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Impact of predation in communal sheep flocks in central Free State

Dr Andries Strauss was part of a research team that conducted a study where data from 9 603 sheep were obtained through interviews with 351 farmers in the Thaba Nchu and Botshabelo areas. Through this study, the financial value, financial implications of losses and mortalities, total losses, as well as causes of predation losses of communal sheep flocks, were determined.

During interviews, researchers used a structured questionnaire to gather quantitative data on small-stock losses over 12 months.

ABSTRACT

The communal wool farmers in the Thaba Nchu and Botshabelo area in the Free State Province struggle to improve their livelihoods. Various limitations, such as diseases and parasites, livestock theft, insufficient capital, high feed costs, challenges in marketing, labour constraints, elevated rent expenses, and a lack of professional knowledge, hinder their ability to make significant economic contributions. This study describes the composition of facts and impacts related to predation in communal sheep flocks in the central Free State Province. Following a cross-sectional descriptive study using quantitative methods. During interviews, researchers utilized a structured questionnaire to gather quantitative data on small-stock losses over a 12-month period. Data were collected from 351 (38%) of the 1255 communal sheep farmers in the Thaba Nchu and Botshabelo districts. The mean monetary worth of a typically communal farmer sheep flock (mean = 27.36 sheep/farmer) was ZAR 30,861.96/farmer, with an attested reduction of 49.2% of the flock (ZAR 16,103.99/farmer) reported by the farmers. The losses were due to various factors, such as diseases and parasites (17.4%), weather conditions (drought, flood, storms) (22.1%), theft (21.2%), predation (12.1%), disputes over pastures and water (4.6%), and other losses (pathologic disorders and accidents) (0.6%). Loss due to predation in communal sheep flocks was 5.9% of the total flock size. Predation results in the loss of 1.63 per 27.36 sheep in the communal flock. Most farmers did not experience any loss due to predation; in most cases, the loss was not more than five sheep per farmer. There was a statistically significant association between the number of sheep older than 12 months and loss due to predators, $\chi^2(7)=7.83$, $p=0.02$. Participants with more than five sheep older than 12 months were likelier to suffer from predators. Most predation loss was due to unpredictable killings by vagrant domestic dogs. Shepherding played the most vital role in reducing damage due to predators.

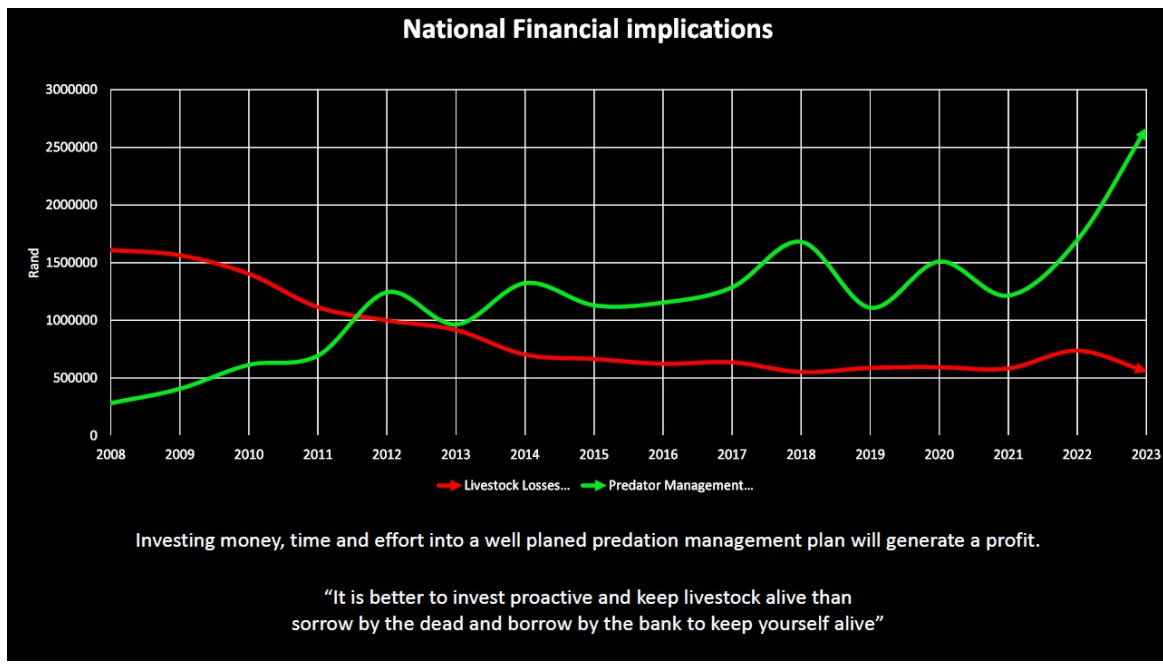
KEYWORDS: Depredation, diseases, farming, livestock, predators, theft, vagrant domestic dogs, weather, South Africa

