

Jansen, C., Leslie, A. J., Cristescu, B., Teichman, K. J. and Martins, Q. 2019. Determining the diet of an African mesocarnivore, the caracal: scat or GPS cluster analysis? – Wildlife Biology 2019: wlb.00579

Appendix 1

Prey items recorded in caracal *Caracal caracal* scat (n = 250) collected in Namaqua National Park and surrounding farmlands, Northern Cape, South Africa; and at feeding sites confirmed from Global Positioning System (GPS) cluster visitation (n = 91).

Prey item	Prey weight (kg) ^a	GPS cluster analysis		Scat analysis	
		No. of occurrences n = 91	FO ^b (%)	No. of occurrences n = 250	CFO ^c (%)
Medium- to large mammals (10-40 kg)		5	5.5	8.3	3.3
Springbok <i>Antidorcas marsupialis</i>	34.5	0	0	1	0.40
Duiker <i>Sylvicapra grimmia</i>	16.1	3	3.3	3.33	1.33
Klipspringer <i>Oreotragus oreotragus</i>	11.9	1	1.1	1.50	0.60
Steenbok <i>Raphicerus campestris</i>	11.1	0	0	2.50	1.00
Medium mammals (1-10 kg)		53	53	125.2	50.1
Aardwolf <i>Proteles cristatus</i>	8.8	0	0	1	0.40
African wildcat <i>Felis lybica</i>	4.25	1	1.1	0	0
Rock hyrax <i>Procavia capensis</i>	3.03	36	39.6	77.7	31.2
Lagomorpha	2.35	14	15.4	46.7	18.7
Small mammals (<1 kg)		1	1.1	72.8	29.1
Yellow mongoose <i>Cynictis penicillata</i>	0.829	0	0	3	1.20
Striped polecat <i>Ictonyx striatus</i>	0.764	0	0	1	0.20

Meerkat <i>Suricata suricate</i>	0.728	0	0	3	0.93
Brant's whistling rat <i>Parotomys brantsii</i>	0.153	0	0	1	0.20
<i>Otomys</i> spp.	0.131	0	0	20.83	8.33
<i>Elephantulus</i> spp.	0.058	0	0	2	0.53
Cape short-eared gerbil <i>Desmodillus auricularis</i>	0.052	0	0	1	0.40
Namaqua rock mouse <i>Aethomys namaquensis</i>	0.047	0	0	20.27	8.11
Round-eared sengi <i>Macroscelides flavicaudatus</i>	0.038	0	0	1	0.40
Striped mouse <i>Rhabdomys pumillio</i>	0.035	0	0	12.85	5.14
Hairy-footed gerbil <i>Gerbillurus paeba</i>	0.025	0	0	8.33	3.33
Soricidae	0.011	0	0	2	0.33
Pygmy mouse <i>Mus minutoides</i>	0.006	0	0	1	0.20
Livestock		26	28.6	17.3	6.9
Goat <i>Capra hircus</i>	50	3	3.3	5	2
Sheep <i>Ovis aries</i>	40	23	25.3	12	4.8
Birds	1.57	2	2.2	6.7	2.7
Reptiles		0	0	2.1	0.8
Lizards	0.006	0	0	5	0.71
Snakes	0.006	0	0	1	0.13
Invertebrates		0	0	5	2
Coleoptera	0.004	0	0	6	0.88
Orthoptera	0.004	0	0	1	0.20
Scorpiones	0.004	0	0	7	0.84

Solifugae	0.004	0	0	1	0.10
Fruits/seeds	0.002	0	0	1.2	0.5
Vegetation	0.001	0	0	5	2
Unknown	-	4	4.4	6	2.4

^aFrom Skinner and Chimimba 2005

^b no. of times a prey item was recorded / total no. of prey items × 100

^c no. of occurrences per scat / total no. of scats collected × 100

Appendix 2

Biomass consumed calculated from caracal *Caracal caracal* prey consumption sites (n = 91)* visited in Namaqua National Park and surrounding farmlands, Northern Cape, South Africa.

