



**Report:
Livestock &
Predation Management
2008 – 2023**

**MONITOR FARMS TO ASSESS MANAGEMENT
TOOLS IN SUPPORT OF PREDATION MANAGEMENT
TRAINING IN SOUTH AFRICA**

April 2024

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Foreword

The initiative to implement and experiment with different livestock- and predator management strategies, had its origin in 2008 under the guidance of the National Wool Growers Association of South Africa (NWGA). The objective was to find and formulate workable and manageable strategies that involved both predators as well as livestock.

The research platform involved various farms distributed nationally, including most of the provinces, and covering different ecological areas in different rainfall regions.

To protect and preserve nature is sometimes an underestimated statement. The time to realise and underline the importance of coexistence of all affected parties involved is now. All human beings, especially those who work and operate within nature (including farmers: commercial, emerging, and communal), must understand the importance of a well-balanced and healthy biodiversity. This is crucial for all life, as well as the future of our planet.

Human-wildlife conflict (HWC) and coexistence remains a definite concern and challenge for our modern world.

Protecting, assisting, and training all farmers who occupy the frontline when it involves conflict with wildlife, is a priority for food security and the survival of an ever-increasing human population. Research provides a basis to protect and restore ecosystems, ensuring that farming activities function within a well-balanced and healthy biodiversity.

This project is managed and implemented in partnership with Predation Management South Africa (PMSA). This report (longest continuous predator research and monitored project in South Africa's history) aims to provide feedback on the findings and results formulated over the past sixteen years.

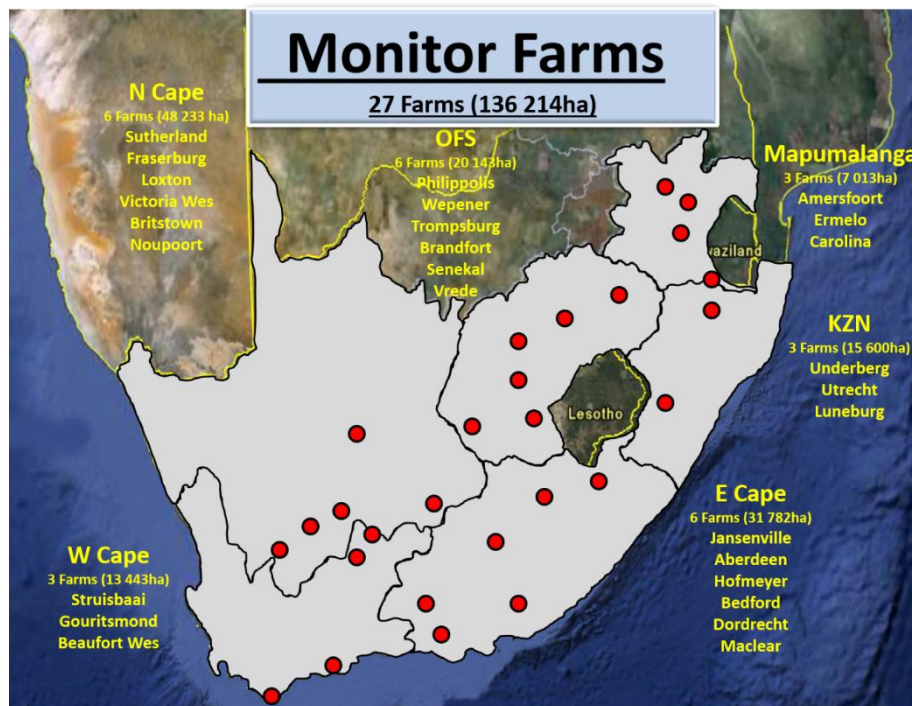


Monitor farms

In South Africa the total land use for commercial agriculture is approximately 46.4 million hectares, which represents 37,9% of the total land area of the country. In 2008 a total area of 136 214 hectares (27 farms) were identified for evaluating adaptive management strategies, which should be sustainable and workable under the unique South African commercial farming conditions.

These farms are referred to as monitor farms dating back to 2008 and which represent areas with different rainfall, vegetation, and ecosystems for developing, initiating and experimenting with sustainable management strategies in commercial livestock- and wildlife industries.

This is truly a research project for farmers supported by farmers, structured under Predation Management South Africa (PMSA) and funded mainly by the Red Meat Producers' Organisation (RPO) and the (NWGA).



Provincial results

Livestock management (although it appears to be constant throughout South Africa) varies a lot within each province and is very specific for each individual farm. To generalize a livestock management plan for the whole country would be impossible and irresponsible. Basics could always be a guideline, but successful management develops from experience on each individual farm.

Significant variation in livestock management practices between farms is also true for predators and predation management practices. Blanketing South Africa with one management plan that is supposed to be full proof is not achievable and needs to be developed for each farm.

The following parameters (but not limited to) are considered:

- Rainfall
- Temperature
- Humidity
- Topography
- Vegetation

To simplify: let the farm talk. Consider all the parameters, and start planning and building a livestock management plan, including predation management which best fits the unique situation.

Twenty-seven different monitor farms, representing twenty-seven different ecosystems, managed by twenty-seven different livestock producers, and influenced by twenty-seven different mindsets, provided the foundation of this report over the past 16 years.

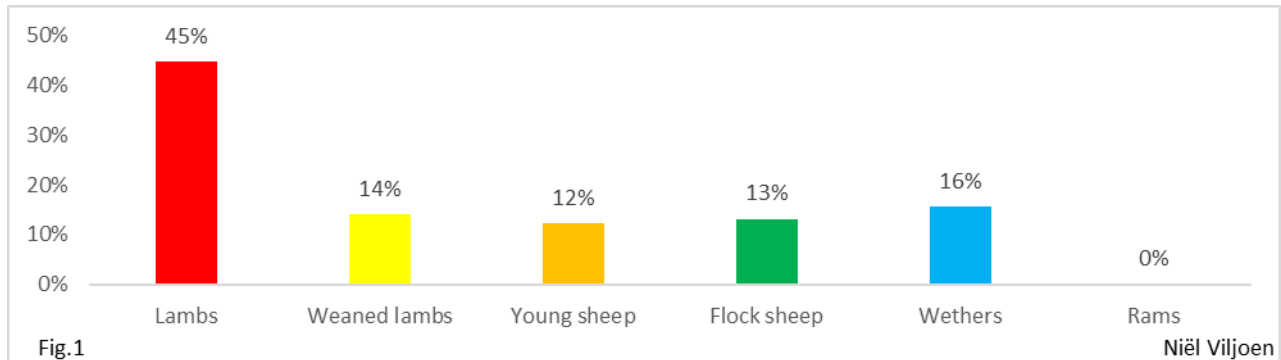
Graphic comparisons, explaining three categories, provide a better understanding regarding the following:

- Distribution of livestock losses
- Impact of an integrated livestock-management program on livestock
- Financial implications

Distribution of livestock losses

(The age and weight differences of livestock caught by predators)

1. KwaZulu-Natal (Fig.1)



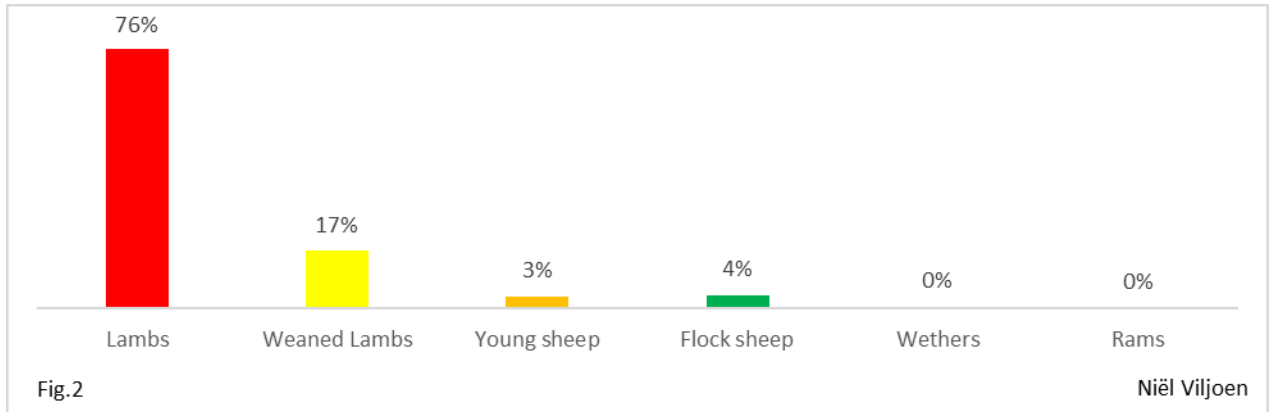
- Summer rainfall (Late November through December extending into January)
- Lambing season - September/October – March/April
- Livestock management – Lambing pens/camps
- Predator management – Human herding/call & shoot/Trapping cages/Leghold devices

Summary:

Around 55% of predation occurs on adult sheep. Livestock management plays a crucial role and by moving sheep from protected areas to less protected areas (i.e., up in mountains), will have a huge impact. For the Black backed jackal, with an average body weight of about 9kg, to bring down an animal weighing 50-60kg will take some effort. These losses are proof that jackal may also hunt in packs.

The incredible adaptive behaviour patterns of these scavengers are like apex predators that are responsible for attacks on and killing bigger livestock like calves, cows and bigger game such as blesbok and impala.

2. Western Cape (Fig.2)

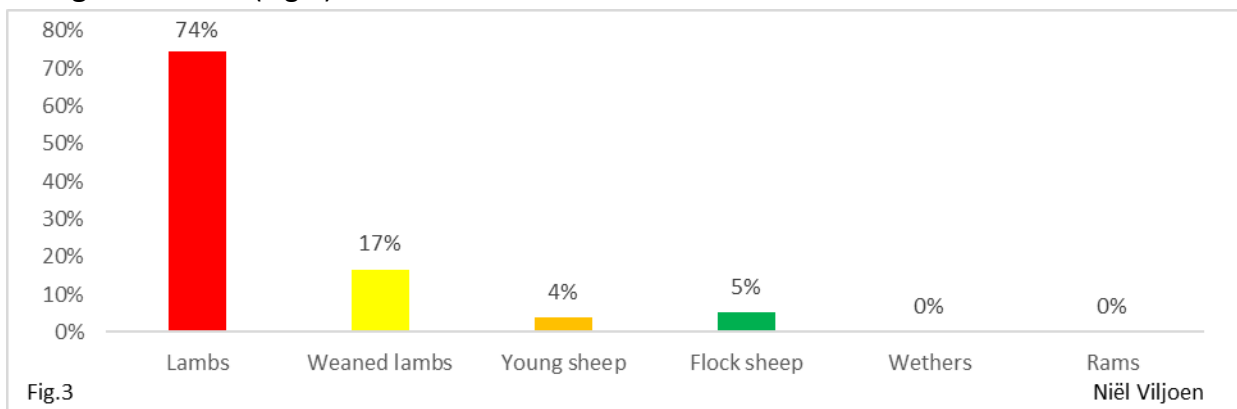


- Winter rainfall (May to August)
- Lambing season - September/October – March/April
- Livestock management – Kraal at night/lambing camps
- Predator management – Human herding/call & shoot/Alpaca guarding animals/Trapping cages/Leghold devices

Summary:

Livestock losses due to predation mainly occur on lambs (from new-born up to wean). This indicates that predator numbers are under control. Predator attacks on livestock consequently only occur when these animals are vulnerable and exposed.

