

## Supplementary Information

### Spatial, temporal and attitudinal dimensions of conflict between predators and small-livestock farmers in the Central Karoo

Marine Drouilly, Marion Tafani, Nicoli Natrass and Justin O'Riain  
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### Appendix S1: Questions used for the study on the spatio-temporal patterns of perceived conflict between small-livestock farmers and three predators in the Karoo

#### A) Information on the farmer and his farm(s)

Interview date: \_\_\_\_\_ Farm(s) name: \_\_\_\_\_ Farm(s) size: \_\_\_\_\_

Interviewee's name: \_\_\_\_\_

Phone number/email: \_\_\_\_\_

Gender: \_\_\_\_\_

Interviewee's date of birth: \_\_\_\_\_

If a farmer, number of years of farming experience in the Karoo \_\_\_\_\_

Do you have livestock/domestic animal losses due to predators? Yes No

#### B) Spatio-temporal patterns of the conflict with the three species of predators

When was the first time you saw a jackal or jackal spoor on your land? \_\_\_\_\_

When – if ever – did jackal become a problem for lamb loss on your farm? \_\_\_\_\_

When – if ever – did lamb loss to jackal become a serious concern to the viability of your farm (i.e. a serious problem)? \_\_\_\_\_

When was the first time you saw a caracal or caracal spoor on your land? \_\_\_\_\_

When – if ever – did caracal become a problem for lamb loss on your farm? \_\_\_\_\_

When – if ever – did lamb loss to caracal become a serious concern to the viability of your farm (i.e. a serious problem)? \_\_\_\_\_

When was the first time you saw a baboon or baboon spoor on your land? \_\_\_\_\_

When – if ever – did baboon become a problem for lamb loss on your farm? \_\_\_\_\_

When – if ever – did lamb loss to baboon become a serious concern to the viability of your farm (i.e. a serious problem)? \_\_\_\_\_

#### C) Reasons for predator increase in the Central Karoo

Do you think jackals have increased in the Central Karoo over the last decade? Yes No

If yes, what do you think the reason(s) is/are for it?

Do you think caracals have increased in the Central Karoo over the last decade? Yes No

If yes, what do you think the reason(s) is/are for it?

Do you think baboons have increased in the Central Karoo over the last decade? Yes No

If yes, what do you think the reason(s) is/are for it?

D) Experience with “Damage-causing” animal on the farm

According to you, what animal causes the most infrastructure damage on your farm(s)?

a) Porcupine

b) Aardvark

c) Aardwolf

d) Baboon

e) Other, *specify* \_\_\_\_\_

**Appendix S2:** Frequency of answers from all ( $n = 77$ ) respondents to questions Q1: ‘When was the first time you saw a jackal/caracal/baboon or jackal/caracal/baboon spoor on your land?’, Q2: ‘When – if ever – did jackal/caracal/baboon become a problem for lamb loss on your farm?’ and Q3 ‘When – if ever – did lamb loss to jackal/caracal/baboon become a serious concern to the viability of your farm (i.e. a serious problem)?’, for jackal (a), caracal (b) and baboon (c), at three points in time: before 1994, from 1994 to 2004, from 2004 to 2014

<b>a) Jackal</b>	Q1 - First sighting	Q2 - First problem	Q3 - First severe problem
Before 1994	34	22	7
1994–2004	30	33	18
2004–2014	13	18	39
Never	0	4	13
TOTAL	77	77	77

<b>b) Caracal</b>	Q1 - First sighting	Q2 - First problem	Q3 - First severe problem
Before 1994	64	46	7
1994–2004	8	12	7
2004–2014	5	11	17
Never	0	8	46
TOTAL	77	77	77

<b>c) Baboon</b>	Q1 - First sighting	Q2 - First problem	Q3 - First severe problem
Before 1994	56	8	2
1994–2004	2	3	3
2004–2014	7	16	12
Never	12	50	60
TOTAL	77	77	77

We performed Pearson’s chi-square tests (goodness of fit) to test whether the distribution of all farmers’ responses assumed a uniform distribution (i.e. all time periods have equal probability to be cited by the respondents for each question Q1, Q2 and Q3). We thus tested the hypothesis  $H_0$  that all time periods have equal probability to be cited by the respondents against the alternative (i.e. that there is a trend). The results were similar using the subset of respondents excluding younger farmers.

