



'Salomo', the well-known trophy breeding buffalo bull (*Syncerus caffer*) of 4 Daughters Ranching, North West Province. Two major obstacles affecting buffalo breeding is inbreeding and disease. 4 Daughters Ranching has a strict policy and high standard concerning these two hindrances.

Photo courtesy 4 Daughters Ranching.

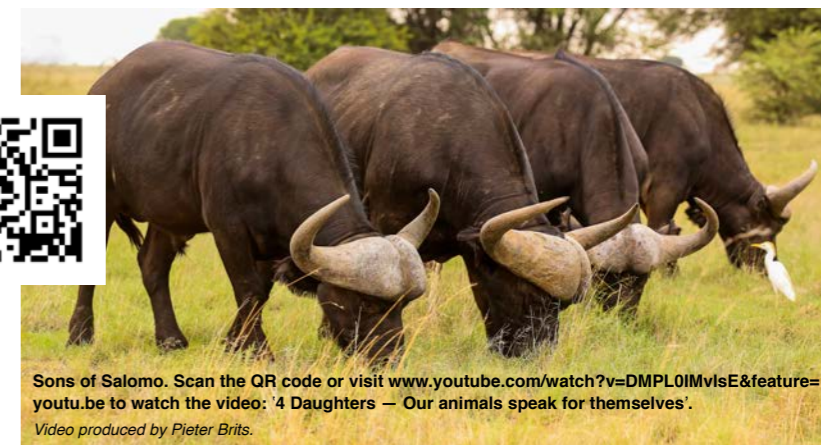
RANCHED BUFFALO INCENTIVES

by Joseph Mülders



Joseph Mülders.

The wildlife ranching industry has been one of the fastest growing industries in South Africa over the past two decades. Live wildlife sales make up a major part of this progression with the total value of game animals sold at formal auctions increasing from R93 million in 2005 to over R1,8 billion in 2014 (EWT 2016; Cloete *et al.* 2015). This is an average annual increase of 39% over these nine years and on top of this only 20% of all game is sold at auctions, meaning these figures should be much higher (ABSA Outlook 2014). The investment potential in the industry has attracted private interest that has led to a demand for quality game and thus pushed prices up.



Sons of Salomo. Scan the QR code or visit www.youtube.com/watch?v=DMPL0IMvisE&feature=youtu.be to watch the video: '4 Daughters — Our animals speak for themselves'. Video produced by Pieter Brits.

The African buffalo (*Syncerus caffer*) is a prime example of a ranched species that, because of its popularity in the hunting and tourism industry and the subsequent demand for superior genetics and disease free herds, has rapidly increased its financial value over the past 10 years. Historically, the financial value of buffalo has been higher than most other ranched game. The average price for a buffalo bull has been fairly stable between 2003 and 2008, averaging around R140 000 (Vleissentraal auction data). Since 2008 however the price has increased dramatically, averaging R955 000 in 2014 (Vleissentraal auction data 2014). When asked about this rise in

buffalo prices, WP van der Merwe, a buffalo rancher in the KZN region, said: "Everybody is bidding for the best buffalo and the more these animals catch people's attention the more they fetch high prices. This makes you want to breed better to get superior quality genetics, because you will be rewarded." Bear in mind these average prices are from a single auction house and heavily skewed because of record prices paid for prime breeding buffalo in recent years and should not be used as a guide for investment purposes. Nonetheless it illustrates the upward trend in demand for, in a ranching sense, a 'superior' animal. These trends have obvious advantages for investors and ranchers

'Salomo', measured at the age of 9 years, 53.5" Spread, 18" Boss, SCI: 136.5". DNA and pedigree of at least three generations with photos are kept on record at 4 Daughters Ranching. All measurements and inoculations are done by veterinarians.





At the annual Kirkwood Wildfees Game Auctions in association with the Addo Elephant National Park, game buyers and sellers of game are brought together to auction off a variety of game species. Animals that attract the most interest and generate the highest revenue are the disease-free Addo Elephant National Park buffalo.