3. Orange Free State (Fig.3)



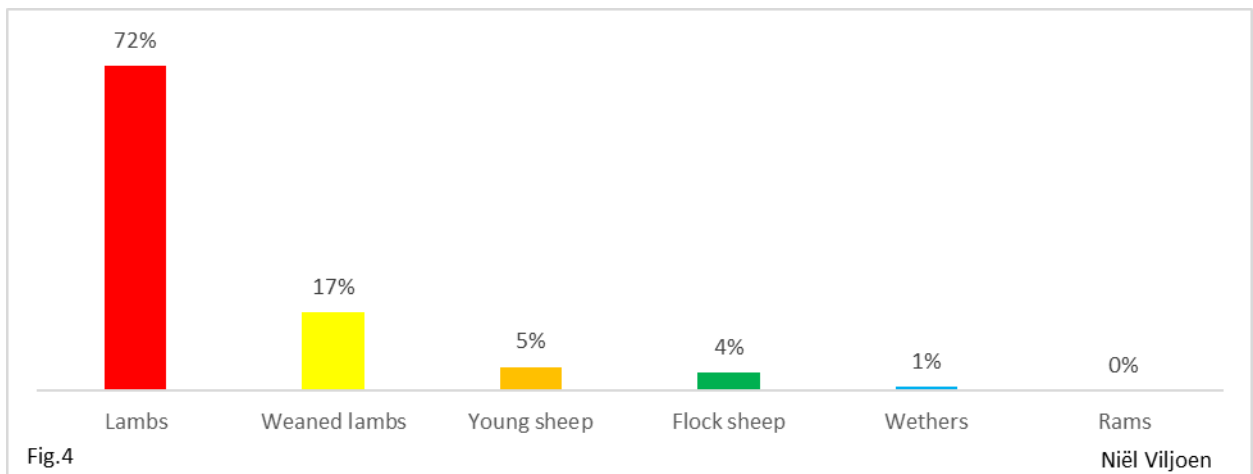
- Summer rainfall (October to April)
- Lambing season - September/October – March/April

- Livestock Management – Lambing pens/lambing camps
- Predator management – Call & shoot/Jackal proof fencing/Electric fencing/Trapping cages/Leghold devices

Summary:

As for the Western Cape, the Orange Free State is an almost exact version of the livestock losses on younger sheep (new-born to weaning age). Statistics show that 75% Lambs and 17% Weaned lambs are the main losses due to predators.

4. Northern Cape (Fig 4)

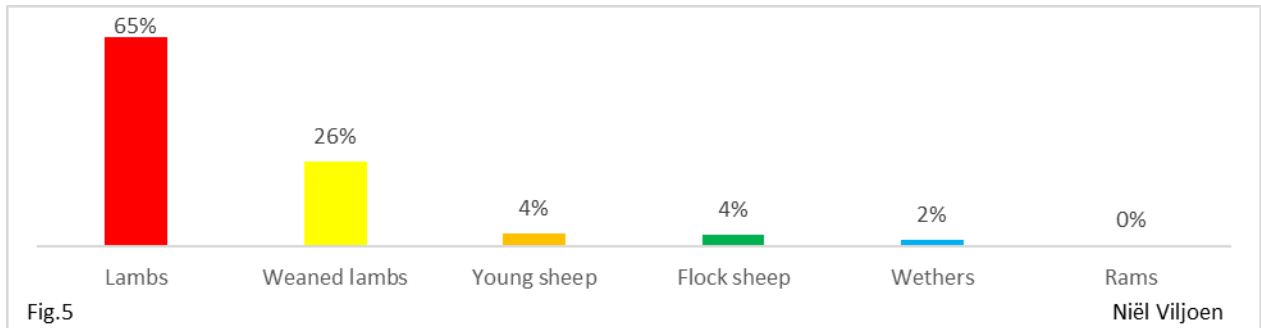


- Summer rainfall (November to April)
- Lambing season - September/October – March/April
- Livestock Management – Lambing pens/camps/extensive lambing
- Predator management – Call & shoot/Jackal proof fencing/Electric fencing/Trapping cages/Leghold devices

Summary:

Predation again mainly occurs on livestock ranging from new-born to wean. Predator numbers are controlled by means of a lethal control method (call and shoot). Due to this area being semi-arid in nature, an extensive, natural lambing season is the main practice.

5. Eastern Cape (Fig.5)

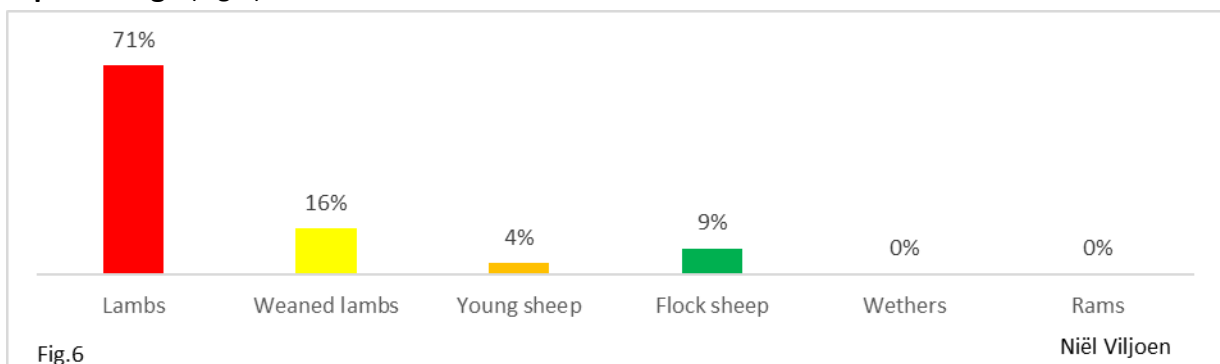


- Rainfall distributed more evenly throughout the year
- Lambing season- September/October – March/April
- Livestock Management – Lambing pens/camps/extensive lambing
- Predator management – Call & shoot/Jackal proof fencing/Electric fencing/Anatolian herding dogs/Trapping cages/Leg hold devices

Summary:

Predation occurs mainly during the first few months after birth up to wean. Topography differences have a huge impact on the practical use of call and shoot. Predation trends lean away from the black backed jackal and more towards losses due to caracal.

6. Mpumalanga (Fig.6)



- Rainfall season (October to March)
- Lambing season- September/October – March/April
- Livestock Management - Lambing pens and lambing camps
- Predator management – Call & shoot/Jackal proof fencing/Electric fencing/Trapping cages/Leg hold devices

Summary:

Livestock management by means of lambing pens and lambing camps have a positive effect on protecting livestock from predators. When leaving these protective areas make young and small livestock the main prey for mainly Black backed jackal. Notably is a slight increase in losses on fully grown sheep and breeding ewes that often fall prey to Black backed jackal.

The numbers of these predators and population density are responsible for almost the same adaptive behaviour as in KwaZulu Natal, where these predators operate as a united pack, bringing down larger prey than the prey normally attacked by these predators.

Impact of an integrated livestock predation management program on livestock

(The effect of a predation management program on both livestock and predators and the actual number of livestock losses on an annual basis).

1. KwaZulu-Natal

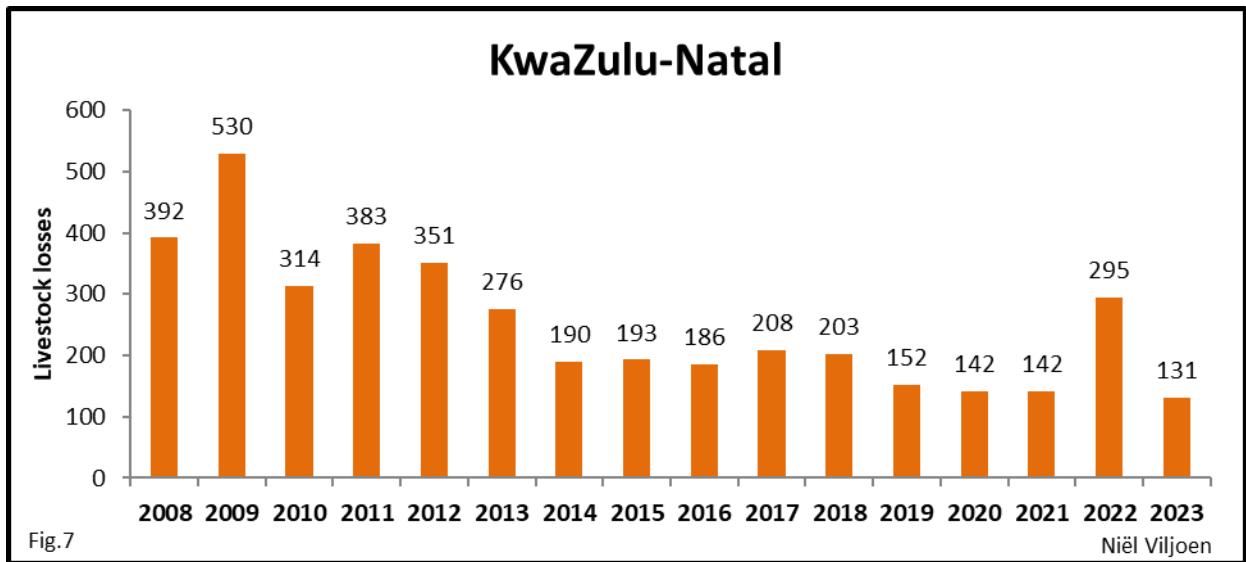
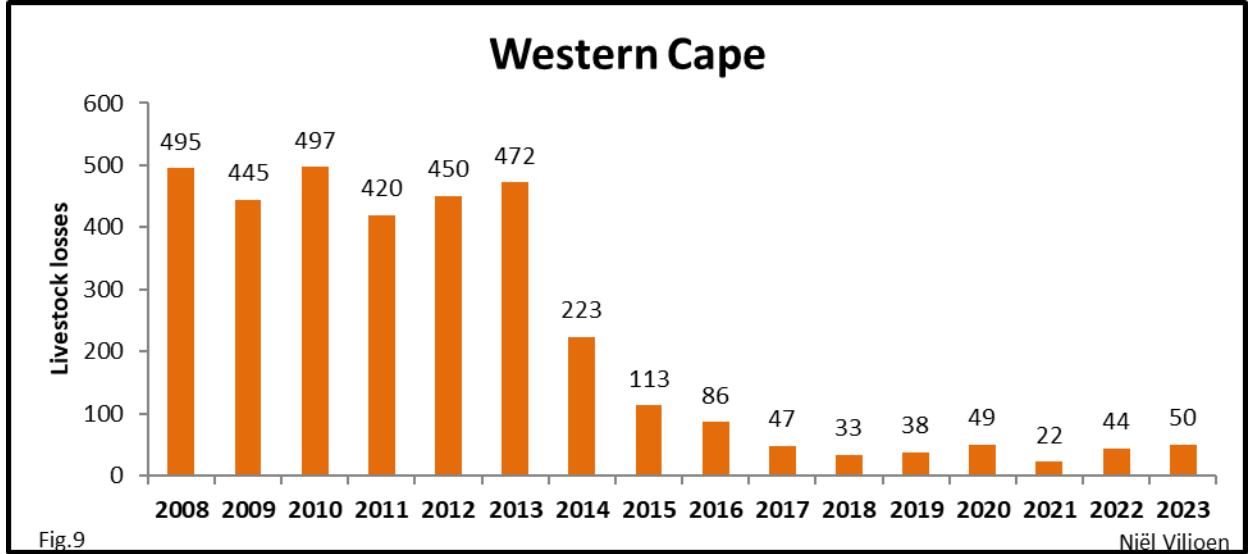