While the answers to question Q2 (i.e. first problem) for jackal were equally distributed between periods ( $\chi^2 = 4.96$ ,  $df = 2$ ,  $P = 0.08$ ), the answers to question Q1 (i.e. first sighting;  $\chi^2 = 9.69$ ,  $df = 2$ ,  $P = 0.008$ ) and to question Q3 (i.e. first serious problem;  $\chi^2 = 24.78$ ,  $df = 2$ ,  $P < 0.001$ ) did not follow a uniform distribution. Looking at the table above (a) we can see that respondents were more frequently situating the first severe problem in recent years, between 2004 and 2014 (61% of respondents).

The responses to question Q1 (i.e. first sighting;  $\chi^2 = 86.05$ ,  $df = 2$ ,  $P < 0.001$ ), question Q2 (i.e. first problem;  $\chi^2 = 34.52$ ,  $df = 2$ ,  $P < 0.001$ ) and question Q3 (i.e. first serious problem;  $\chi^2 = 6.45$ ,  $df = 2$ ,  $P = 0.040$ ) for caracal did not follow a uniform distribution. Looking at the table above (b) we can see that respondents were more frequently situating first sightings before 1994 (83%), while the first serious problems were mostly experienced in recent years, between 2004 and 2014 (55% of respondents).

The responses to question Q1 (i.e. first sighting;  $\chi^2 = 82.18$ ,  $df = 2$ ,  $P < 0.001$ ), question Q2 (i.e. first problem;  $\chi^2 = 9.56$ ,  $df = 2$ ,  $P = 0.008$ ) and question Q3 (i.e. first serious problem;  $\chi^2 = 10.71$ ,  $df = 2$ ,  $P = 0.004$ ) for baboons did not follow a uniform distribution. Looking at the table above (c) we can see that respondents were more frequently situating first sightings before 1994 (86%), while the first serious problems were mostly experienced in recent years, between 2004 and 2014 (71% of respondents).

**Appendix S3:** Selection of the best logistic regression models explaining the occurrence of a serious problem (i.e. threatening the viability of a farm) by 2014 with each predator species (one model per species,  $n = 75$  or  $72$ ), according to farm spatial characteristics in the Central Karoo, South Africa. The best model for each species was selected by minimizing the AICc criterion (AIC corrected for small sample size). Because of our small sample size and of the absence of *a priori* hypotheses, we only tested for additive effects and did not test for possible interactions between candidate variables. FS = Farm Size, Rug = Ruggedness, RH = Riverine Habitat, WS = Water sources, dPA = distance to the nearest protected area. FS and Rug were available for 75 out of 77 farms and the rest of the candidate variables for 72 out of 77 farms

Parameters	df	Jackal			Caracal			Baboon		
		Deviance	AICc	$\Delta$ AICc	Deviance	AICc	$\Delta$ AICc	Deviance	AICc	$\Delta$ AICc
Null ( $n = 75$ )	1	66.0	68.0	3.2	101.7	103.8	6.3	80.3	82.3	5.7
<b>FS</b>	2	<b>60.7</b>	<b>64.8</b>	<b>0.0</b>	101.1	105.3	7.9	79.7	83.9	7.2
<b>Rug</b>	2	65.9	70.1	5.2	<b>93.3</b>	<b>97.4</b>	<b>0.0</b>	<b>72.5</b>	<b>76.6</b>	<b>0.0</b>
FS+Rug	3	60.6	66.9	2.1	92.8	99.1	1.7	71.6	78.0	1.3
Null ( $n = 72$ )	1	61.6	63.6	2.7	97.8	99.9	7.2	78.7	80.8	6.5
<b>FS</b>	2	<b>56.7</b>	<b>60.9</b>	<b>0.0</b>	97.3	101.4	8.8	78.4	82.5	8.2
<b>Rug</b>	2	61.5	65.7	4.8	<b>88.5</b>	<b>92.6</b>	<b>0.0</b>	<b>70.1</b>	<b>74.3</b>	<b>0.0</b>
RH	2	61.5	65.6	4.8	97.5	101.7	9.0	77.3	81.4	7.1
WS	2	60.5	64.7	3.8	97.1	101.3	8.6	75.7	79.9	5.6
dPA	2	61.6	65.7	4.9	97.8	101.9	9.3	78.5	82.7	8.4
FS+Rug	3	56.7	63.0	2.1	87.9	94.2	1.6	69.7	76.0	1.7
Rug+RH	3	60.5	66.8	6.0	88.5	94.8	2.2	69.4	75.8	1.5
Rug+RH+WS	4	60.3	68.9	8.0	88.4	97.0	4.4	66.4	74.9	0.6
FS+Rug+RH +WS+dPA	6	56.1	69.4	8.5	87.5	100.7	8.1	65.3	78.6	4.3

