

The impact of predation losses on beef cattle in South Africa

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Presented against the backdrop of Coordinated Predation Management

- discussed in the context of

Livestock Production

Wildlife Ranching

Biodiversity and Conservation



Large and medium-sized
African predator species
are increasingly
conflicting with human
activities ...



Canis adustus



Panthera leo

...especially these
two medium-sized
predators...



Canis mesomelas



Caracal caracal



Acinonyx jubatus



Panthera pardus



Crocuta crocuta



Hyaena brunnea

Van Niekerk (2010) estimated that the impact of predation on sheep and goats was more than ZAR 1.39 thousand million

... and for beef cattle?

... study by Badenhorst (2014)

Canis-Caracal Programme



What is the impact of predators on cattle?



Mooi River October 2008



The study and its focus

The study focussed on the direct and indirect cost of predation on cattle in South Africa

Predators

The following carnivore species were implicated as being responsible for predation on cattle: black-backed jackal (*Canis mesomelas*), caracal (*Caracal caracal*), brown hyaena (*Hyaena brunnea*), cheetah (*Acinonyx jubatus*), dogs (*Canis familiaris*) and leopard (*Panthera pardus*)

Direct cost

physical losses of cattle

Indirect cost

prevention and control methods (non-lethal & lethal control)

Data collection

Telephonic survey (sample size = 1 500 farmers)

A structured questionnaire was used to collect data from respondents

Procedures were developed to collect data in the nine provinces of South Africa

The number of respondents in each province was calculated according to the **proportional provincial share** of the national cattle herd

PROPORTIONAL BREAKDOWN OF BEEF CATTLE FARMERS SAMPLED AS RESPONDENTS PER PROVINCE



Province	Farmers	Cattle*	Proportional provincial share (%) of cattle population	Sample size of farmers in a province
Western Cape	6 653	542 928	6.6	100
Northern Cape	5 128	509 475	6.2	94
Free State	7 473	2 215 042	27.1	407
Eastern Cape	4 006	911 010	11.1	167
KwaZulu-Natal	3 574	1 200 578	14.7	220
Mpumalanga	3 523	917 495	11.2	168
Limpopo	2 934	398 604	4.9	73
Gauteng	1 773	256 100	3.1	47
North West	4 499	1 221 538	14.9	224
Totals	39 563	8 172 770	100	1500

***Number of cattle - does not include non-commercial farmers**

Estimating direct cost of predation on cattle

The direct cost of predation was calculated as follows:

The number of cattle in a district was multiplied by the average predation losses in the district to estimate the number of cattle lost by predation.

The number of cattle lost by predation was then multiplied by the unit cost per animal to estimate the total direct cost of predation.

Estimating indirect cost of predation control (non-lethal/lethal)

The indirect cost of non-lethal and lethal predation control was calculated as follows:

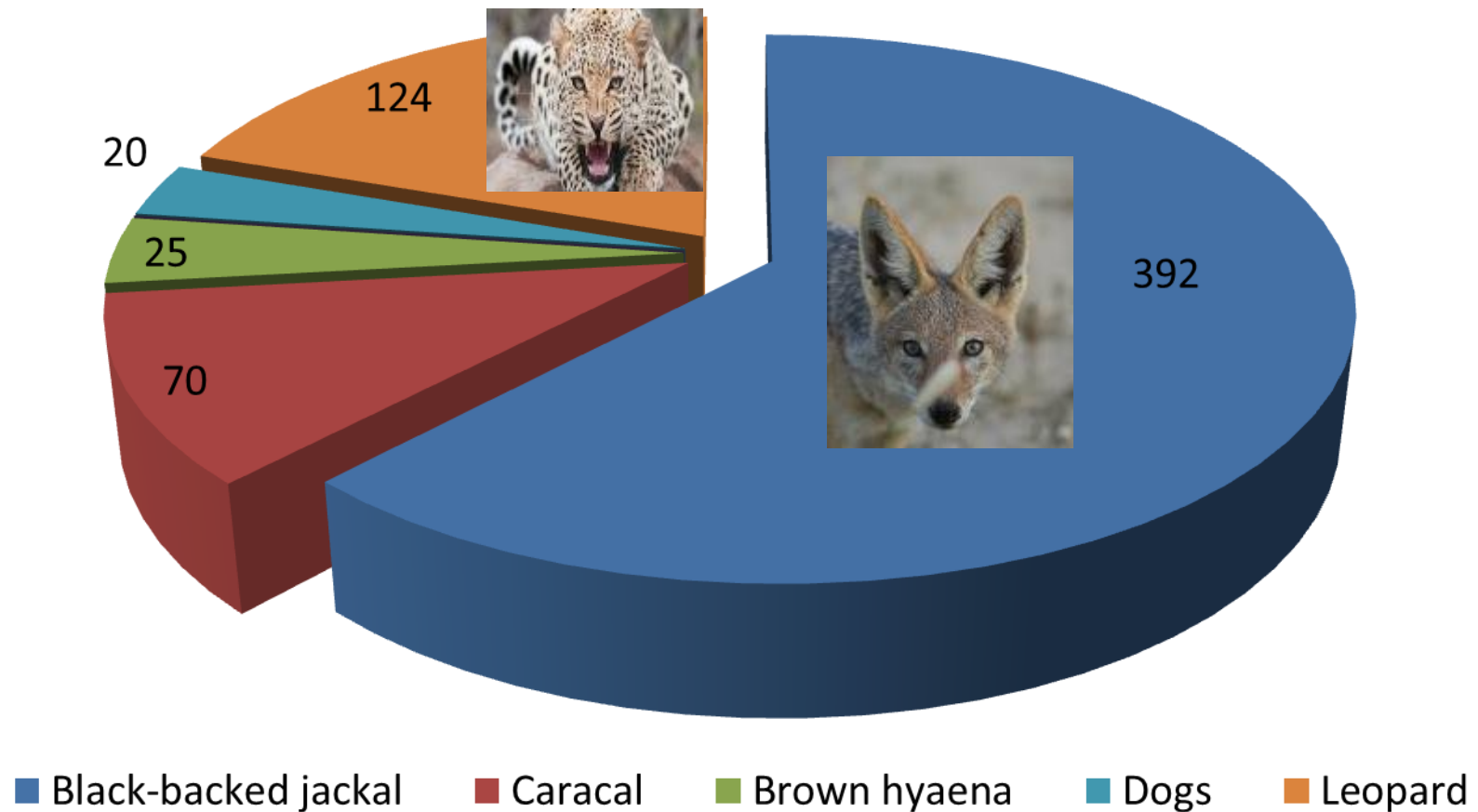
The total indirect cost of non-lethal/lethal predation control in each district was divided by the number of cattle sampled in the district to estimate the unit cost for non-lethal/lethal predation control per animal