Figure 7 above indicates the actual number of livestock lost annually due to Black backed jackal and caracal. The effect of management practices over the sixteen-year period resulted in a constant decline in the number of livestock that farmers lost due to predation.

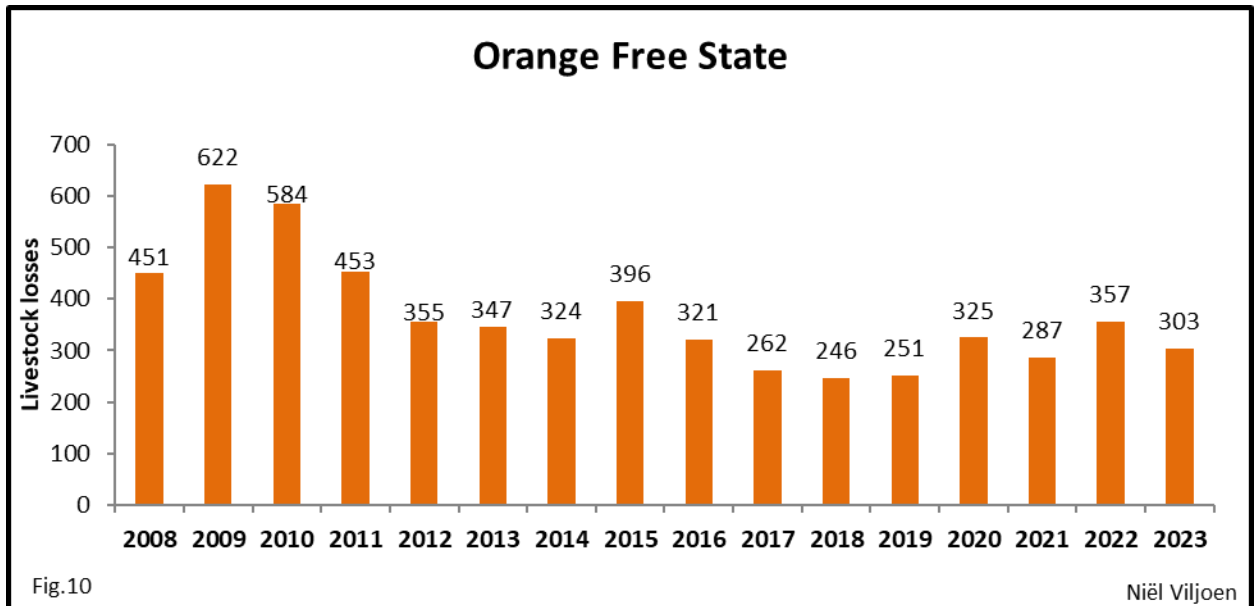
The sudden increase of livestock losses for 2022 was due to the abnormal high rainfall. Wet conditions resulted in most of the lethal control methods not to be applied effectively. The year 2023 had closer to normal rainfall patterns and lethal control methods were used more successfully, resulting in a decrease of livestock losses, as those predators causing livestock losses could be eliminated.

2. Western Cape



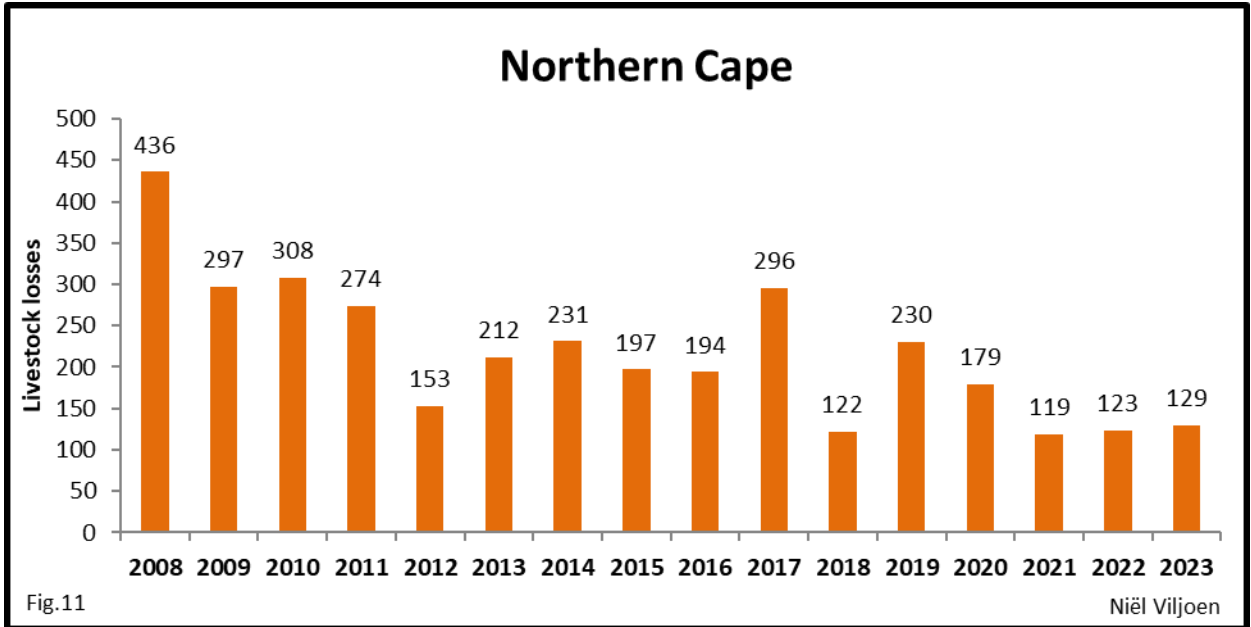
Livestock losses in the Western Cape (Fig.9) were acceptable and continued to remain within an overall good average over the past six years. A year with less rainfall than the previous ensured a normal livestock- and predator management approach implemented with success.

3. Orange Free State



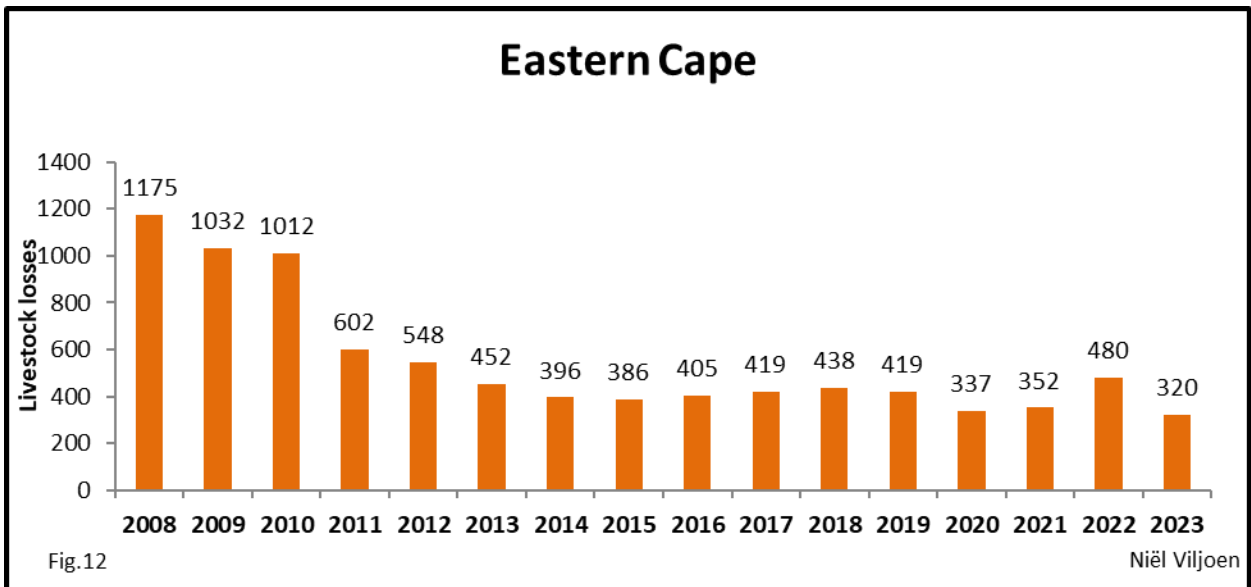
Livestock losses in the Orange Free state (Fig. 10) also indicate a slight decrease after 2022 which was an abnormal wet year.

