

Determinants of attitudes to carnivores: implications for mitigating human–carnivore conflict on South African farmland

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SUPPLEMENTARY MATERIAL 1 Waterberg carnivore questionnaire



Thank you for agreeing to participate in this project, which aims to identify affordable non-lethal measures that reduce predation on livestock and game to acceptable levels, and thereby increase tolerance of carnivores in farmland. The project is a collaboration between the Endangered Wildlife Trust and the University of Pretoria.

The purpose of the questionnaire is to gather information on the attributes of your farm, current levels of predation on game and livestock, use of lethal and non-lethal anti-predation methods, and attitudes to carnivores. We are specifically focusing on African wild dogs, cheetahs, brown hyaenas, caracals, black-backed jackals and leopards. Your answers will help us find out which natural and human factors influence where, when and how often, human–carnivore conflict occurs. We will use that information to identify which of a range of non-lethal anti-predation measures is best suited to the needs of participating land-owners. The second part of the project will test selected non-lethal measures to see which are the most cost-efficient and what effect they have on predation levels.

It is very important to us that the information we collect is accurate and candid so please be assured that any answers you give will be treated as strictly confidential. When the survey results are published, they will be presented in a way that protects your privacy and ensures your identity cannot be connected with your responses. The questionnaire asks for your contact details so that we can provide you with a copy of the survey results and also to allow us to get in touch with you if we need to double check anything later. Your contact information will not be shared with anyone outside the research team, unless you give us permission to do so. If you would like to get in touch with us, contact details for the research team are at the foot of each page.

The initial questionnaire should take roughly 30 minutes and we will follow up with a shorter questionnaire every 3 months. This will allow us to monitor any changes over time. Your interviewer will record your answers and you may omit any questions you would prefer not to answer.

Part 1 – You and your farm:

Interviewer(s): _____ Date: _____

Interviewee:

1.1: Title _____ Forename _____ Surname _____

1.2 Position: ☐ Owner ☐ Manager ☐ Employee 1.3 Do you live at your farm? ☐ Yes ☐ No

1.4 Length of time you have owned/worked at the site: _____ years _____ months

1.5 First language: ☐ Afrikaans ☐ Setswana ☐ English ☐ Other (please state) _____

1.6 Date of birth: _____

1.7a Farm name: _____ 1.7b Farm Number: _____

1.8 Postal address: _____

1.9 E mail address: _____

1.10 Telephone number: _____

1.11 GPS coordinates: S _____ E _____

1.12 Elevation: _____ m 1.13 Predominant terrain: ☐ Hilly ☐ Flat

1.14 Total size of the site: _____ ha 1.15 Is your perimeter fence predator-proof? ☐ Yes ☐ No

1.16 Which habitats are found at your farm and what percentage of the site do they cover?

Habitat		% of Site	Habitat		% of Site
Open grassland	<input type="checkbox"/>		Scrub	<input type="checkbox"/>	
Woodland	<input type="checkbox"/>		Crop (monoculture)	<input type="checkbox"/>	

1.17 What species do you farm, how many of each do you have and what percentage of your site's area is used for each:

Species		Number	% of site
Small stock (sheep, goats, pigs)	<input type="checkbox"/>		
Cattle	<input type="checkbox"/>		
Game	<input type="checkbox"/>		

1.18 What time(s) of year does lambing/calving occur on your farm? _____

1.19 What is the main purpose of your farm? Commercial ☐ Subsistence ☐ Leisure ☐

1.20 What is the carrying capacity of your farm (LSU's)? _____

1.21 Are your annual turnover and profitability documented by an accountant/auditor? ☐ Yes ☐ No

1.22 What were your turnover, EBIT and ROC for the last financial year? _____

Part 2 – Predation:

2.1 Which of the following species were present at your farm in the last year? Please indicate whether you saw the animal or only its spoor (tracks/droppings), approximate dates of sightings, and numbers seen:

Species sighted	Dates sighted	Numbers sighted
African wild dog <input type="checkbox"/> Animal/spoor		
Cheetah <input type="checkbox"/> Animal/spoor		
Brown hyaena <input type="checkbox"/> Animal/spoor		
Caracal <input type="checkbox"/> Animal/spoor		
Jackal <input type="checkbox"/> Animal/spoor		
Leopard <input type="checkbox"/> Animal/spoor		
Serval <input type="checkbox"/> Animal/spoor		
Honey badger <input type="checkbox"/> Animal/spoor		
African civet <input type="checkbox"/> Animal/spoor		
African wild cat <input type="checkbox"/> Animal/spoor		

2.2 Have you seen evidence in the last year that any of these species are breeding at your site (cubs/pups etc.)? If so, which species? _____

2.3 Have any of your livestock/game been damaged by carnivores in the last year? ☐ Yes ☐ No

If **yes**, please indicate which species were damaged, how many, how much each damaged animal was worth based on present sale prices, which carnivore species you think were responsible, and what evidence made you think so:

Species damaged	No. damaged	Sale price	Predator responsible	Evidence

2.4 Did you ask anyone to help with the problem? ☐ Yes ☐ No If yes, who? _____

Part 3 – Anti-predation measures:

3.1 Have you killed any carnivores in the last year? ☐ Yes ☐ No

If **yes**, please indicate which carnivores were killed, how many of each species, and method(s) used:

Carnivore species killed	Number	Method

3.2 Why were they killed?_____

3.3 How much did lethal control cost (i.e. staff costs, transport, equipment, bycatch)?_____

3.4 What other methods did you use to protect your livestock/game from predators, and how much did you spend on each method in the last year?_____

3.5 At what point (number of animals or Rands lost) do predation levels become unacceptable?_____

Part 4 - Attitudes to carnivores

4.1 What do you think about the following statements?

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
This site cannot tolerate any carnivores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carnivores cost me money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carnivores are wasteful and take far more than they need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to know more about non-lethal anti-predation methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Carnivores should only live in fenced areas where they cannot get out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It does not matter if predators kill a few of my animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you remove/kill a predator it just gets replaced by another one	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is nothing good about carnivores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like to have fewer carnivores in this area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Killing carnivores is cheaper than protecting my stock by other means	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.2 Would you tolerate these species if they were regularly present at your farm?

	Yes	No		Yes	No
African wild dog	<input type="checkbox"/>	<input type="checkbox"/>	Serval	<input type="checkbox"/>	<input type="checkbox"/>
Cheetah	<input type="checkbox"/>	<input type="checkbox"/>	Honey badger	<input type="checkbox"/>	<input type="checkbox"/>
Brown hyaena	<input type="checkbox"/>	<input type="checkbox"/>	African civet	<input type="checkbox"/>	<input type="checkbox"/>
Caracal	<input type="checkbox"/>	<input type="checkbox"/>	African wild cat	<input type="checkbox"/>	<input type="checkbox"/>
Jackal	<input type="checkbox"/>	<input type="checkbox"/>			
Leopard	<input type="checkbox"/>	<input type="checkbox"/>			