The unit cost (non-lethal/lethal predation control) for cattle was then multiplied by the number of cattle in each district to estimate the total indirect cost for non-lethal/lethal control

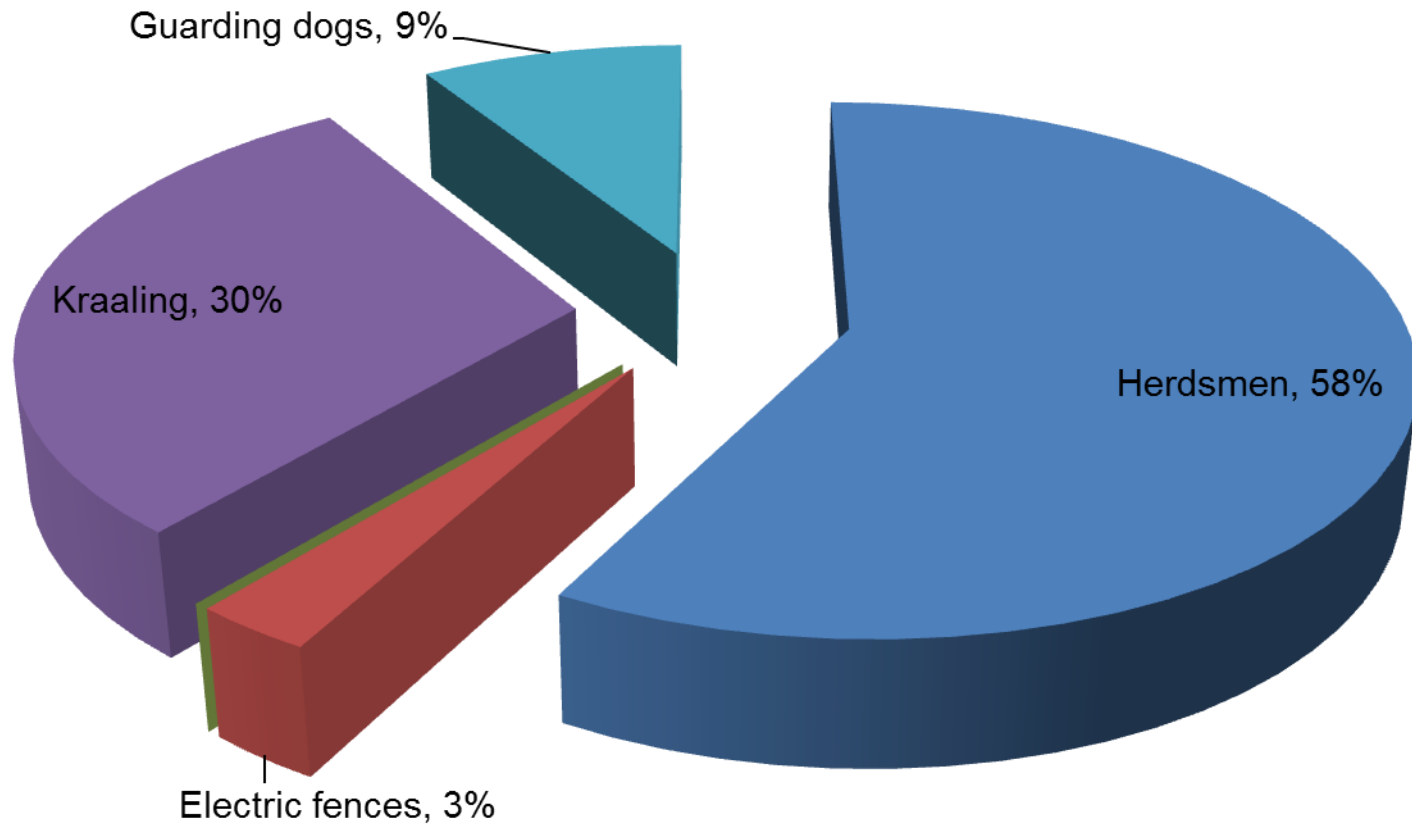
PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN THE NORTH WEST PROVINCE