4. Northern Cape



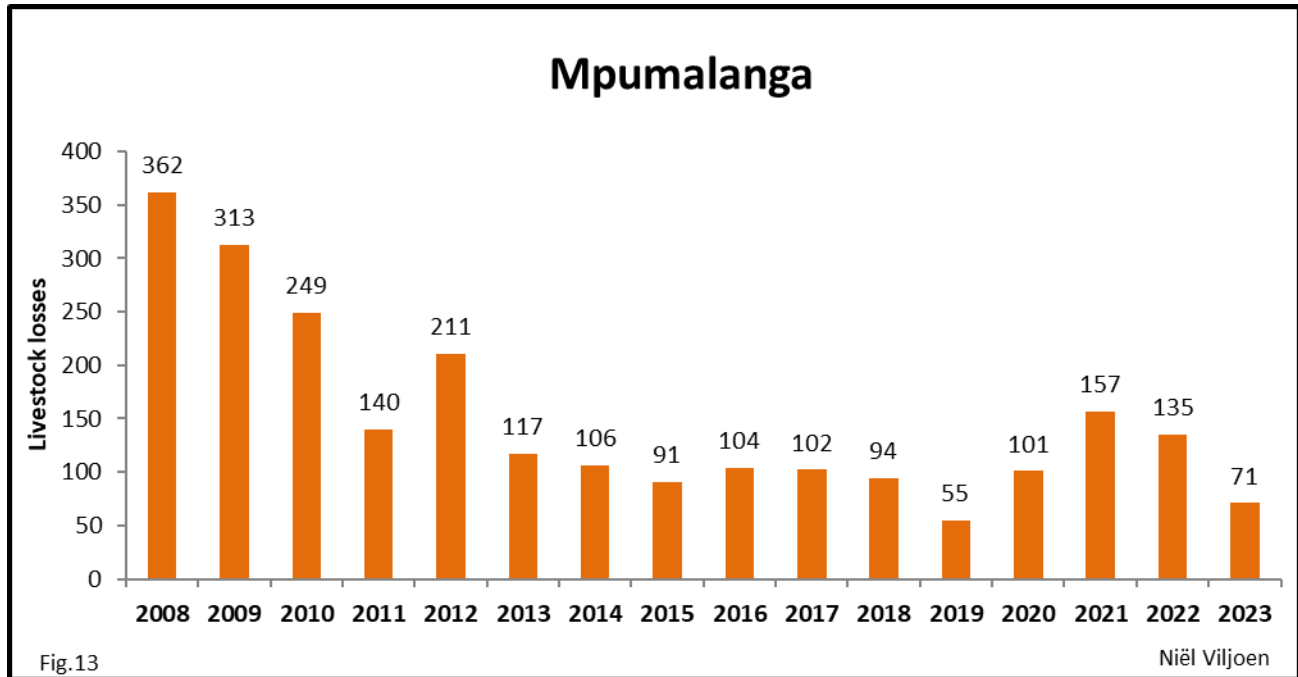
The Northern Cape (Fig.11) experienced a fairly normal year and existing livestock- and predation management practices ensured continued success.

5. Eastern Cape



The Eastern Cape (Fig.12) experienced a decrease in livestock losses after abnormal wet conditions during 2022. Lethal control methods were again possible as was the case over many years before 2022.

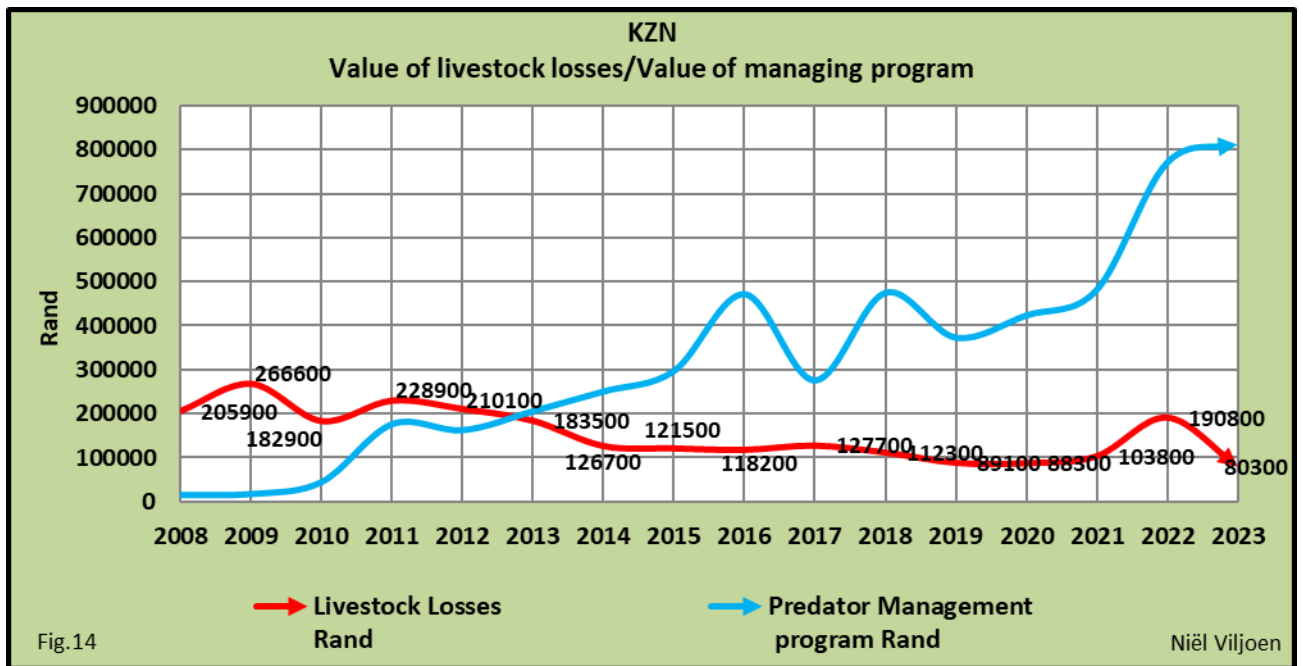
6. Mpumalanga



In Mpumalanga, (Fig.13) livestock losses decreased slightly, as workable and acceptable livestock- and predation management approaches were possible, ensuring a decline in livestock losses.

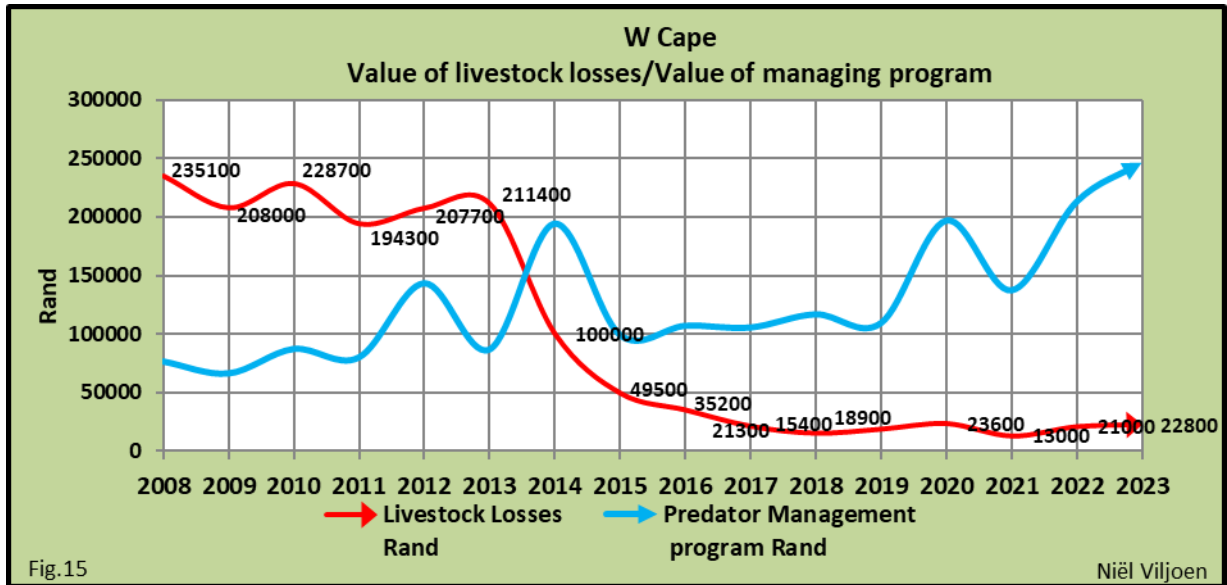
Comparison in value of livestock losses to the cost of a predation management program.

1. KwaZulu-Natal



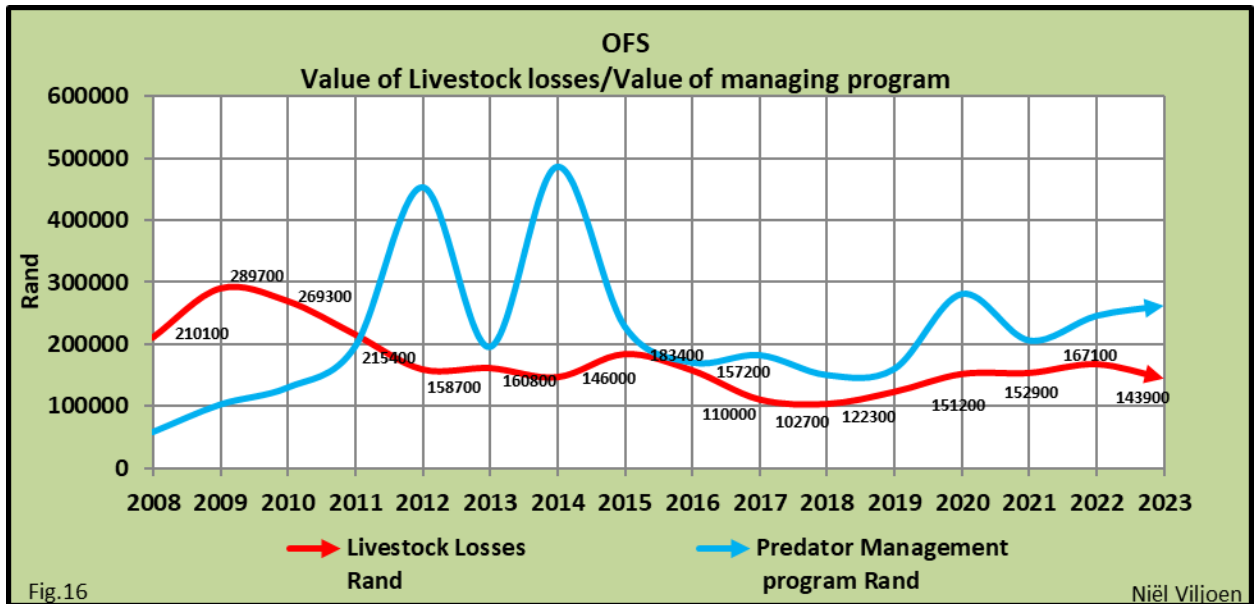
(Fig.14) The stability in financial losses from 2014 up to 2021 (2022 the exception with the high rainfall and not being able to use trustworthy lethal control methods) indicate that predation management is up to a good standard. The concern on the other hand must definitely be the huge financial investment made to obtain the stability of losses during the past eight years. The main contributor to this huge financial increase was the implementation of a non-lethal control method, namely human livestock guards at night to protect the livestock. Unfortunately, this control method's financial cost is directly linked to minimum wages, an uncontrollable annual increase which has a negative impact on the future of this control method. The gap between the value of livestock losses and the financial obligation to sustain this control method is widening every year.