Photos © Quintus Strauss.



South African NATIONAL PARKS
ADDO ELEPHANT NATIONAL PARK

parks (SANParks Annual Reports). Another example is Ezemvelo KZN Wildlife who received R78 million through live sales between 2010 and 2015.

The SANParks live sales revenue goes into the Parks Development Fund (PDF) and is used to expand, maintain and fund various new and existing conservation initiatives across the country. The Ezemvelo revenue is directed back toward conservation goals, of which a portion is paid to the local community to promote their positive involvement as well

as local economic development. This is a sizeable direct financial contribution to the sector of which the amount contributed is highly dependent on the financial value of game sold. In fact, game that are highly valued in the ranching industry provide for a large proportion of this income.

According to John Adendorff, the conservation manager at the Addo Elephant National Park, approximately a third of revenue received from live sales is from the sale of buffalo. "Our buffalo don't sell for as much as others in the country but at about R8 to R9 million in



problematic for marketing buffalo because regulations limit the movement and therefore use of diseased populations. As a result, diseased buffalo lose financial value.

Buffalo populations in Ezemvelo KZN Wildlife parks for example are all within the Corridor disease area, which places restrictions on their sale and drastically reduces their value.

R78 million in total revenue received from sales since 2010, 71% was received through the sale of white rhino (Ezemvelo, KZN Wildlife Sales Data – Rahman Devduth).

The KNP has the largest population of buffalo in South Africa estimated at approximately 35 000, but their disease status restricts an otherwise massive income generating potential. To make matters worse, the sale of other cloven hoofed game has also been restricted over the past couple years because of the nature and incidence of foot and mouth disease.

"Other than white rhinos, disease regulations restrict the sales and movement of game from the Kruger to other areas. Losing this valuable source of income means direct sales from other parks become even more important as a source of revenue into the PDF," says Dr Hofmeyr.

The high price means ranchers increasingly want to protect their buffalo (and their investment). This is understandable but often

revenue per year, they are still an extremely valuable input to the PDF," says John.

Dr Markus Hofmeyr, the general manager of Veterinary Wildlife Services department at the Kruger National Park (KNP) stated: "The high price of buffalo makes them a primary income generator for conservation projects and sustaining national and provincial parks."

Some parks however are limited in their sales potential because of either their lack of excess wildlife available for sale or else restrictions because of disease. The disease restrictions are especially

The high price of buffalo makes them a primary income generator for conservation projects and sustaining national and provincial parks.

At these parks the white rhino (*Ceratotherium simum*) takes the reigns as the major contributor to live sale revenue. Other game species are also sold but of the



African buffalo, Kruger National Park.
Photo © Bernhard W Bekker.



In order to obtain a functional disease-status data base of each buffalo farm, the local state veterinarian must be informed timeously of any buffalo hunting, culling, or darting for game management, where the animals may be sampled for disease screening purposes.

Photo © Quintus Strauss.

done through more intensive ranching approaches, such as selective breeding, feeding schemes, vaccination and pest and predator control.

These approaches may reduce the contribution of the sector to pure buffalo conservation with wildlife ranched buffalo sometimes being considered less 'wild'.

When asked about the effects of breeding programmes in an interview by Bloomberg, Cindy Harper of the University of Pretoria's Veterinary Genetics Laboratory,

said: "If a breeding programme is focused on only one trait, such as horn length or colour, you risk losing other important traits and genetic variation and fixing negative factors in your herd." (Spillane 2015)

As the natural pressures, conditions and selective processes necessary for the preservation of the natural genetic integrity are removed, over time they could possibly lose important adaptations necessary for survival. Furthermore, associated ecosystem as a whole may deteriorate in these controlled



Dr Pim van Hooft, associate professor at Wageningen University in the Netherlands.

Dr Pim van Hooft found that when buffalo from the 22 participating ranches are pooled, the genetic diversity is greater than that of the Kruger National Park (KNP) (Figure 1). This is an important finding as the privately owned animals are 10 times less than the buffalo in the KNP (30 000), but still the genetic diversity is higher. When investigating the ranches individually, Pim found most ranches have less genetic diversity than the KNP, but more than that of the Hluhluwe-iMfolozi Park (HiP).