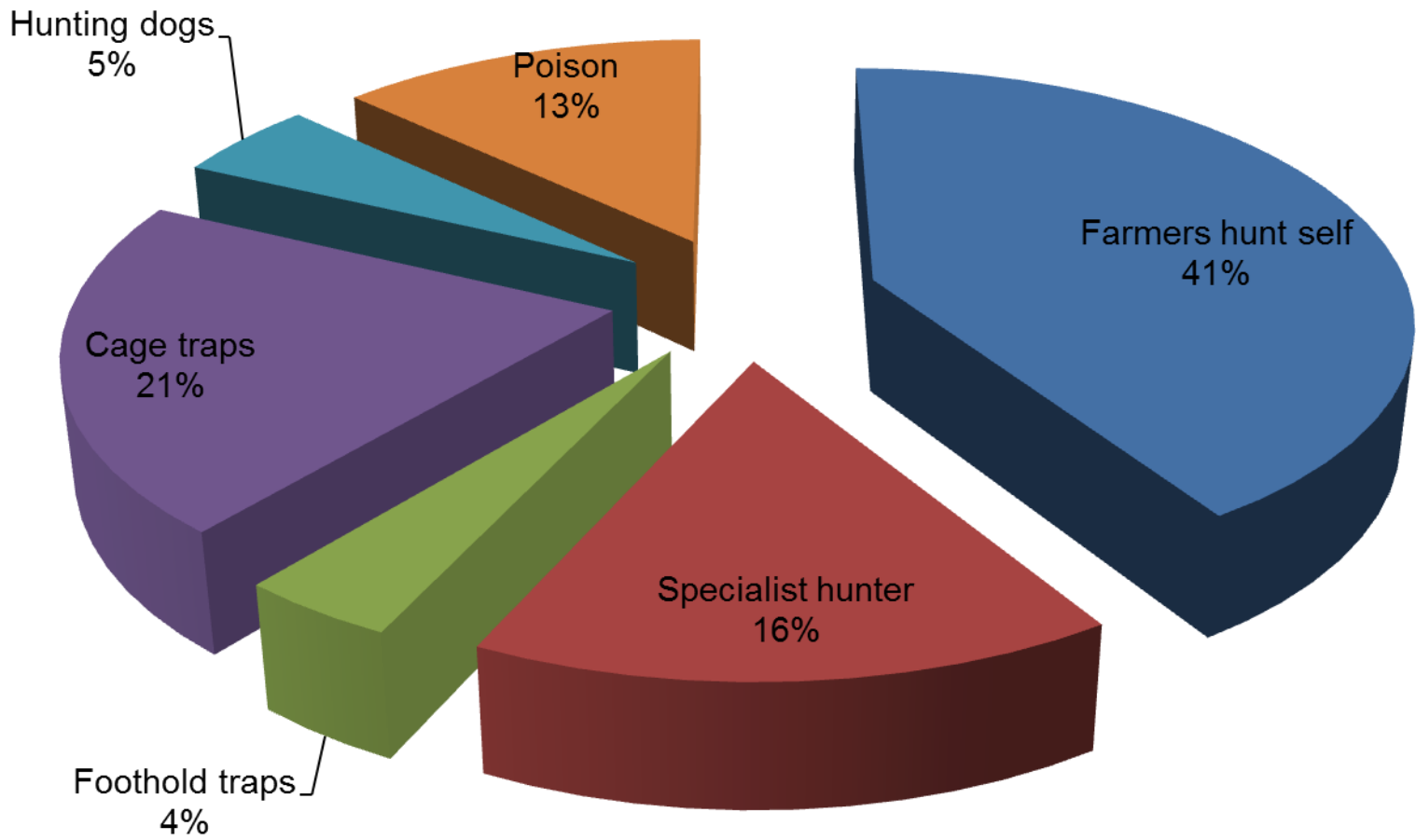
Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 546 120 ha) (631 animals lost from 122 780)



Percentage use of **non-lethal** management methods to prevent cattle predation losses in the North West province



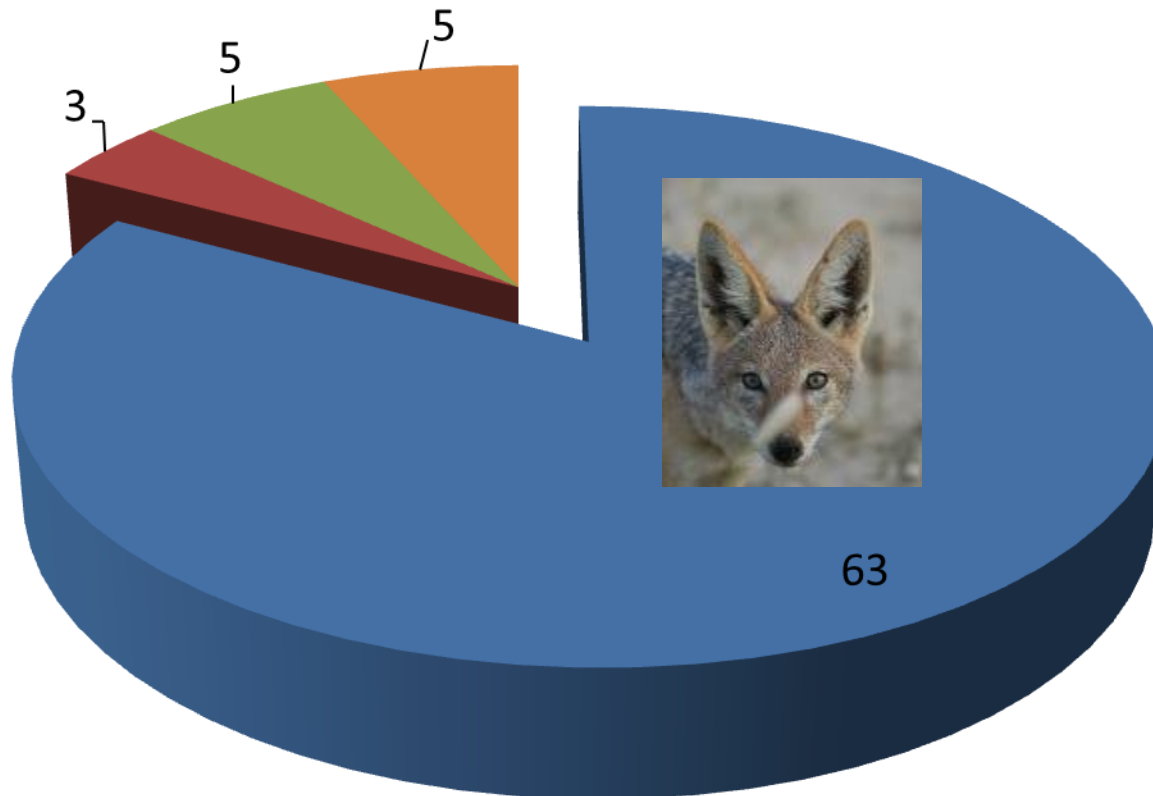
Percentage use of **lethal** methods to control predation in the North West province



PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN THE NORTHERN CAPE PROVINCE



Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 417 953 ha) (76 animals lost from 66 050)



■ Black-backed jackal

■ Caracal

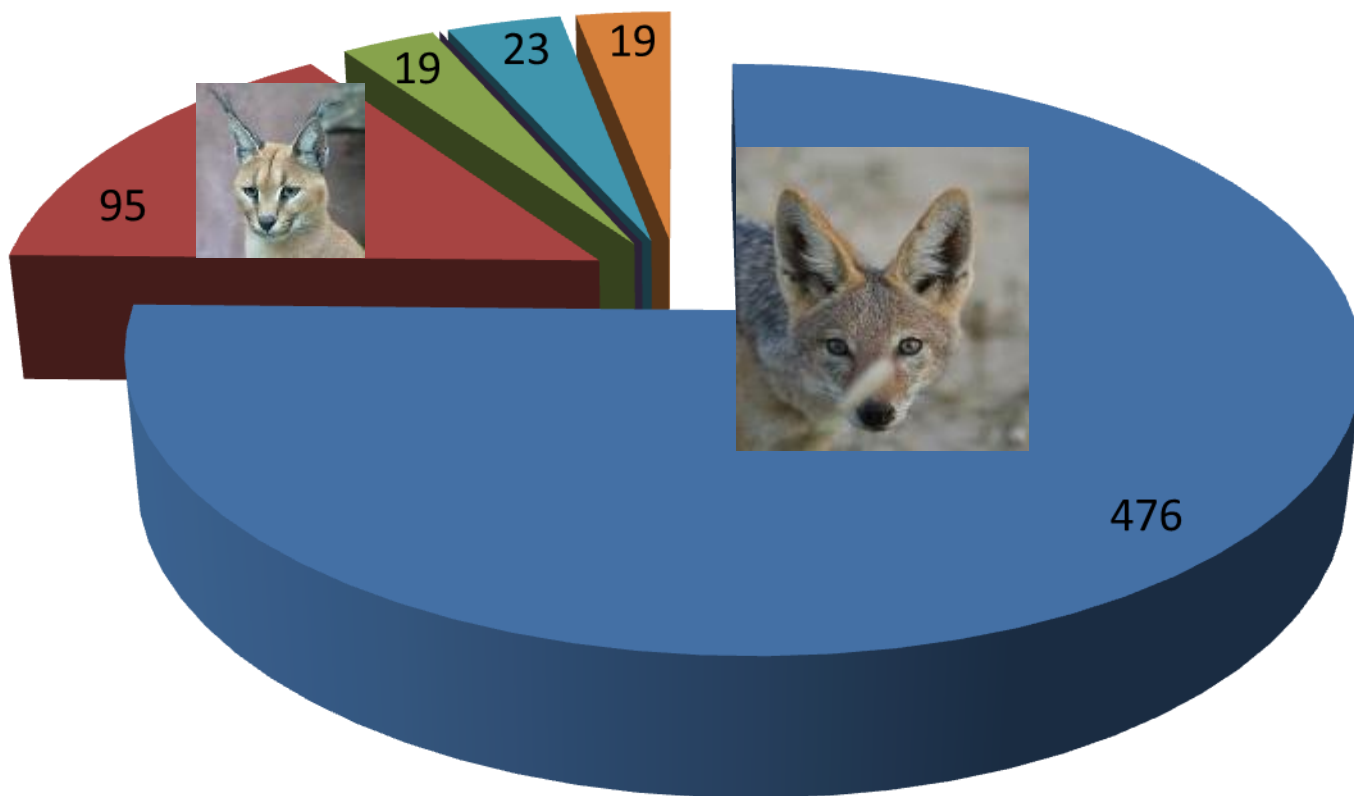
■ Brown hyaena

■ Leopard

PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN THE FREE STATE PROVINCE



Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 716 367 ha) (632 animals lost from 245 983)