2. Western Cape



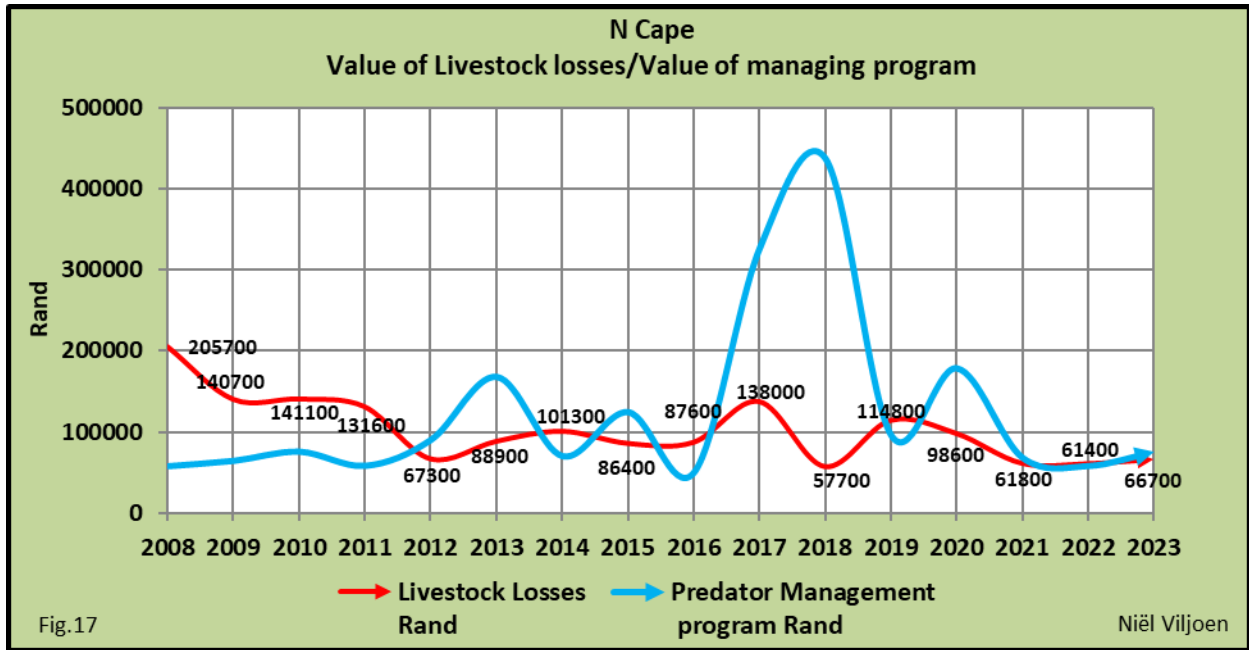
(Fig.15) This is the province with the most outstanding results for managing livestock and predators. The success is a combination of non-lethal as well as lethal control methods. Protection is provided during the day (Alpaca) and night (Kraal), supported by the elimination of persistent predators by means of call and shoot.

3. Orange Free State



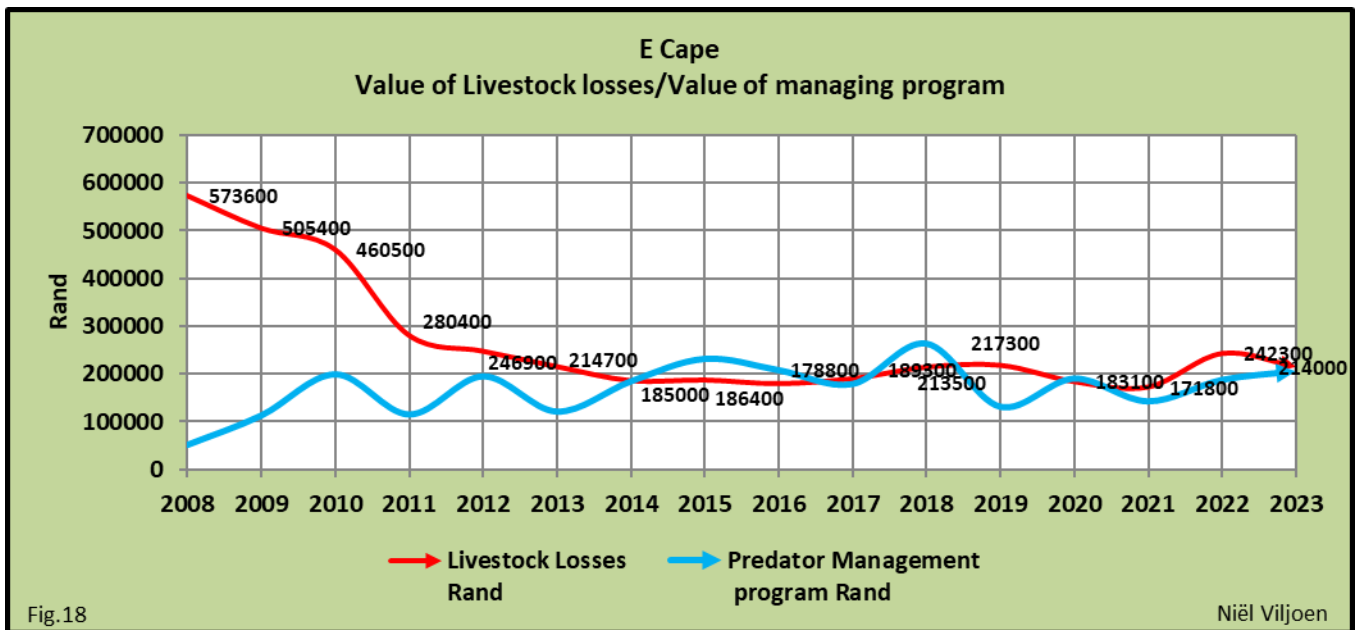
(Fig.16) For the Orange Free State the constant adaptive management strategies are securing a stable financial input and minimal financial losses.

4. Northern Cape



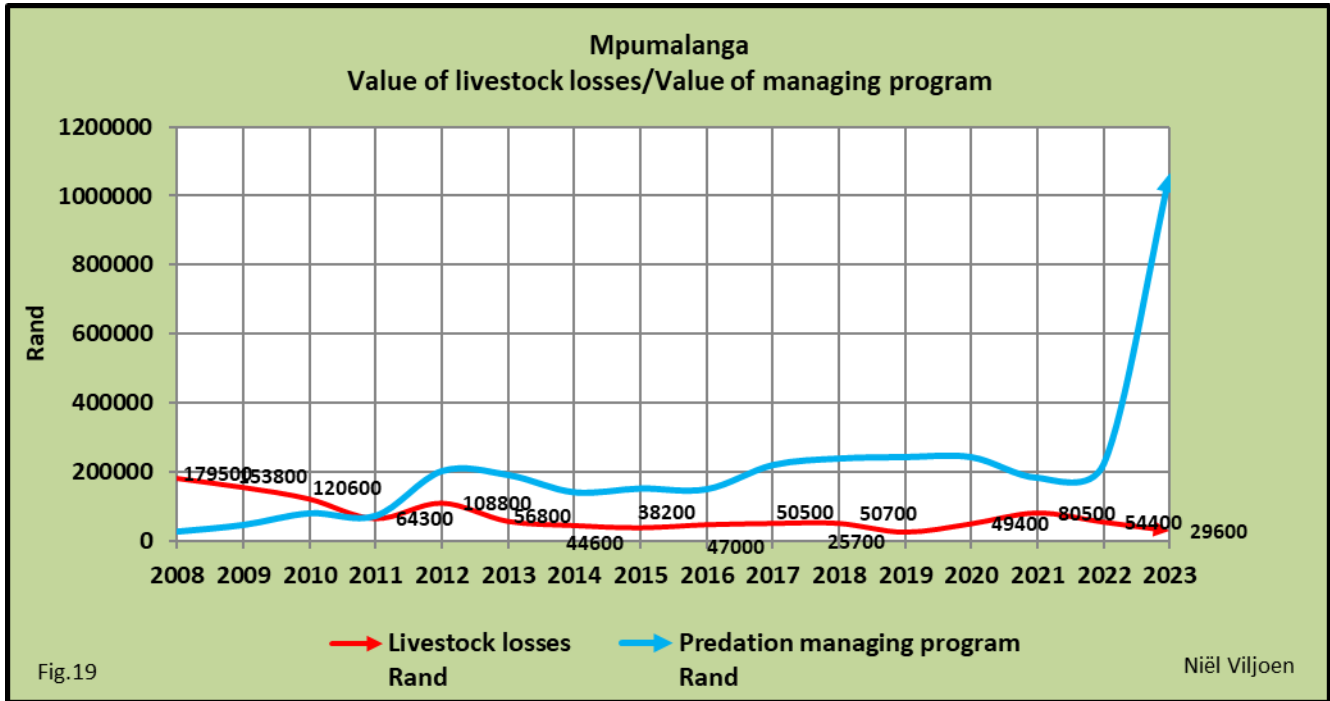
(Fig.17) The stability between losses and cost over the past eleven years, the learning experiences and proactive management strategies practiced in the Northern Cape are excellent examples of successful livestock and predation management.

5. Eastern Cape



(Fig.18) Running neck on neck with the Western Cape, the Eastern Cape is one of the provinces with the most outstanding and sustainable results.