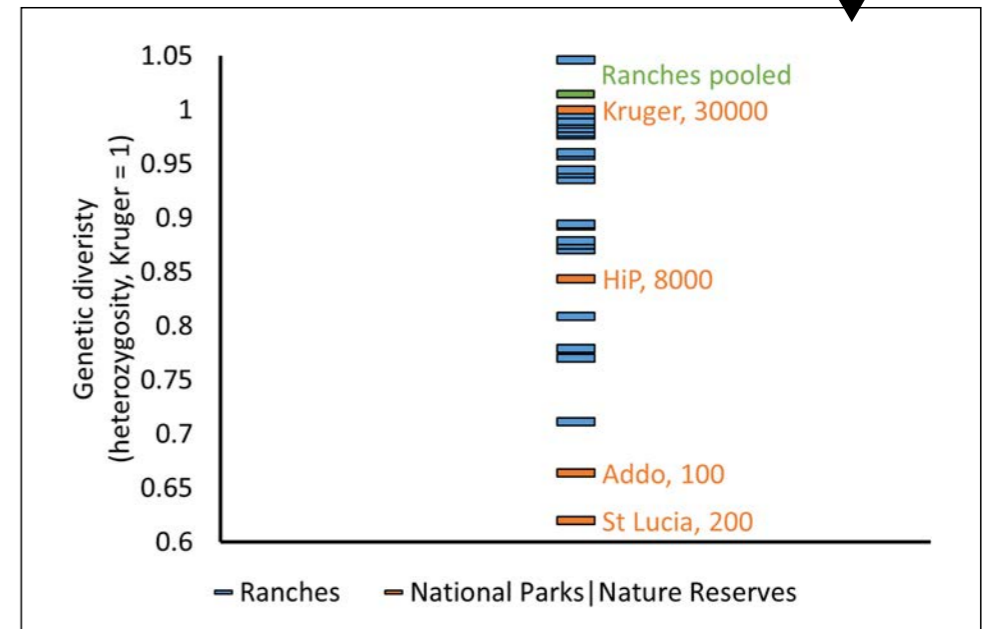


FIGURE 1: Comparing the genetic diversity of privately owned buffalo with those in the national parks in SA. Orange = the National Parks (KNP, HiP, Addo and St Lucia, respectively), blue = individual buffalo ranches, green = pooled data from private ranches.

conditions. An example may be the persecution of natural predators or perhaps the control of pests and disease may introduce harmful chemicals into the ecosystem.

Currently only 6% of all private wildlife ranches in the country have intensive breeding components and so this does not pose a major threat to the contribution of the sector to conservation. But with the increasing value of specific game such as the buffalo, the extent of these types of ranches is expected to rise (EWT 2016). On the

other hand however, in a recently study (still under review) conducted by Dr Pim van Hooft at Wageningen University in The Netherlands together with colleagues at Unistel, Wildlife Stud Services (WS2), North-west University (NWU) and the Agricultural Research Council (ARC), it has been seen that selective breeding in South Africa has not reduced genetic diversity in all buffalo ranches.

Preliminary results found in certain cases the genetic diversity of herds on private land (where selective

breeding occurs) surpasses that of herds in the KNP (where natural breeding occurs).

"It seems the exchange of individual buffalo between locally ranches populations has increased the genetic diversity on various specific ranches," says Dr Van Hooft.

At this point the reasons for these patterns are just speculation but are seen as a result of either mixing genes from within the South African populations or from introducing genes from outside the country (i.e. East African buffalo), mimicking



'Inala', measured at the age of 6 years: 51 2/8" Spread, RW: 137.75. 'Inala' will be on auction at the eighth Thaba Tholo production auction which will be held on 15 and 16 September 2016. Scan the QR code or visit www.youtube.com/watch?v=r1RdBa-sZ3M to watch the video: 'Inala - Buffalo Bull'.
Video produced by Tracks Multimedia.