■ Black-backed jackal

■ Caracal

■ Brown hyaena

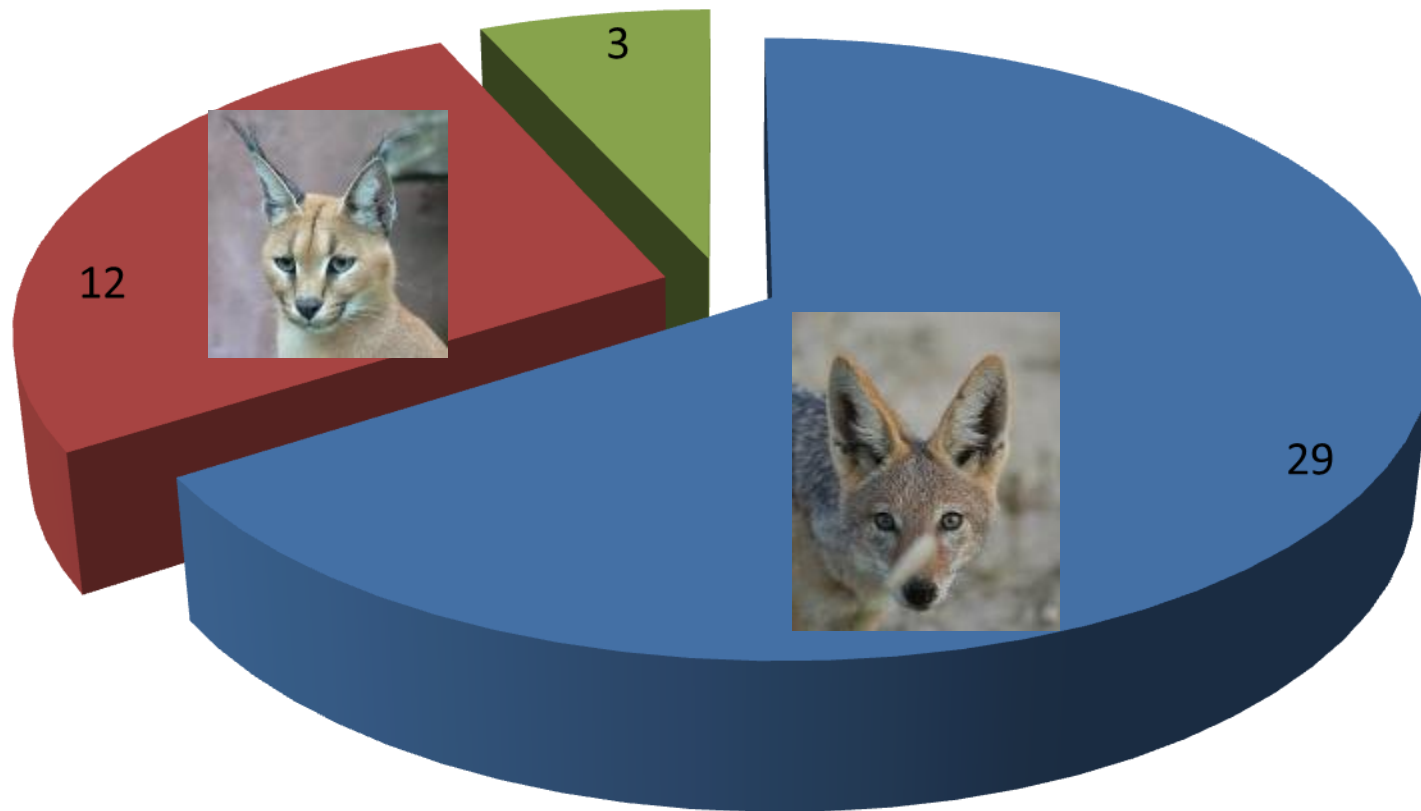
■ Dogs

■ Leopard



PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN THE EASTERN CAPE PROVINCE

Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 511 601 ha) (44 animals lost from 70 911)



■ Black-backed jackal

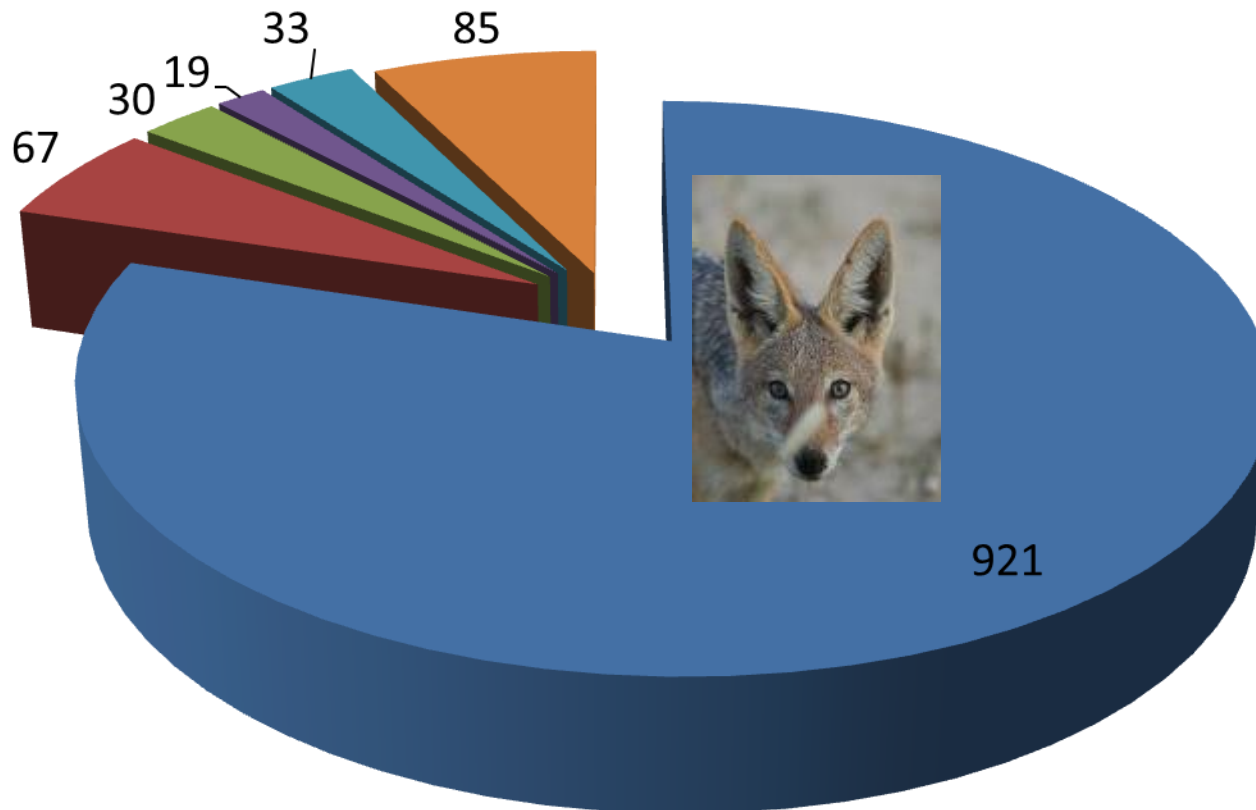
■ Caracal

■ Brown hyaena



PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN KWAZULU-NATAL PROVINCE

Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 527 068 ha) (1 155 animals lost from 231 391)