Prey item	Prey age class	Estimated prey weight (kg) ^a	Number of consumed items	Prey consumption (%) ^b	Corrected biomass consumed (kg) ^c	Corrected biomass consumed as % of all consumption sites ^d
Medium- to large mammals (10-40 kg)						
Duiker <i>Sylvicapra grimmia</i>			3		20.1	3.6
	subadult	8	1	60	4.8	0.9
	adult	16.1	1	60	9.7	1.7
	unknown	14	1	40	5.6	1
Klipspringer <i>Oreotragus oreotragus</i>	YoY	4	1	60	2.4	0.4
Medium mammals (1-10 kg)						
African wildcat <i>Felis lybica</i>	adult	4.25	1	90	3.8	0.7
Rock hyrax <i>Procavia</i>	unknown	3.03	36	90	98.2	17.4

capensis

Lagomorpha	unknown	2.35	14	90	29.6	5.2
Livestock						
Sheep <i>Ovis aries</i>			23		336	59.5
	YoY	21.7	15	60	195.3	34.6
	subadult	39.4	1	40	15.8	2.8
	adult	58	3	35	60.9	10.8
	unknown	40	4	40	64	11.3
Goat <i>Capra hircus</i>			3		71.5	12.7
	YoY	22.8	1	40	9.1	1.6
	subadult	78	2	40	62.4	11.1
Birds	unknown	1.57	2	90	2.8	0.5
Total		313.2	83		564.4	100

*Prey items that could not be identified to species level were not included in calculations

^aFrom Schoeman 2000, Lu 2001, Skinner and Chimimba 2005

^bDetermined from photographs of prey at cluster visitations and Skinner and Chimimba 2005

^cBiomass consumed \times Prey consumption (%)

^dBiomass consumed \times Prey consumption / Corrected biomass consumed \times 100

Appendix 3

Biomass consumed calculated from caracal *Caracal caracal* scat (n = 250) collected in Namaqua National Park and surrounding farmlands in Namaqualand, Northern Cape, South Africa.

Prey item	Prey weight (kg) ^a	Correction factor (kg scat ⁻¹) ^b	No. of occurrences (n = 297)	Prey items occurrence	Total biomass consumed (kg) ^c	Relative biomass consumed (%)
Medium- to large mammals (10-40 kg)						
Springbok <i>Antidorcas marsupialis</i>	34.48	27	1	0.34	9.09	0.39
Duiker <i>Sylvicapra grimmia</i>	16.1	27	4	1.35	36.36	1.55
Klipspringer <i>Oreotragus oreotragus</i>	11.9	27	2	0.67	18.18	0.78
Steenbok <i>Raphicerus campestris</i>	11.1	27	3	1.01	27.27	1.16
Medium mammals (1-10 kg)						
Aardwolf <i>Proteles cristatus</i>	8.8	27	1	0.34	9.09	0.39
Rock hyrax <i>Procavia capensis</i>	3.03	29.02	86	28.96	840.39	35.84
Lagomorpha	2.35	26.24	52	17.51	459.45	19.59
Small mammals (<1 kg)						

Yellow mongoose <i>Cynictis penicillata</i>	0.829	20.02	3	1.01	20.22	0.86
Striped polecat <i>Ictonyx striatus</i>	0.764	19.75	1	0.34	6.65	0.28
Meerkat <i>Suricata suricate</i>	0.728	19.61	3	1.01	19.81	0.84
Brant's whistling rat <i>Parotomys brantsii</i>	0.153	17.26	1	0.34	5.81	0.25
<i>Otomys</i> spp.	0.131	17.17	27	9.09	156.05	6.66
<i>Elephantulus</i> spp.	0.058	16.87	2	0.67	11.36	0.48
Cape short-eared gerbil <i>Desmodillus auricularis</i>	0.052	16.84	1	0.34	5.67	0.24
Namaqua rock mouse <i>Aethomys namaquensis</i>	0.047	16.82	28	9.43	158.59	6.76
Round-eared sengi <i>Macroscelides flavicaudatus</i>	0.038	16.79	1	0.34	5.65	0.24
Striped mouse <i>Rhabdomys pumillio</i>	0.035	16.77	21	7.07	118.6	5.06
Hairy-footed gerbil <i>Gerbillurus paeba</i>	0.025	16.73	12	4.04	67.61	2.88
Soricidae	0.011	16.67	2	0.67	11.23	0.48
Pygmy mouse <i>Mus minutoides</i>	0.006	16.65	1	0.34	5.61	0.24
Livestock						
Goat <i>Capra hircus</i>	50	27	7	2.36	63.64	2.71

Sheep <i>Ovis aries</i>	40	27	13	4.38	118.18	5.04
Birds	1.57	23.05	14	4.71	108.66	4.63
Lizards	0.006	16.65	3	1.01	16.82	0.72
Arthropods	0.004	16.65	8	2.69	44.86	1.91
Total	182.22	528.58	297	100	2344.85	100

^aFrom Skinner and Chimimba 2005

^bFrom Baker et al. 1993, $Y = 16.63 + 4.09x$; only for prey < 4.5 kg

^cCorrection factor × Prey items occurrence