Thaba Tholo in the Limpopo Province sells the majority of its excess game at an annual auction and prides itself on its long history of selling quality animals. Genetic diversity is safeguarded and enhanced by accommodating large, yet sustainable numbers of each species along with the selective breeding and genetic monitoring of its rare game. Thaba Tholo was included as part of the research conducted by Dr Pim van Hooft and excelled in terms of genetic diversity of South African buffalo on ranches in comparison with KNP and HiP.



ACKNOWLEDGEMENTS

The author acknowledges JP van Heerden (Game Capture Unit, Ezemvelo KZN Wildlife), WP van der Merwe (buffalo rancher, Winterton), Lulu Spilsbury (buffalo rancher, Harrismith), Dr Markus Hofmeyr (general manager of Veterinary Wildlife Services at the Kruger National Park), Rahman Devduth (Natural Resources Trade Coordinator at Ezemvelo KZN Wildlife), John Adendorff (Conservation Manager at Addo Elephant National Park), Musa Mntambo (Manager of Communication Services at Ezemvelo KZN Wildlife), Dr Roan Louw (North-West University), Dr Pim van Hooft (Resource Ecology Group, Wageningen University, The Netherlands), Dr Ben Greyling (Beef Cattle Improvement: ARC) and Luca Mendes (wildlife veterinarian) for their unwavering assistance and insights on the subject.

REFERENCES

Absa. 2014. *Absa Agricultural Outlook*. Agriconnect.
 Cloete, P.C., Van der Merwe, P., Saayman, M. 2015. In Press. *Profitability of the game ranching industry in South Africa, Second edition*. Pretoria: Caxton Publishers.
 Dry, G. 2011. *Commercial Wildlife Ranching's Contribution to the Green Economy*.
 EWT. 2016. *The Role of the Wildlife Ranching Industry in South Africa's Green Economy*. Endangered Wildlife Trust. Gauteng, South Africa.
 SANParks. *2006-2014 Annual Reports*. South African National Parks.
 Spillane, C. 2015. *Record Buffalo Prices Spark Warnings of Bubble*. Bloomberg.

the historic migration of groups of individuals. If the latter is true these results preclude a contribution by the industry towards genetic conservation. On the other hand, if the former is true the ranching of buffalo in South Africa is providing a major additional service towards their genetic conservation (Pers. Comm. Dr Pim van Hooft). More work needs to be done to confirm or discard these considerations. There is currently an estimated minimum of 60 000 buffalo in the private sector. This is approximately double that of herds in protected areas (WRSA). These proportions mean the private industry has a strong influence on the quandary

of buffalo conservation. Although being mindful of the risks we must not ignore the positive outcomes arising from their inclusion. For one, the maintenance of disease free herds is a clear direct contribution to the long-term conservation of both the buffalo and affected ecosystems. Many protected parks have a high prevalence of various diseases, such as brucellosis (CA), bovine tuberculosis (TB), foot and mouth disease and Corridor disease. These parks will have disease management strategies in place but, because of financial and practical limitations, approaches often try to reduce the concentration

of diseased individuals rather than eliminate disease altogether. The private sector provides an invaluable source of disease free buffalo. The game sold by conservation authorities are typically part of the yearly surplus, which is removed to promote ecological stability. These removals would otherwise have been done through translocations (which is expensive) or culling (which is wasteful). Live sales have become increasingly lucrative as an option for population management by conservation agencies. The sale of excess wildlife allows for an increased added ability to achieve goals that otherwise would not have been achievable.

"We must never rely on auctions to survive, because there will be years where there are not sufficient animals to sell. Whatever money is received is seen as a bonus," says Musa Mntambo, the manager of communication services at Ezemvelo KZN Wildlife. This 'bonus' plays a valuable role in a system where 'what gets done' is so often dependent on financial limitations. Many say the drastic rise in value of rare game is not sustainable. But regardless of the projected or expected trends in the value, the current increase provides a magnificent additional source of revenue to conservation authorities and their initiatives.

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