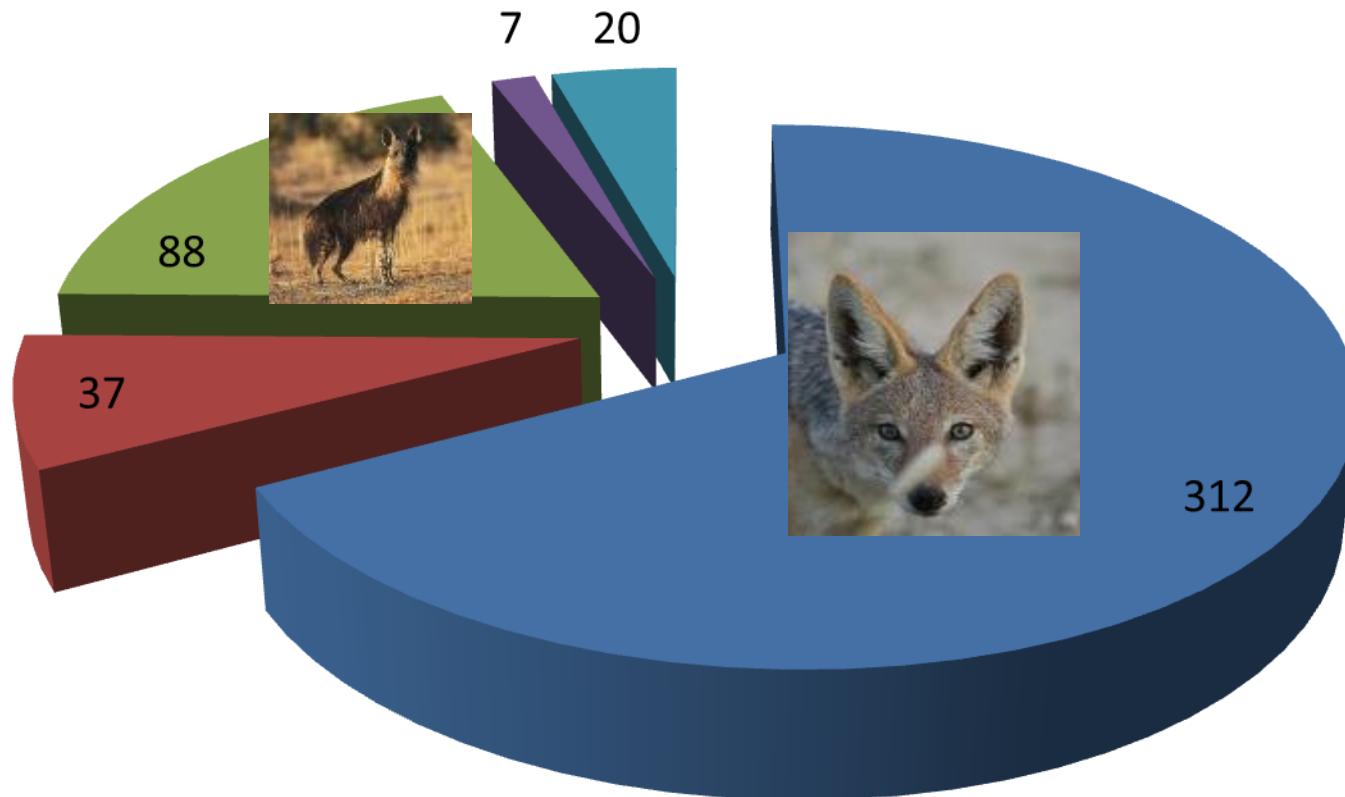


■ Black-backed jackal ■ Caracal ■ Brown hyaena ■ Cheetah ■ Dogs ■ Leopard



PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN MPUMALANGA PROVINCE

Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 393 833 ha) (464 animals lost from 179 078)

