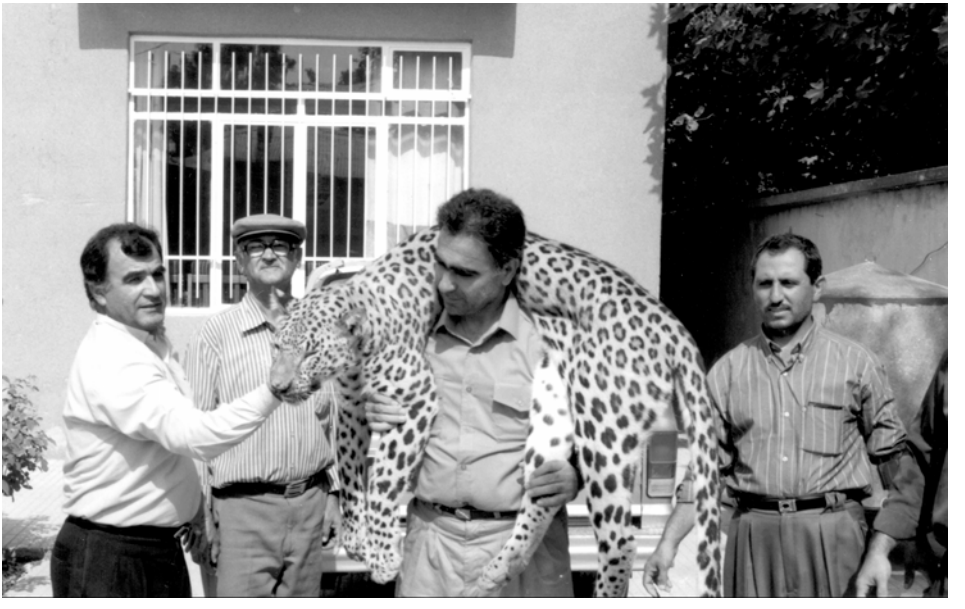

Fig. 3. A male Leopard shot in Turkman Sahra, next to the border with Turkmenistan (Chapar-Ghoymeh), in 1995. Photo: R. A. GHAEMI 1995.

Fig. 4. A young Leopard shot in Ramsar, 1994. Photo: H. VARASTEH.

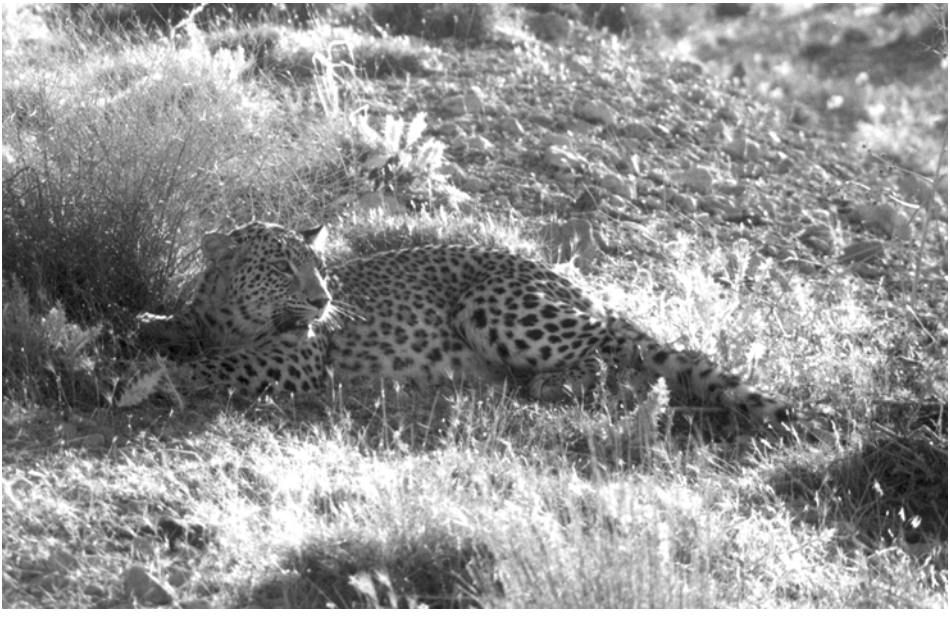

Fig. 5. An average size male Leopard, Bamu National Park, 1995. Photo: B. F: DARESHOURI.

Tab. 1. Rough estimation of the present population of the Persian Leopard in Iran.