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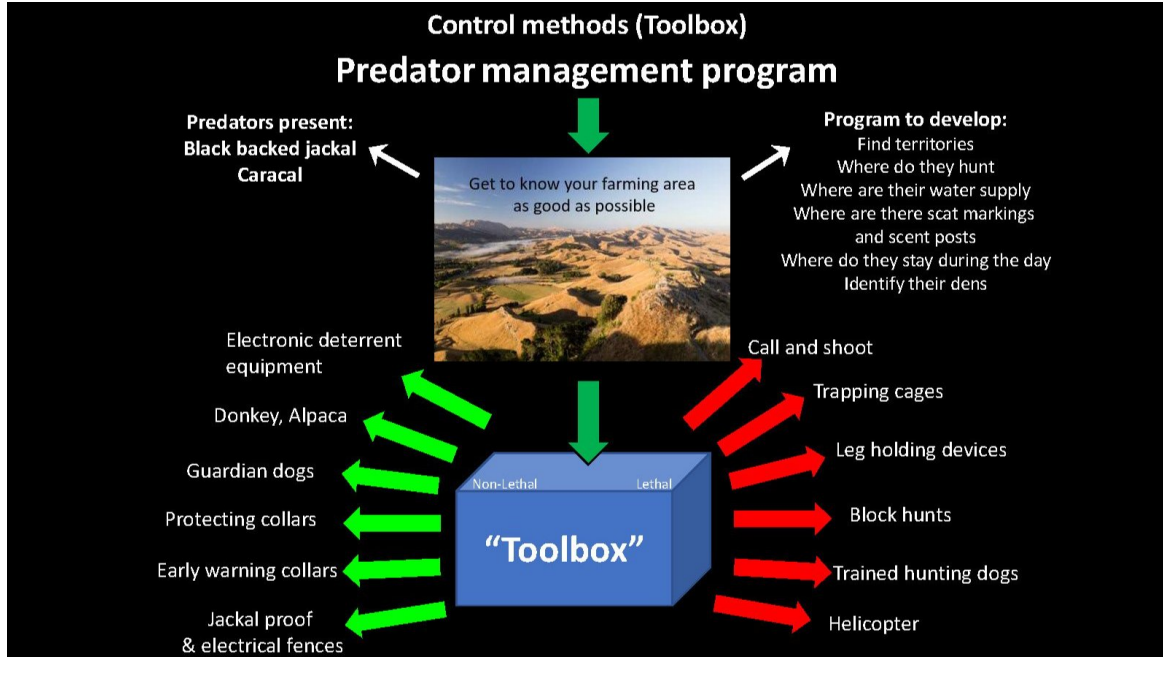
Livestock losses and management costs tracked from 2008 to 2023

According to predation specialist Niel Viljoen, investment in predator management plans is crucial for profitability. During his presentation at the PMSA research workshop, he emphasised the importance of proactive investment in management to prevent financial losses.

Figure 1: National financial implications



The following toolbox of non-lethal and lethal control methods is available to implement effective predation control.



Predation management insights from SWEP

Through the Sustainable Wildlife Economies Project (SWEP), former project coordinator Karlin Muller is helping to build a clearer picture of how South Africa's wildlife ranches contribute to conservation, livelihoods, and sustainable land use.



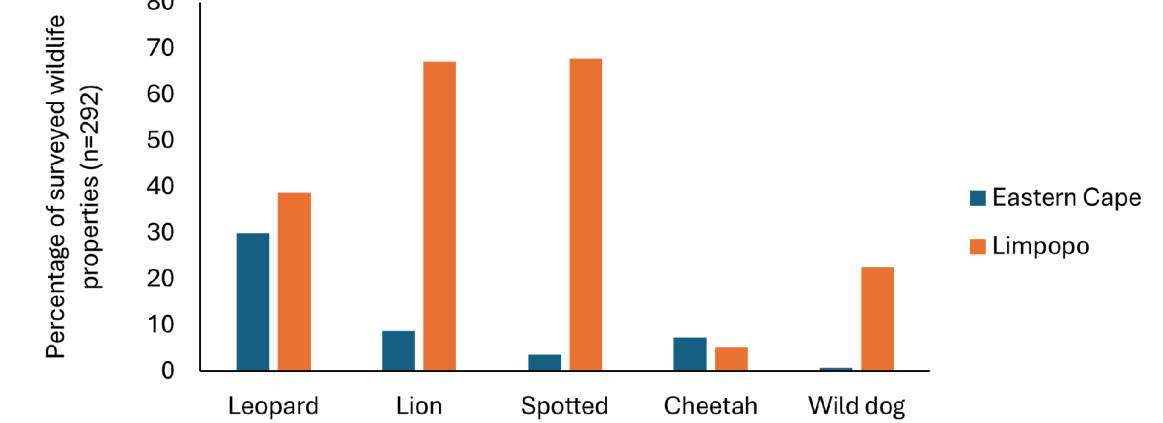
By working closely with landowners and industry partners, SWEP gathers on-the-ground information about how wildlife properties are managed – from land use and animal populations to predator control and the challenges of running a wildlife-based business.