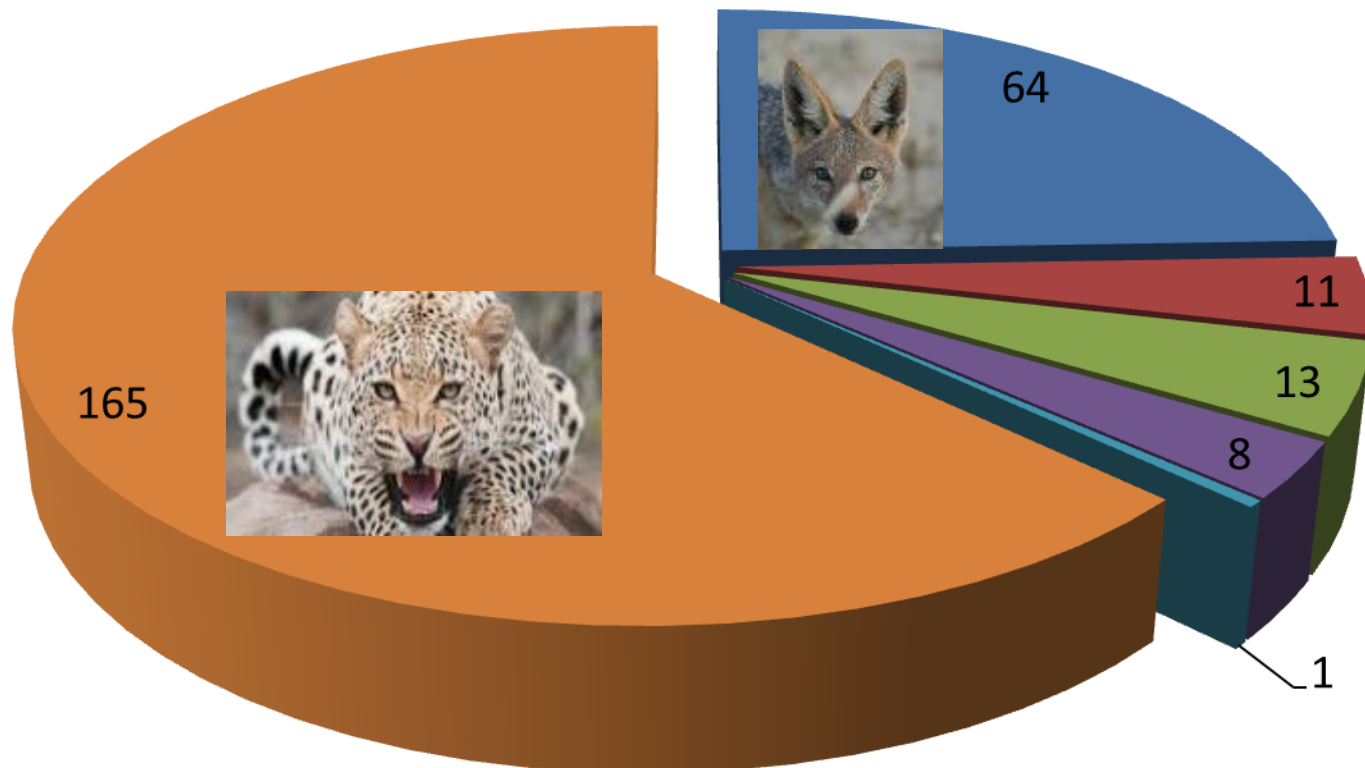


■ Black-backed jackal ■ Caracal ■ Brown hyaena ■ Dogs ■ Leopard



PREDATOR SPECIES RESPONSIBLE FOR CATTLE PREDATION LOSSES IN LIMPOPO PROVINCE

Causes of large livestock losses reported (survey – 2012)
(farm areas surveyed = 204 308 ha) (262 animals lost from 30 489)



■ Black-backed jackal ■ Caracal ■ Brown hyaena ■ Cheetah ■ Dogs ■ Leopard

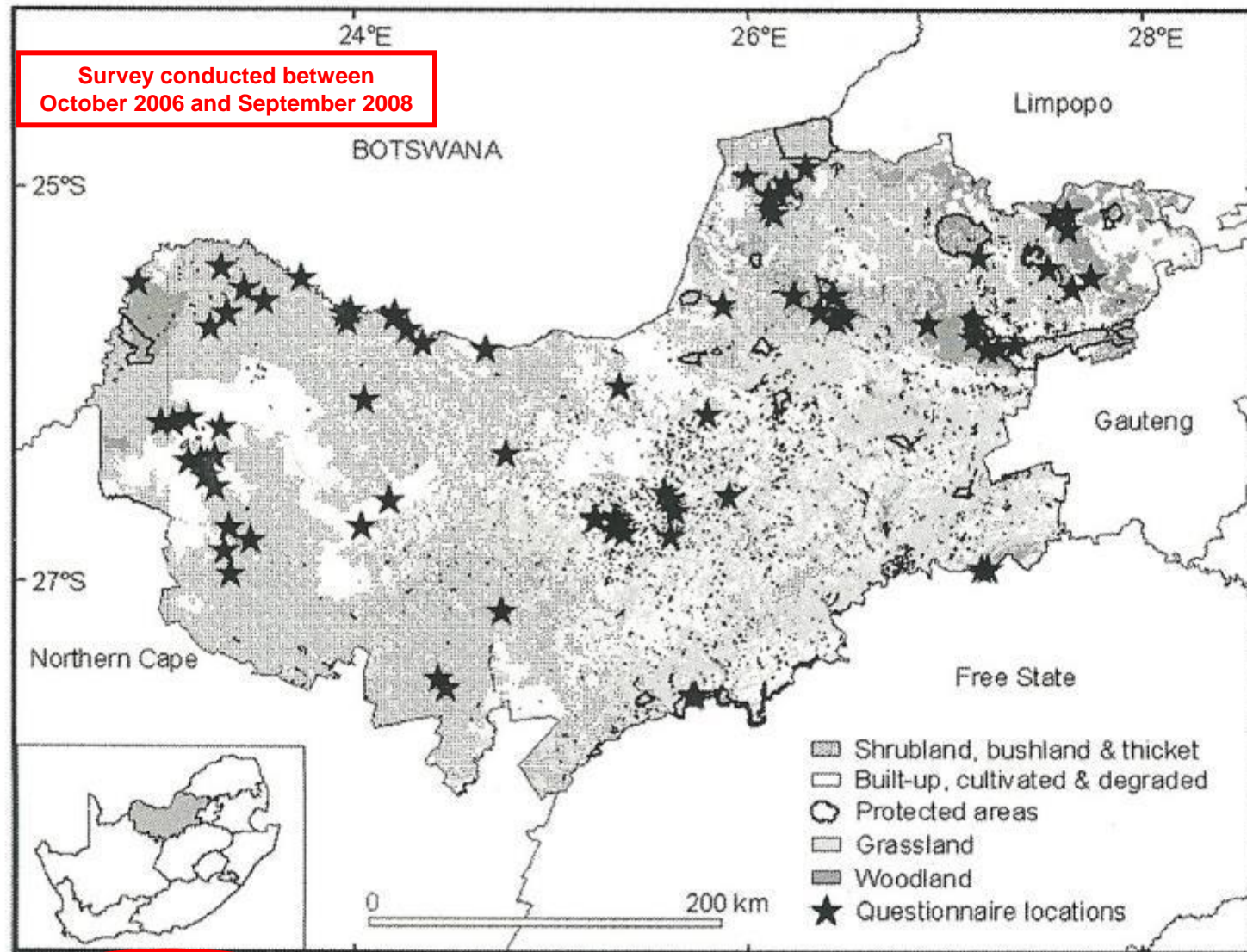


Fig. 1. Questionnaire interview locations ($n = 99$) in relation to main land cover classes in the North West Province. The shaded area on the inset indicates the position of the study area in South Africa.

