

## Demography and morphometry of black-backed jackals *Canis mesomelas* in South Africa and Namibia

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Human-carnivore conflict is a global phenomenon. Therefore, in a country like South Africa predation management is a necessary but sometimes controversial activity and the role of the government is as much to provide oversight as it is to save livestock and protect wildlife.

Black-backed jackals *Canis mesomelas* are important medium-sized predators in South Africa and Namibia and non-lethal and lethal methods are used to manage and mitigate the negative impact on livestock and wildlife. Despite widespread control methods being practised over decades by official and private initiatives, little is still known about the demography and morphometry of this species.

Without official recognition or support in South Africa and Namibia, a network of private specialist predator hunters and livestock farmers is operating in both countries. Having been made privy to the hunting activities and electronic mode of communication, the opportunity was seized to collate and report on a wealth of hitherto untapped biological information.

The first challenge was to improve recording of basic information on every hunted specimen. Remote training was provided electronically to members of the network; 51 specialist predator hunters and farmers accepted the challenges and voluntarily participated in the study. Similar to the training being offered electronically, data and information were also submitted electronically by the collaborators.

Many hunters are accustomed to recording trophies such as weighing carcasses of game animals or measuring the horns of antelope. Skills required for more detailed measuring techniques of freshly hunted predator specimen had to be established: firstly, to weigh the dead black-backed jackals as accurately as possible, and secondly, introducing the hunters to a shortened version of the ALPRU procedure to record the body dimensions of large African predators. Interactive feedback from collaborators via the network necessitated that the recording of data be made easier and a shorter list of basic information was introduced, namely: date; time hunted; male/female; age (years/months); mass (kg); body length A-T (mm); tail length T-Z (mm); hunter; and GPS coordinates.

Data on body mass and body measurements (see **diagramme**) was obtained post-mortem from a large number of black-backed jackal specimen hunted in South Africa and Namibia over a period of 21 months (12 May 2009 to 1 February 2011); the 918 specimen comprised 455 males, 411 females and 52 individuals of unknown gender.

Black-backed jackals are monoestrus (breeding only once a year) and observations reported by collaborators confirmed a seasonal breeding, suggesting that the majority of females whelped annually from early in July to October. In addition to the time of year being hunted and thus age relative to whelping time, eruption of the permanent teeth and the wear of incisors were used to categorise specimens in 4 age groups: <0.5 years (pups), 0.5–1 years (juveniles), between 1–2 years (yearlings), and  $\geq 2$  years (adults).

