

Population trends of spotted hyaenas in the Kruger National Park from 1984 to 2008.



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What trends might we expect?

- Highly social territorial large carnivore – thus expect prey biomass and ultimately intraspecific competition to influence population density – density dependence. Similar to what has been found for lions (Packer et al. 2005).



If changes were detected what is driving them?

- Potential cascade effects of lion numbers where to change over time – e.g. disease effects
- Regulated by suitable prey biomass and intra-specific competition (Purchase 2004)
- Recovering population from earlier persecution (Mills 1991)

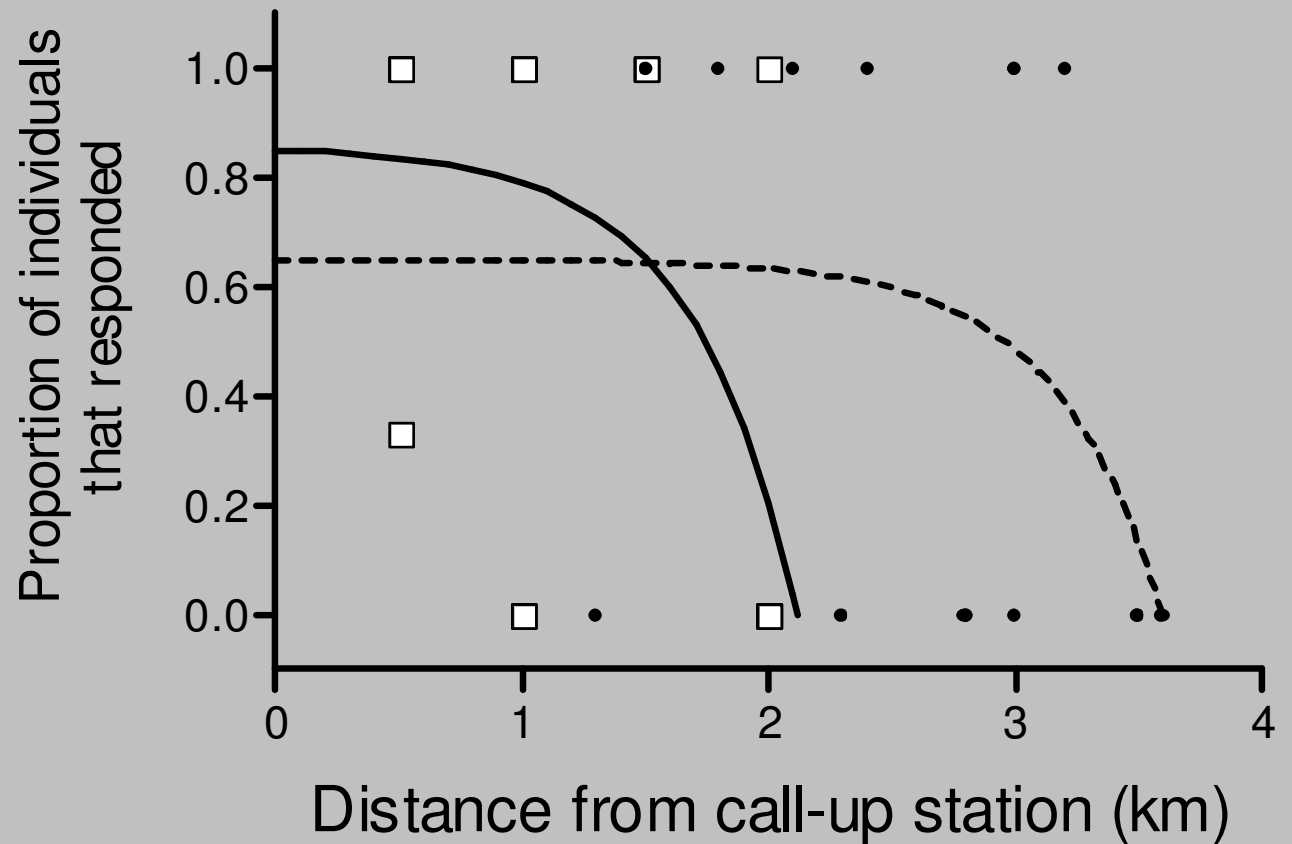


Figure 1. Responses of individual hyenas noted for the present study (open symbols) and data extracted from Mills et al. (2001) (closed symbols). Responses were different depending on call-up design. One hour buffalo calf playbacks (solid line – $R^2 = 0.32$) resulted in hyenas responding more intensely closer to a call-up station compared to intermittent hyena calls for 30 minutes (broken line – $R^2 = 0.17$).

Habitat	1985	1989	2005	2008
Malelane mountain bushveld	5	5	27	49*
<i>Combretum</i> species on granite	345	525	553	581
<i>Acacia</i> species on bottomlands	383	434	482	529*
Mopane- <i>Combretum</i> bush	690	758	701	643
Mopane- <i>Acacia nigrescens</i> bush	179	145	164	183
Punda Maria sandveld	59	59	87	114
Pafuri rugged veld	79	84	124	164*
<i>Knobthorn</i> -marula savanna	239	285	612	938*
Shrub mopane	243	480	474	468
Lebombo	118	217	109	0
Total	2340	2992	3330	3667
	(2299-2381)	(2899-3086)	(3171-3488)	(3443-3891)

- Hypothesis 1: lion cascade effects of lion density (Ferreira & Funston *in press*)
- Hypothesis 2: suitable prey biomass and intra-specific competition (Du Toit 2003)
- Hypothesis 3: Recovering population