6. Mpumalanga

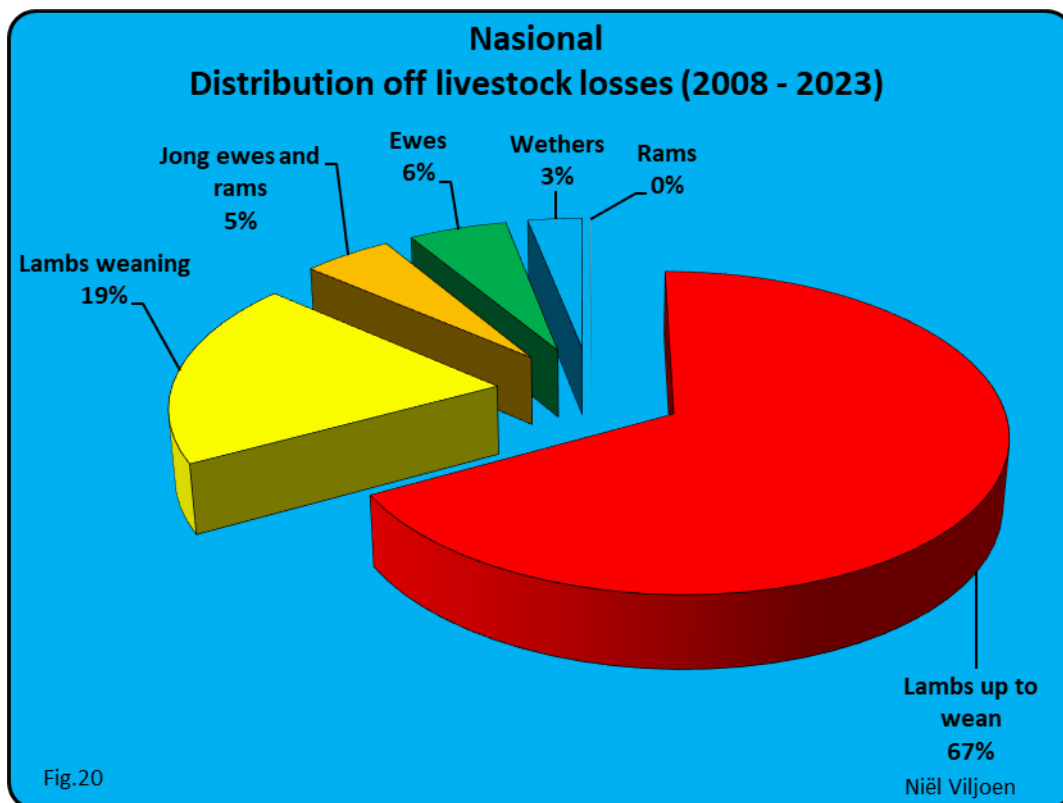


(Fig.19) The average financial investment to keep livestock losses down and as stable as possible is clearly visible. The sustainability of these adaptive management strategies secure workable solutions for this province. With the ever-increasing stock theft, herding of all livestock at night to protect them from both predators and theft added a significant increase to input costs.

National results

Summarizing the provincial results will give a clear indication of the improvement made on a national level regarding livestock and predation management approaches. Considering that different provinces, with different rainfall seasons, different lambing seasons and a huge variation in vegetation and topographic combinations are involved, all these factors do have a significant influence on management strategies. Progress and success have however been accomplished during the past sixteen years by livestock farmers to secure a solid, financially viable production environment within a healthy biodiversity.

In the diagram below (Fig.20) the preference of livestock of the two main damage causing predators, Black backed jackal, and caracal, is clearly visible.



Newborn lambs, up to a weight of approximately thirty-five kilograms, are the most common on which these predators focus. Indicated in the figure above is that 67% of all livestock losses fall in this category. As lambs grow bigger and heavier the tendency to fall prey to jackal and caracal decrease, although weaners do stand second in line with 19% losses due to predators. Fig. 20 confirms that lamb losses up to wean is 67%. Adding weaned lamb losses of 19% equals a total of 86% on young sheep due to predators.

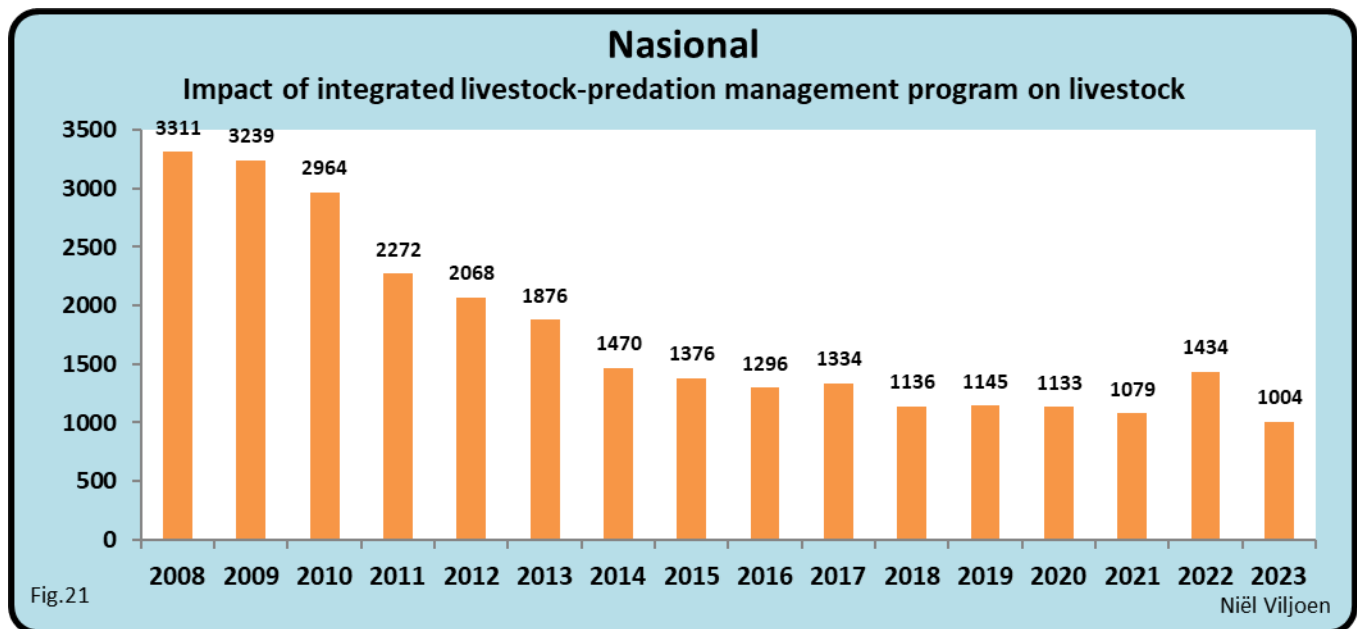
Once adulthood has been reached, losses due to predation are respectively 5% on young ewes and rams, 6% on adult ewes and 3% on fully grown wethers. Important to mention that predator numbers do play a significant role and must be managed, specifically highlighting the Black back jackal in this case.

A brief explanation with the insights of charts, will explain the following categories on a national level in more detail:

- Livestock losses
- Predators
- Livestock losses comparing to predators eliminated
- Balance between different unwanted predators eliminated
- Predation percentage
- Financial implications

Livestock losses

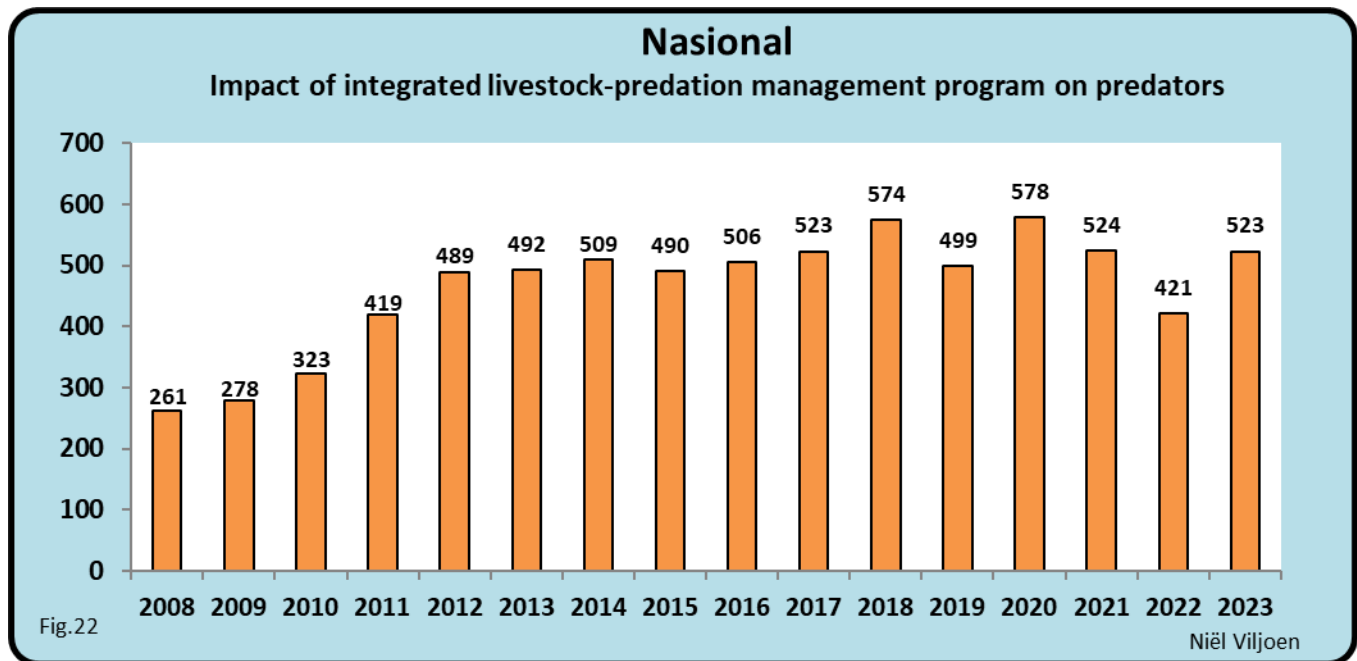
In the diagram below (Fig.21), the results of the past sixteen years of intensive livestock predation management are clearly visible when livestock losses are considered. Livestock losses due to predators were drastically reduced. During 2008 the total number of losses on all the monitor farms were 3 311. These losses were reduced over the sixteen teen-year period to 1 004 during the last year recorded. This indicates a decline of 2 307 less livestock lost due to predators, a decline of 70% compared to 2008.



Extreme weather conditions with more than the average rainfall had an impact on the effectiveness of control methods such as trapping cages, leg holding devices and the most trustworthy and widely used, call and shoot.

Predators

Fig.22 reflects the impact of the livestock predation management program where unwanted predators were eliminated. Call and shoot by a qualified and skilled predator specialist is preferred by most farmers, because this method is predator specific and immediate results are experienced.

