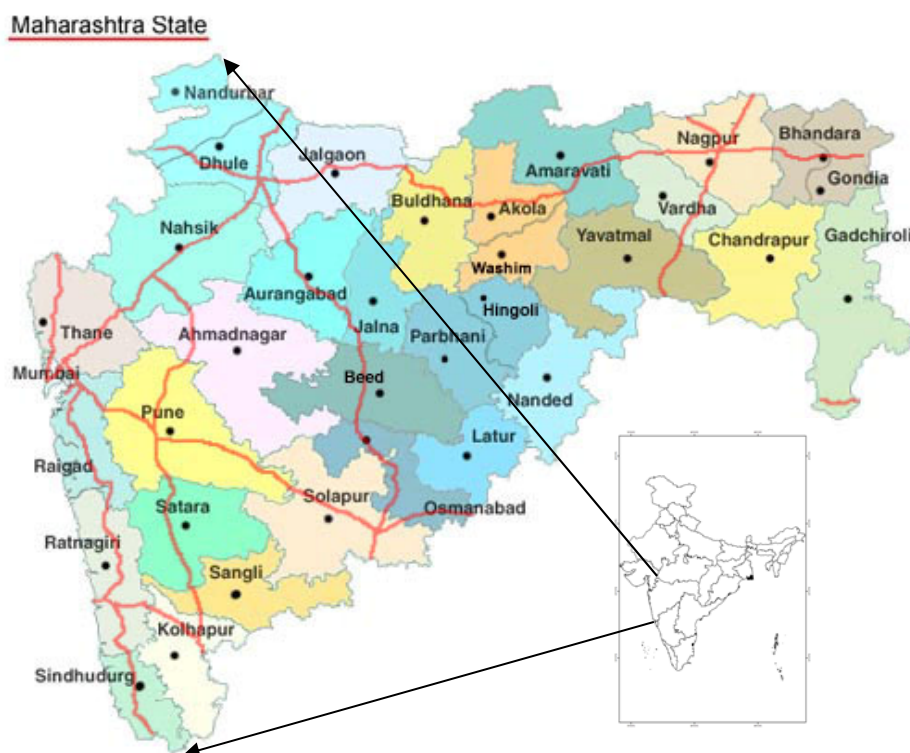


Morphometry of leopards from Maharashtra, India.

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We have been involved in various research and capacity building projects related to human leopard conflict in Maharashtra, W. India since 2004. This paper provides information on the morphometry of leopards we encountered either during medical treatment or during the insertion of PIT tags between 2004 and 2006. Although the leopard is the most common large felid in India this paper details for the first time their measurements indicating how little we know about these species in India. The leopards were trapped from the human dominated areas of the Nashik, Ahmadnagar, and Pune districts of Maharashtra. They were trapped by the Maharashtra Forest Department following livestock attacks/if fallen into wells and sometimes following attacks on people.



The animals were tranquilised using a regime of Xylazine and Ketamine (Belsare & Athreya *In prep.*).

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The body length (top of nose to where body meets the tail), tail length (where body meets tail to tip of tail), hind leg length (from the hip joint to the end of the digits) and fore leg length (from the shoulder joint to the end of the digits) were measured with a tape. Tranquilised leopards were weighed in a hammock to obtain their weights. The status of their dentition was noted to estimate age as per Bailey (1993) and images of the dentition characteristics we used are provided below.

Old Adults: Teeth yellow, canines and incisors usually well worn and sometimes missing.



Prime Adults: Teeth yellowish, incisors and canines slightly worn.



Young Adults/subadults: It is not possible to distinguish the transition age between prime adults and young adults. However, we have considered all individuals with whitish perfect set of teeth and large body sizes (opposed to large cubs) as young adults.



Large cubs: With deciduous canines and incisors and small bodies.



Weight of leopards

Age	Sex	Weight (kg) \pm std	n	min	max
Prime adult	Male	63 \pm 13	3	50	75
	Female	40 \pm 6	3	33	45
Subadult	Male	38 \pm 6	8	33	49
	Female	31 \pm 5	7	24.5	40

Body length of leopards

Age	Sex	Body length (cm) \pm std	n	min	max
Prime adult	Male	132.1	2 ²	109.2	154.9
	Female	123.2	2	116.8	129.5
Subadult	Male	125.9 \pm 7.7	8	119.4	139.7
	Female	117 \pm 9.6	7	104.1	129.5

Total body length (including tail) of leopards

Age	Sex	Total body length (cm) \pm std	n	min	max
Prime adult	Male	229.9	2	208.3	251.5
	Female	205.7	2	195.6	215.9
Subadult	Male	210.8 \pm 11.2	8	200.7	229.9
	Female	198.7 \pm 13.9	7	180.3	210.8

Length of hind leg of leopards

Age	Sex	Hind leg (cm) \pm std	n	min	max
Prime adult	Male	75.6	2	71.1	80
	Female	62.9	2	61	64.8
Subadult	Male	65.7 \pm 5.1	7	58.4	71.1
	Female	63 \pm 5.5	7	55.9	68.6

² Only a minimum amount of anaesthetic was given to allow insertion of the PIT tag and/or to treat the animals. Therefore in some cases it was not possible to remove the animal outside the cage for obtaining its weight and body size measurements.

Length of fore leg of leopards

Age	Sex	Shoulder (cm) \pm std	n	min	Max
Prime adult	Male	Not available			
	Female	61.0	1		
Subadult	Male	65.3 \pm 3.2	7	61.0	68.6
	Female	62.1 \pm 6	6	53.3	67.3

The average total body length of three male leopards hunted in the Vidarbha region of Maharashtra in 1911 was 7.1 feet and of two females 6.2 feet (Pocock 1939). The adult males in our sample were on average 7.5 feet long and 6.7 feet in the case of females. The morphometric values of the leopards from Maharashtra are no different from those obtained from a similar sample size of the leopards from Kruger National Park, South Africa (Bailey 1993).

References

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Pocock. R.I. 1939. The fauna of British India including Ceylon and Burma; Mammalia, I: Primates and Carnivora (in part), Felidae and Viverridae. 2nd Edition. Taylor and Francis, London.