A. Better studied area (about 3300 km²).

no.	locality	population size	main threats
1	Tandoreh National Park	12–18	none
2	Golestan National Park	30–45	road kill
3	Chapur-Ghoymeh	4–6	shooting to protect livestock
4	Safee Abad-Dozain (Minoo Dasht)	5–10	shooting to protect livestock
5	Jahan Nama Protected Area	6–10	none
6	Ramsar	5–10	shooting to protect livestock
7	Darestan-Rudbar	10–15	shooting to protect livestock
8	Dena Protected Area	5–10	none
9	Bamu National Patk	15–20	none
	total	**92–148**	

B. Other protected areas (about 68,000 km²). The population size has been estimated in two different ways (B-1 and B-2, respectively).

	area	pop. size	estimated total	main threats
Estimation B-1	North of 34°N	140–240	210-360	poaching
	South of 34°N	70–120		poaching
Estimation B-2	West of 56°E	150–250	210-360	poaching
	East of 56°E	60–110		poaching

C. Remaining potential habitats (about 814,000 km²). The population size has been estimated in two different ways (C-1 and C-2, respectively).

	area	pop. size	estimated total	main threats
Estimation C-1	North of 34°N	120–150	250-350	poaching
	South of 34°N	130–200		poaching
Estimation C-2	West of 56°E	160–200	250-350	poaching
	East of 56°E	90–150		poaching

Tab. 2. Some characters of five specimens of Persian Leopards. MR = number of middorsal rossets (between shoulder and tail base); LSL = the largest spot diameter on leg; LSB = the largest spot diameter on belly; LR = the largest rosset diameter; ADR = average distance between rossets. The figures for the specimen from Bamu NP are approximate figures, based on six different photos of the same specimen.

	site no.	fig. no.	total length (cm)	weight (kg)	tail length/ body length	MR	LSL (mm)	LSB (mm)	LR (mm)	ADR (mm)
Golestan NP	2	1	213	86	0.73	19	35x25	55x45	60x62	27
Chapar-Ghoymeh	3	2	212	66	0.73	21	40x35	44x41	50x69	28
Ramsar	6	3	204	?	0.76	19	40x40	60x25	60x40	25
Darestan	7	–	175	?	0.75	22	45x40	50x45	62x50	25
Bamu NP	9	5, 6	200	?	0.70	20	40x40	–	60x60	25

Fig. 6. Another photo of the same male Leopard as in Fig. 5 (Bamu National Park, 1995).
Photo: B. F. DARESHOURI.

Fig. 7. The largest skull of a male Leopard so far found comes from Golestan National Park, 1990.
The skull owner is A. R. MEHRJOU.

understandable). More in-depth investigations and an effort to make a national survey with the help of more trained and qualified people will certainly give more realistic figures and a better picture of the Leopard's status in Iran. Generally speaking, there is always a tendency to overestimate the population size. Nowadays, as the natural prey (mainly wild ungulates) has become so scarce, Leopards have to occupy large territories. As a result, single individuals may be recorded at different places, and therefore be recorded several times.

The rough estimation of the present population of the Persian Leopard in areas other than the nine better studied areas (Tab. 1B and 1C) was obtained by unconfirmed information provided by local people, limited field efforts and photographs of tracks (usually of poor quality). Most field efforts were hindered by the rough terrain, harsh environment, large size of the potential habitat, lack of necessary equipment, and limited time available. These estimations are divided into groups based on latitude 34°N and longitude 56°E. It is almost certain that Leopards are more abundant in the north compared to the south, and more abundant in the west compared to the east. In other words, more Leopards live in the north and northwest than in the south and southeast (cf. Tab. 1).

The coat pattern (spots and rossets) of specimens from the north and the south are quite similar (Tab. 2 and Figs. 2–6). Our findings are in agreement with ETEMAD (1985), that there are no geographic differences which would justify a taxonomic separation.

The largest skull as well as the largest specimens in terms of body weight come from Golestan National Park (see also TAJBAKHSH & JAMALI 1995): The length of the skull is 288 mm, its width 181 mm (cf. Figs. 2 and 7).

There are numerous current threats which could have a detrimental effect on Persian Leopard populations, including accidental and deliberate killing and habitat loss. The Leopards are probably still killed in significant numbers because of their alleged attacks on livestock. However, it is probably hard to obtain reliable data on the extent of direct killing of Leopards because of their protected status.

Acknowledgement. The great help of Mr. SAFAR POURALI DARESTANI is appreciated for providing information about Leopards in Darestan.

References

ETEMAD, E. (1985): The Mammals of Iran [In Farsi]. Vol. 2. – Department of Environment, Tehran.

MITHTHAPALA, S. (1992): Genetic and morphological variation in the Leopard (*Panthera pardus*), a geographically widespread species. – PhD thesis, Univerity of Florida, Gainesville.

NOWELL, K. & P. JACKSON (1996): Wild cats. – IUCN, 382 pp.

TAJBAKHSH, H. & S. JAMALI (1995): Nakhjeeran (games and hunting) [In Farsi]. – Museum of Nature and Wildlife of Iran, Tehran.

Authors' addresses: Assis. Prof. Dr. Bahram H. Kiabi, Department of Biology, Faculty of Sciences, Shahid Beheshti University, Evin, Tehran, Iran. E-mail: b-kiabi@cc.sbu.ac.ir. – Bijan F. Dareshouri, Office of Environment, QFA, Qeshm Island, Iran. – Ramazan A. Ghaemi, Mehran Jahanshahi, Golestan Provincial Office of Environment, Gorgan, Iran.