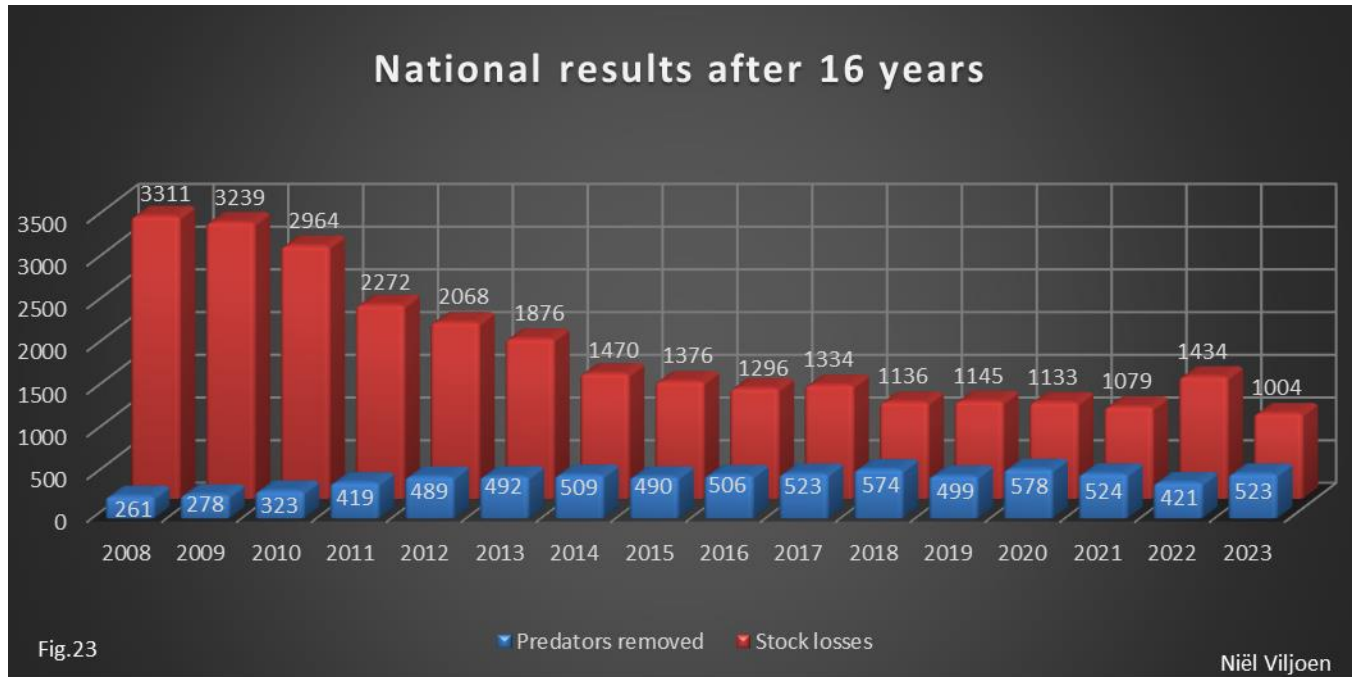


The sudden drop in 2022 with the elimination of unwanted predators could be linked to extreme weather conditions year-round, making it impossible for professional hunters and farmers to track down predators in the wet conditions.

During 2023 weather conditions normalized again and the number of predators eliminated was almost the same as in 2021.

Livestock losses compared to problem predators eliminated

The graph (Fig.23) below compares the two previous graphs (Fig.21) and (Fig.22) to better understand, and give a clear perspective on the implementation, duration, and outcome of the management program for the sixteen-year period.



The abnormal wet conditions during 2022 where rainfall was above normal, clearly had an impact on both livestock losses as well as predators removed. With conditions more favourable during 2023 the management program was able to continue at its normal pace.

Ratio between the two different unwanted predators eliminated

The graph below (Fig.24) reveals annual livestock losses compared to Black backed jackal and caracal removed.

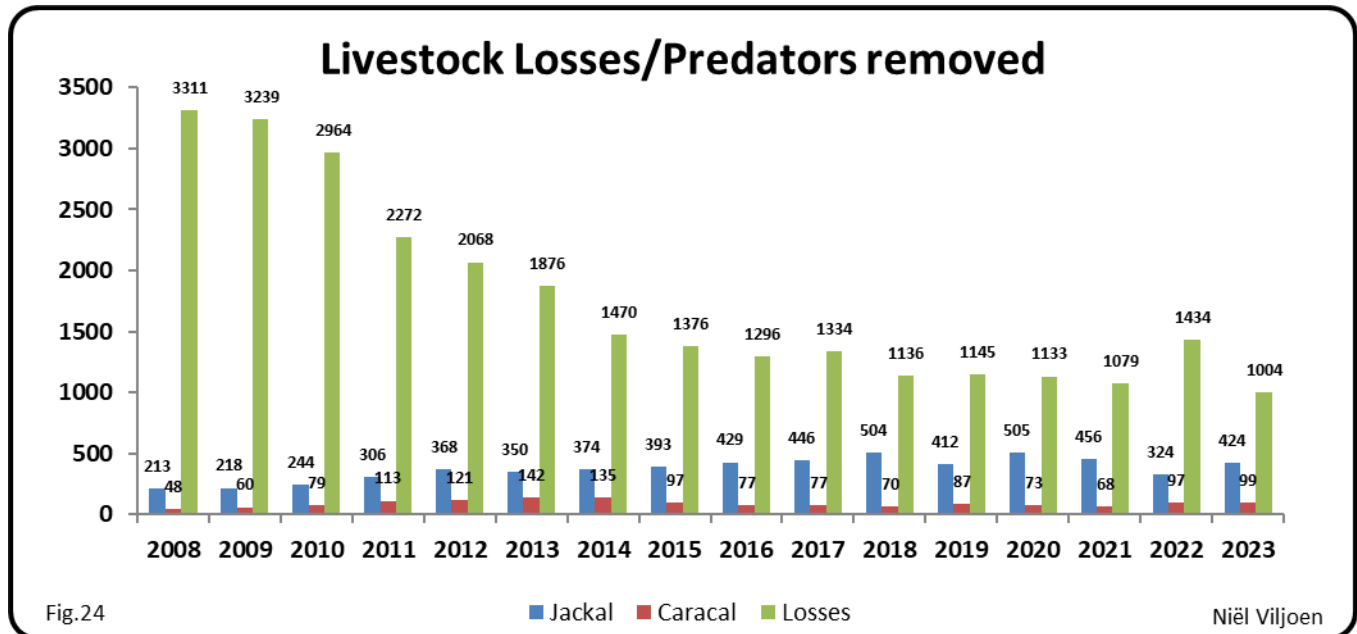
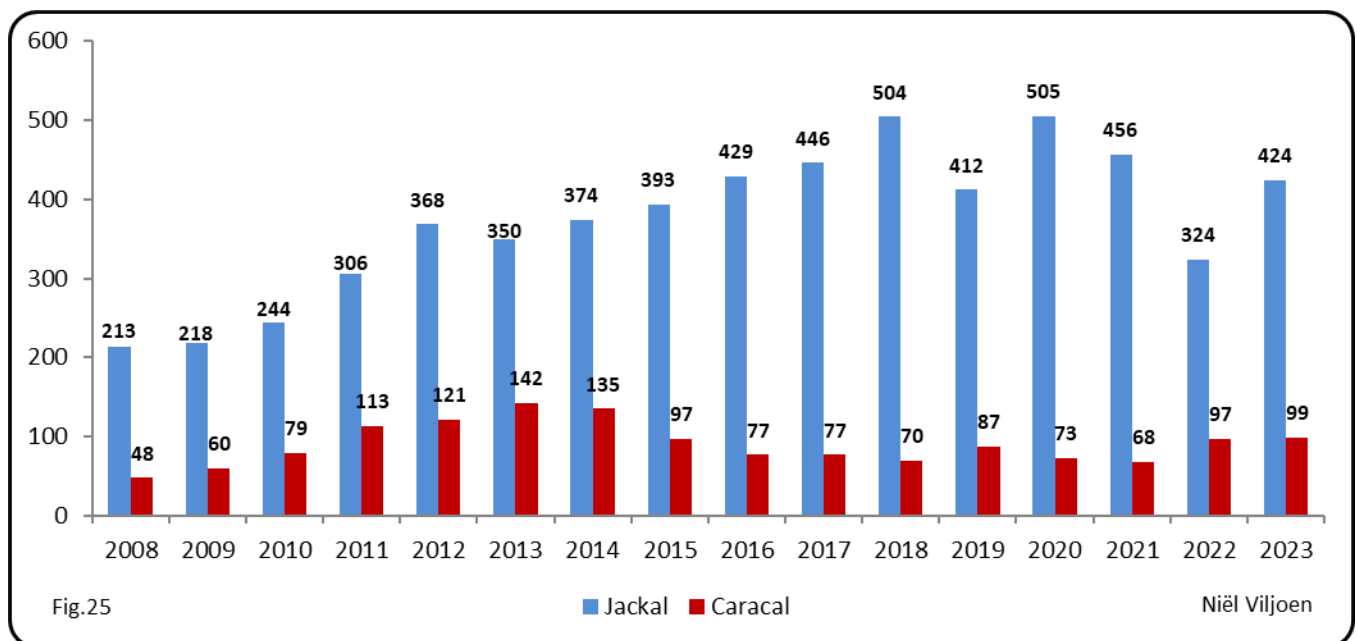


Fig.25 reflects the predator numbers (Black backed jackal and Caracal) removed.



Predation percentage

The diagram below (Fig.26) represents the percentage predation losses since the project was initiated in 2008 and how livestock losses were reduced annually.

