



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

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NATIONAL ASSEMBLY (For written reply)

QUESTION NO. 1307 {NW1567E} INTERNAL QUESTION PAPER NO. 13 of 2022

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Mrs C Phillips (DA) to ask the Minister of Forestry, Fisheries and the Environment:

- (1) Noting that the estimated elephant population at the end of 2020 was 31 000 elephants, (a) what is the estimated elephant population at the end of 2021 and (b) how was this estimate arrived at;
- (2) noting that the SA National Parks uses sample and/or block counting methods to estimate elephant population sizes, (a) on what date was the last such count conducted to estimate the number of elephants in the Kruger National Park and (b) what are the details of the sample and/or block counting methods used;
- (3) whether the sample and/or block counting methods are (a) in accordance with the methods used by neighbouring countries with large elephant populations such as Botswana, Namibia and Zimbabwe and (b) accepted by the International Union for Conservation of Nature African Elephant Specialist Group; if not, why not, in each case; if so, what are the relevant details in each case?

1307. THE MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT REPLIES:

- (1) (a) The 2021 estimate was 27 992 individual elephants living in the Kruger National Park (KNP) (with a 95% confidence interval of between 26 401 and 29 584). Note that the 2020 estimate was 31 527 (31 085 to 31 976).

The Kruger elephant population is part of the Greater Limpopo Transfrontier Conservation Area within which elephants move extensively within seasons, as well as between years across large landscapes to Mozambique and Zimbabwe. What is critical to note is the long-term population trend which shows that elephants are doing well in Kruger in particular, and in the Greater Limpopo Transfrontier Conservation Area in general.

- (b) We used Jolly's estimator (Jolly, 2002) to obtain sample-based estimates and confidence intervals of elephant numbers using data collected from surveys 3 km x 3 km blocks distributed randomly across the KNP's southern and central regions (654 blocks), and 6 km x 6 km blocks distributed randomly across the KNP's northern and far northern regions (93 blocks). SANParks also surveyed identified elephant impact areas that are of different sizes (five elephant impact areas of a total size of 244 km²).

See Jolly, G.M. 1969. 'Sampling methods for aerial censuses of wildlife populations', *East African Agricultural and Forestry Journal*, 34:46-49.

- (2) (a) The last count to estimate the number of elephants in the KNP was conducted from 16 August 2021 to 18 September 2021.

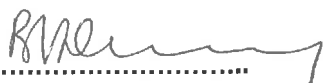
- (b) Observers used a helicopter-based observation platform and systematically completed transects comprising a 200 m observation strip on each side of the helicopter within each block or elephant impact area (see (1) (b)), with flights 45 m above ground at a speed of 65 knots. The survey team comprised a pilot, a data recorder and two observers. Surveyors counted elephants during all block surveys, taking pictures of larger herds and counting elephants from these images later after recording the geographical position of the observation. This provided a dataset with elephants counted per block.

(3) (a) The sample block counting method is a well-established scientific survey method for large populations in savannah ecosystems to generate robust scientific estimates. Botswana, Namibia and Zimbabwe use aerial surveys typically of fixed width transects. These fixed transects will also only allow observers to directly survey a proportion of the total area, meaning that a fixed width transect is essentially the same as a block, but its area is more variable than a fixed size block. Surveys in the KNP generally cover larger proportions of the total area than those in other large savannah parks in Africa. Optimal coverage for elephants is 40% (see below reference) – sample blocks and elephant impact areas surveyed cover 9 477.7 km² of the KNP, equating to 48,6% coverage of the park.

Ferreira, S.M. & van Aarde, R.J. 2009. 'Aerial survey intensity as a determinant of estimates of African elephant population sizes and trends, *South African Journal of Wildlife Research-24-month delayed open access*, 39(2):181-191.

(b) Yes, the sample block methods are in accordance with those accepted by the International Union for Conservation of Nature's African Elephant Specialist Group. It provides sample-based estimates with 95% confidence intervals. See Tables 1 and 2 in the attached report (Thouless, C., Dublin, H.T., Blanc, J., Skinner, D.P., Daniel, T.E., Taylor, R., Maisels, F., Frederick, H. & Bouché, P. 2016. African Elephant Status Report 2016. *An update from the African Elephant Database*. Available at: <https://conservationaction.co.za/wp-content/uploads/2016/10/AfESG-African-Elephant-Status-Report-2016-Executive-Summary-only.pdf>

Regards



**MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT**

DATE: 13/4/2022