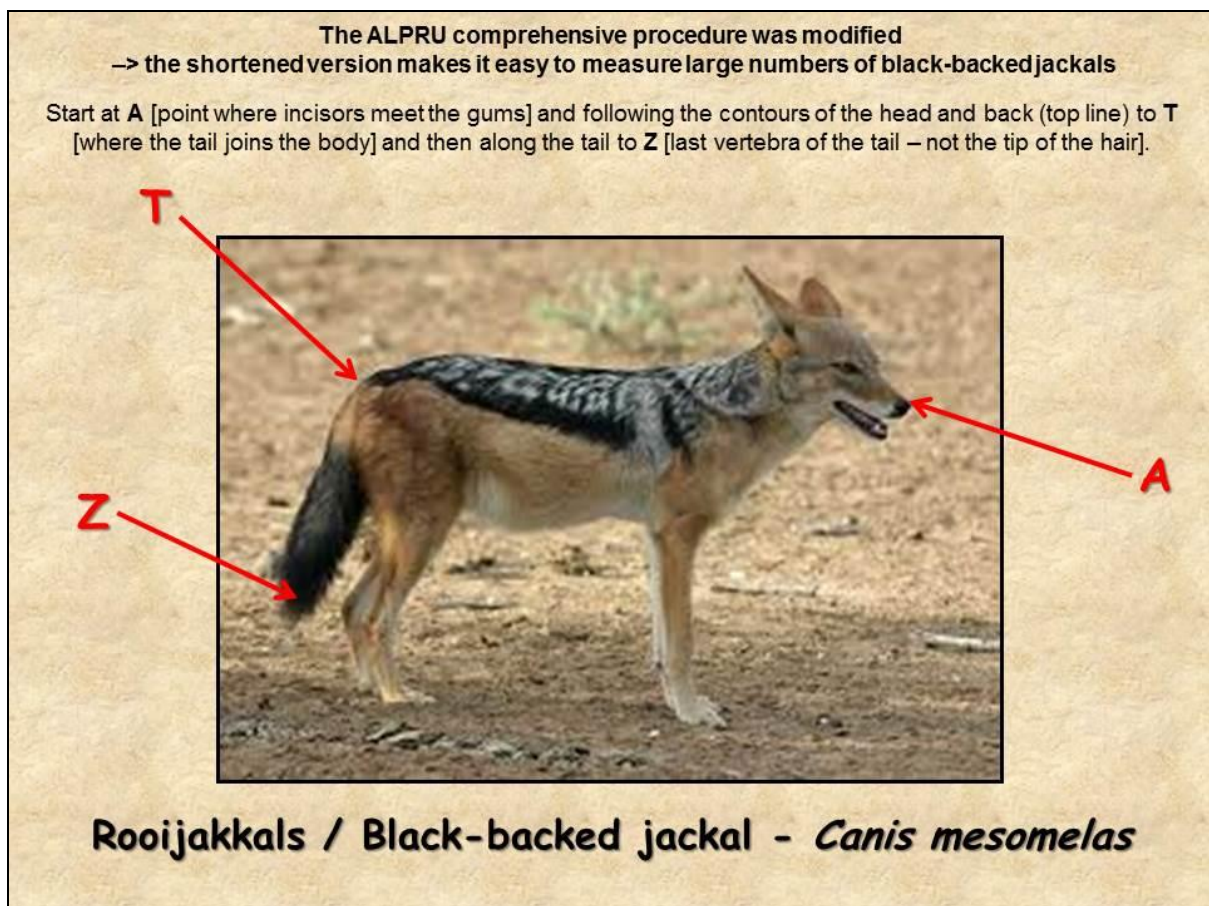
Black-backed jackal females weighed consistently less than males of the same age; the heaviest adult male and female weighed 12.5 kg and 11.5 kg, respectively. The body mass of 641 specimens was pooled over years according to the 4 age groups. Except for the 1-2 years (yearlings) age group, where the number of females was significantly more than males, the data of 722 individuals did not display a skewed sex ratio.

Growth and development of young black-backed jackals occur mostly in the first 6 months of their lives, thereafter decreasing gradually. At the age of 6 months, juveniles can already hunt independently and many may also start dispersing from their natal surroundings.

Males were consistently larger than females for three measured variables, namely total body length, body length and tail length. These three basic measurements are routinely recorded for all hunted black-backed jackal specimen.

If the onslaught by black-backed jackals is to be managed and the negative impact of predation mitigated, the main focus of predation management should be on reproduction. Therefore, predation management of black-backed jackals requires good knowledge of the interface between its biology and management.

The results are not reported here, but the information provided by several of the 51 collaborators showed that it is indeed feasible to obtain large sets of valuable data on reproduction of hunted black-backed jackal females.



The 51 anonymous collaborators are thanked for their participation and valuable contribution in this study.

Full detail is available in an article at the following link:

[https://www.ufs.ac.za/docs/librariesprovider22/animal-and-wildlife-and-grassland-sciences-documents/alpru-documents/all-documents/alpru/de-waal\\_2017\\_demography-and-morphometry-of-black-backed-jackals-canis-mesomelas-in-south-africa-and-namibia.pdf?sfvrsn=4b68a621\\_0](https://www.ufs.ac.za/docs/librariesprovider22/animal-and-wildlife-and-grassland-sciences-documents/alpru-documents/all-documents/alpru/de-waal_2017_demography-and-morphometry-of-black-backed-jackals-canis-mesomelas-in-south-africa-and-namibia.pdf?sfvrsn=4b68a621_0)