Between 2021 and 2022, SWEP teams interviewed the owners and managers of nearly 300 properties across the Eastern Cape and Limpopo provinces, covering more than 1,6 million hectares of wildlife land. The results offer valuable insights for anyone involved in predation management, as they highlight how widespread predators are on private land and how landowners are responding to their presence.

Large predators on private land

The surveys showed that 62% of properties manage large predators, most commonly lion, spotted hyena, and leopard. Predator presence was higher in Limpopo (76% of properties) than in the Eastern Cape (35%), as seen in Figure 2, likely due to differences in habitat, species composition, and management priorities.

Figure 2: Percentage of surveyed wildlife properties with large predator presence



How landowners in the Eastern Cape manage predation

In the Eastern Cape, about 58% of survey respondents said they actively manage predators that pose risks to their animal populations, mainly targeting black-backed jackal and caracal. The most common approach remains lethal control, including night hunts, hounds, helicopter or professional hunter shooting, and predator calling. Some landowners also use traps, electrified or predator-proof fencing, and kraaling of livestock to reduce losses.

The feedback from landowners revealed a wide range of experiences and opinions. For example, some landowners reported losing 15 to 20% of livestock annually, while others felt that natural selection should run its course. A few also expressed a desire to move toward more sustainable or "responsible" predator management approaches.

Why it matters for predation management

These findings make it clear that predation management is not just an ecological issue; it's also deeply tied to the economic realities of running a wildlife or livestock enterprise. Understanding how landowners balance conservation goals with financial sustainability can help identify practical, locally relevant solutions.

SWEP's data also creates opportunities to link predation management strategies to wildlife business models (e.g., trophy or meat hunting and ecotourism), helping to unpack the context in which certain methods are used and what drives different management decisions.

Opportunities

With SWEP's findings, there is potential for research to compare regional predation management trends, especially between the Eastern Cape and Limpopo provinces, and to identify predator-specific challenges. These insights can support future initiatives such as the development of a Predator Management Framework (PMF) currently lacking in Limpopo, and guide collaborative approaches across provinces.

By combining ecological data with real-world experiences from landowners, SWEP is helping to inform a more balanced and sustainable future for South Africa's wildlife sector, one where both predators and people can thrive.

Get in touch

To learn more about SWEP and opportunities to collaborate, please email Karlin Muller at karlin7muller@gmail.com. Muller is currently pursuing an MSc in Conservation Biology at the University of the Free State.

Fencing in livestock, fencing out conflict?

By Dr Beanelri Janecke, manager of the Predation Management Centre, University of the Free State

In many rural communities around the world, farmers and pastoralists live alongside lions, leopards, hyenas, and other carnivores. While these predators are vital for ecosystems, livestock raids pose serious economic risks — and in many places, retaliation against wildlife has caused species declines.

A scientific study suggests a non-lethal tool that is an improvement on a previous design: **fortified chain-link livestock enclosures**. Not only do they protect the animals inside, but they also appear to reduce predator attacks on neighbouring farms — creating what scientists call a "beneficial spillover effect."

Researchers, together with conservation groups, analysed thousands of monthly reports from livestock farmers who live in the area around the Ruaha National Park in southern Tanzania. They compared attacks in households that adopted chain-link corrals with those in neighbouring farms and those using traditional thorn-bush enclosures ("bomas"). Read the original article at <https://pbiys.org/news/2025-03-chain-link-predator-livestock.html>

Some striking results:

- Within households using the chain-link enclosures, risk of predation dropped by 94% in the short term, and by 60% in the longer term.
- Importantly, neighbouring farms also saw fewer attacks, even though they hadn't installed the fortifications themselves — the first known demonstration of a spillover benefit in this context.
- Economically, the intervention pays off. After just five years, the value of livestock saved tends to exceed the cost of building the fence by 3 to 7 times. For many farms, the 'break-even' investment happens within three months to two years.

The researchers suggest that predators may simply start avoiding neighbourhoods where multiple fortified enclosures make attacks more difficult or risky. In other words, once a cluster of farms is protected, the local 'predator buffet' looks less inviting.

Even though the intervention was tested in Tanzania, its broader principle — that proactive, non-lethal tools can support coexistence — has relevance in many parts of the world. The authors note that understanding local predator-human dynamics is essential for scaling similar approaches elsewhere. For maximum impact, such interventions will need local adaptation (materials, design, and cost share), stakeholder buy-in, and good monitoring to understand how they play out in different ecosystems.



A livestock owner in Tanzania uses this chain-link corral to protect his livestock from predators at night. (Photo: Lion Landscapes)