



Black-footed Cat (*Felis nigripes*)

Methodology

Population size was calculated for the South African national Mammal Red List assessment using the following method:

1. The Kernel Density tool in ArcGIS was used to estimate kernel densities around Black-footed Cat records.
2. Kernel Densities were converted to isopleths containing 30, 40, 50, 60, 70, 80, 90 and 95 percent of sightings.
3. Isopleth lines were converted to polygons and the area of each polygon was calculated, after the polygons were projected to Africa Albers Equal Area Conic projection.
4. High density clusters of Black-footed Cats were assumed to contain 50% of sightings (i.e. the 0.5 isopleth, Figure 1), whereas medium-density clusters were assumed to contain the next 20% of sightings (the 0.7 isopleth, Figure 1) while low density areas covered the remaining 25% of sightings (0.95 isopleth, Figure 1).
5. The areas calculated for high, medium and low density clusters are shown in Table 1. For South Africa, the kernel density polygons were clipped to the national boundary, which resulted in the exclusion of several low density areas. No high or medium density areas fell outside the borders of South Africa. This may, however, be an artefact of sampling effort being greater within South Africa.
6. Densities of cats in the different areas were estimated at 0.03, 0.02 and 0.01 per km², yielding the population sizes shown in Table 1, when adjusting for a population structure of 70% mature individuals.
7. Summing the three density zones yields a total estimated population of 8,333 mature individuals within South Africa, and 9,707 within the entire range in the southern African region.
8. Estimates of population sizes are most sensitive to the size of the high density clusters, thus a more conservative estimate would yield a lower population size, while a less conservative estimate would yield a larger population size. Even increasing the high density areas to cover 70% of the observations of Black-footed Cats, only yields a global population estimate of less than 12,000 mature individuals.

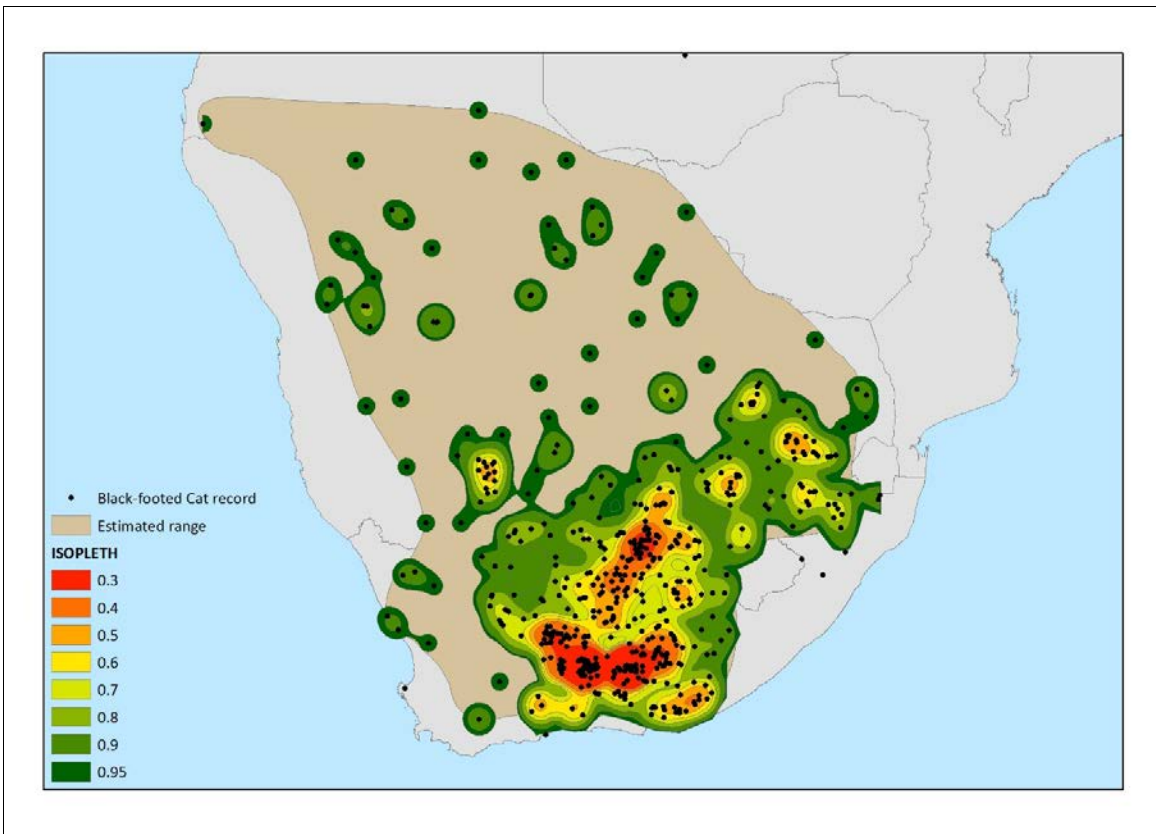


Figure 1. Heat map of distribution records for Black-footed Cat (*Felis nigripes*). Isopleth bands containing the % of distribution records are shown on the left of the figure.

Table 1. Summary of global population size estimates for Black-footed Cat (*Felis nigripes*). Estimates are based on converting existing records into density isopleths and summing the resultant population sizes (see Methodology above).

Estimated population in three different density zones				
	High Density (0.03 individuals /km ²)	Medium Density (0.02 individuals /km ²)	Low Density (0.01 individuals /km ²)	Total estimated population
Area (km ²)	124,975 km ²	179,654 km ²	652,482 km ²	
No. individuals	3,749	3,593	6,525	13,787
No. mature individuals (70% of individuals)	2,624	2,515	4,568	9,707