“Carnivores reportedly killed 3755 animals i.e. 2.27% of total game and livestock holdings. Reported losses were unevenly distributed among individuals, but generally not of sufficient magnitude to constitute a serious economic threat.”

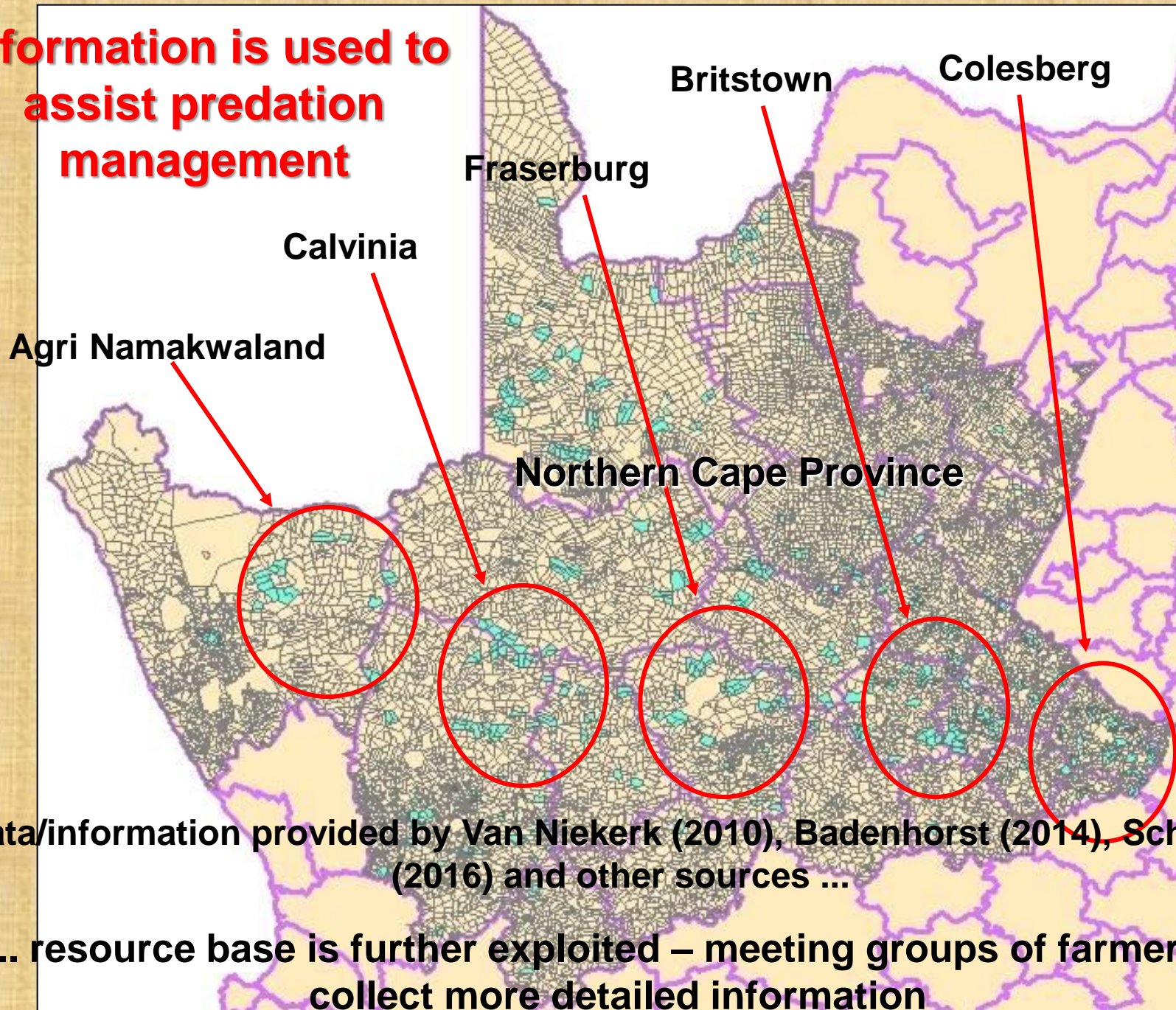
The total direct and indirect costs of predation on cattle in South Africa ^{1,2}

Province	Cost of lethal control (ZAR)	Cost of non-lethal control (ZAR)	Cost of predation losses (ZAR)	Total direct and indirect costs (ZAR)
Northern Cape	2 121 694	12 714 985	5 106 400	19 943 079
Free State	18 692 596	37 007 037	61 900 800	117 600 433
Eastern Cape	238 897	521 940	4 066 400	4 827 237
KwaZulu-Natal	3 547 486	15 243 293	47 237 100	66 027 879
Mpumalanga	3 832 911	9 966 265	30 139 200	43 938 376
Limpopo	3 632 614	4 633 403	38 220 000	46 486 017
North West	7 455 333	9 087 653	67 776 800	84 319 786
Totals	39 521 531	89 174 576	254 446 700	383 142 807

¹ The Western Cape and Gauteng Provinces chose not to participate in the study

² **Calculations did not include the cattle of developing farmers**

**Information is used to
assist predation
management**



Credit Farmers' Weekly



This information assisted in implementing a *Predation Management Centre* at the UFS, Bloemfontein



Coordinated predation management can reduce the impact of predation

Action is now needed ...