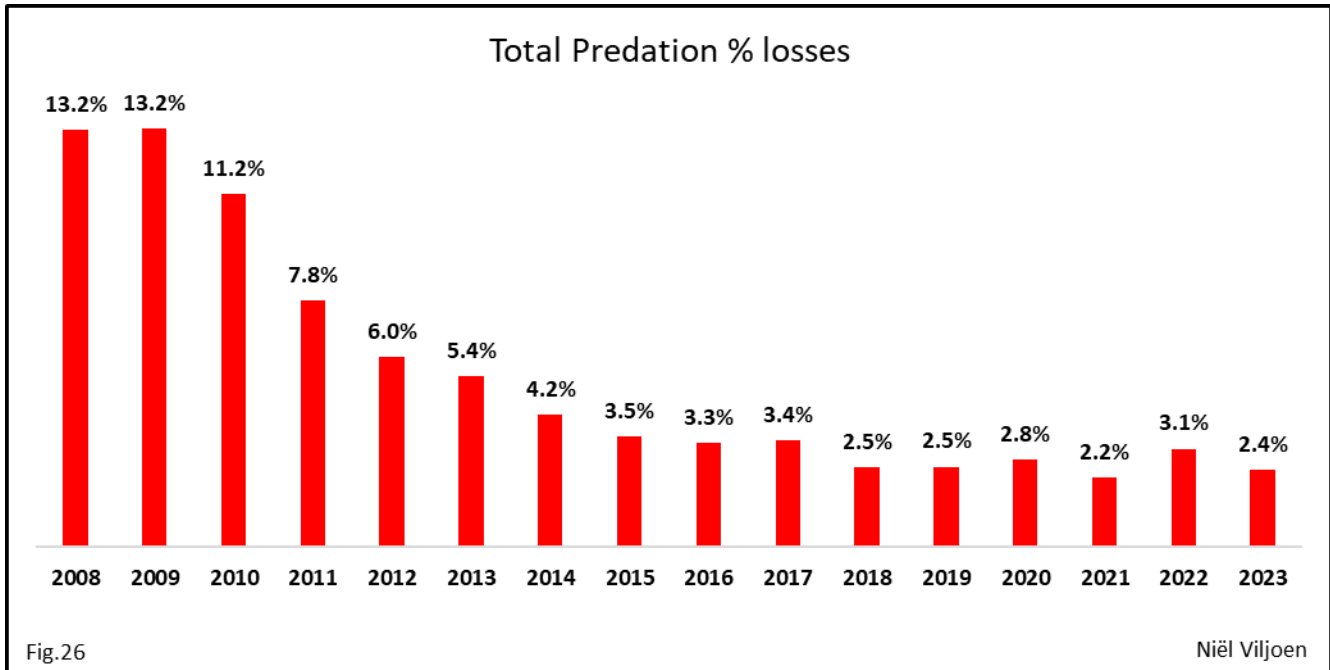
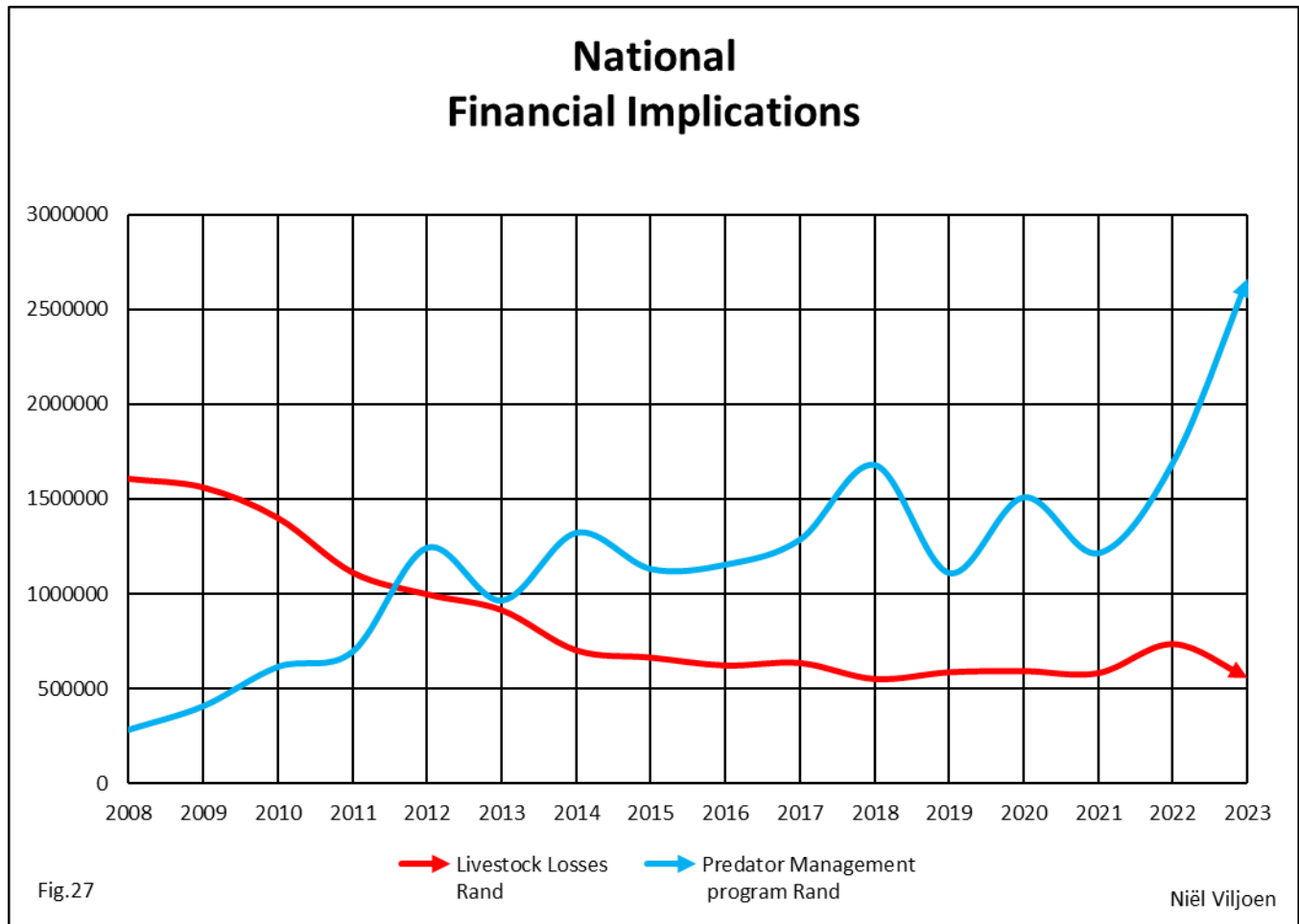


Fig.26 is unquestionably a reflection of the success of the programme since 2008. Predators and predation losses are manageable, but requires knowledge on predator behaviour, correct implementation of control methods, continuous training, updated skills and an open headed adaptive management outlook.

13.2% Livestock losses is unacceptable, but most livestock farmers will agree that 2.4% livestock losses due to predators is more acceptable.

Financial implications

The graph below (Fig.27) indicates the annual value of the number of livestock lost due to predators, compared to money spend on a workable livestock predation management program.



In the figure above (Fig.27) the decline in value of livestock losses due to predation from 2008 is clearly visible. The value in livestock that were lost due to predators peaked in 2008 with a value just over R1,6 million. This amount declined to a stable amount of R 0,6million/annum over the last eight years.

The stability of the graph indicating livestock losses over the past six years is clearly visible, while on the other hand the graph for expenses to implement a livestock- and predation management program had some wild ups and downs. Once-off investment in jackal proof fencing to control predation losses should be considered. This is a long-term investment which will secure better results in years to come.

Communal farms

The second-year assistance, support, monitoring, and training on a communal farm in the Mount Fletcher area is definitely challenging, with continuous new challenges that are identified. Training these farmers to understand predators and predator behaviour is one of the focus points. Once predators responsible for livestock losses could be identified accurately the implementation of a proper predator management program could be proposed and implemented.

The following table indicates the venues of training as well as the attendance.

Date	Town	Farmers attended
12/02/2024	Sterkspruit	18
13/02/2024	Matatiele	50
14/02/2024	Butterworth	32
15/02/2024	Lady Frere	30
16/02/2024	Middeldrift	22

A total of 152 farmers attended these training days. They have a big need for assistance and more training would be very valuable to them.

Predators

Working amongst these farmers daily, experiencing their struggle and understanding crucial facts undermining their livelihood, financial progress, and their ability to grow to their full potential as a well settled and respected livestock farmer, is a major challenge. Information available shows that it is not wild predators causing so many losses amongst livestock, but domestic- and stray dogs that are undoubtedly the main course of livestock losses.



Three stray dogs are busy killing an ewe next to the road.

On 5 October 2024, a training day for communal farmers was held at Mount Fletcher. The training was well attended and good interaction between farmers and trainers took place. The concern from these farmers confirmed the impact of stray dogs on their livestock.



Two trapping cages were donated by NWGA to these farmers. Farmers received training on how to use these trapping cages, with the idea to assist these farmers to catch the stray dogs causing problems amongst livestock.



The donation of two trapping cages was well-accepted and much appreciated.

These cages were subsequently rotated between the different shearing sheds in the area. It was not long before the results were highlighted, confirming the threat of stray dogs to their livestock.



One of the many culprits caught with trapping cages.

Communal farmers overview:

The usual threat of predators (Black backed jackal/caracal) that is found in South Africa on commercial farms is not at all applicable to these communal farmlands. Overwhelming human activity, population density and food scarcity for predators force these predators to move to areas with more preferred ecosystems and healthier biodiversity.

Free roaming dogs and stray dogs are around in numbers to destroy livestock and pose a definite disease threat to humans.

It seems that the situation with the stray dog issue in the communal areas is totally underestimated and that urgent attention should be given to this problem as soon as possible. Once these dogs start to breed in the wild (seems to be already happening) and raising pups in the field, the threat is moving past the point to be easily resolve. Another “Dingo” on the horizon, following in the footsteps of the same man-made predator created in Australia. When stray dogs become wild dogs, control is lost and vaccination against serious diseases (i.e. Rabies) will be almost impossible. This will open the door and create life threatening situations with dogs attacking humans and especially kids. Outbreaks of rabies will also escalate even further.

To become financially independent, communal producers need more lambs and they need to raise them successfully to sell them. It is of no use to only spend millions of rand to improve wool quality and -production, without prevention of predation on their lambs.

To be addressed:

- All dog owners must understand and obey responsible ownership regarding dogs.
- Assisting and training farmers to capture stray dogs (Trap cages)
- Local police to assist with locating and removing stray dogs.
- Funds are needed to assist local veterinarians to spay these dogs.
- The SPCA seems to have moved out of these areas, they need to return.
- Keeping dogs and livestock from national roads must be prioritised. (Shocking scenes of dead dogs and cattle, as well as horses lying next to the roads are evident). Very disturbing scenes of people (alongside dogs) helping themselves with some of the meat of these road kills. The health of humans is at risk.
- Department of health, educating people on the health risks of eating meat from road kills is urgently needed.
- Helpline advertised alongside roads to immediately report any roadkill.
- Municipalities responsible for immediate removal of dead carcasses alongside roads.

To improve health and wealth on communal farmland, issues regarding stray dogs must be addressed.

Conclusion

The past sixteen years have been a wonderful journey, involving farmers, livestock, predators, the broader society, and the quest to strive for an even better coexistence for all. The bigger picture remains that whatever experiments and results we invest in, biodiversity must always be respected and pursued. Protecting and preserving what every farmer so desperately relies on, is a healthy biodiversity.

Lead by example, the birth and rise of the monitored farms back in 2008, an initiative generated within the National Woolgrowers Association of South Africa (NWGA) is a growing success. Assisting all livestock farmers to understand the importance, gain the necessary knowledge, to manage workable, financially liable solutions for every individual farmer with his own unique situations. The importance of adaptive management skills must be underlined again, the total picture of a toolbox of available methods the departure point.

The first communal monitor farm was established in 2022, bringing about a new challenge, but also new opportunities.

The program is supported financially by Predation Management South Africa (PMSA), with special reference to AgriSETA, the Red Meat Producers Organisation (RPO) and the National Wool Growers' Association of South Africa (NWGA).

The monitor farms are perfectly positioned in gaining more experience and to inform farmers on new and workable livestock predation management strategies.

Acknowledgements

AgriSETA

All twenty-seven monitor farms, farmers, managers as well as their co-workers.

Communal monitor farm in Mount Fletcher – Interesting challenge

Predation Management South Africa (PMSA) – Supporting the project

Red Meat Producers Organisation of South Africa (RPO) – Funding

National Wool Growers Association of South Africa (NWGA) – Funding

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